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The Relationship of Physical Discipline and Psychological Maltreatment in Childhood to the Use of Dysfunctional Tension-Reducing Behaviors in Adulthood: The Mediating Role of Self-Capacities

Brian Allen
Indiana University of Pennsylvania

THE RELATIONSHIP OF PHYSICAL DISCIPLINE AND PSYCHOLOGICAL MALTREATMENT IN CHILDHOOD TO THE USE OF DYSFUNCTIONAL TENSION-REDUCING BEHAVIORS IN ADULTHOOD: THE MEDIATING ROLE OF SELF-CAPACITIES

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Brian Allen

Indiana University of Pennsylvania

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Indiana University of Pennsylvania

The School of Graduate Studies and Research

Department of Psychology

We hereby approve the dissertation of

Brian Jeffrey Allen

Candidate for the degree of Doctor of Psychology

_____ _____
Donald U. Robertson, Ph.D.
Professor of Psychology, Advisor

_____ _____
Lynda M. Federoff, Ph.D.
Professor of Psychology

_____ _____
John A. Mills, Ph.D., ABPP
Professor of Psychology

ACCEPTED

_____ _____
Michele S. Schwietz, Ph.D. Date
Assistant Dean for Research
The School of Graduate Studies and Research

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Author: Brian Allen

Dissertation Chair: Donald U. Robertson, Ph.D.

Dissertation Committee Members: Lynda M. Federoff, Ph.D.
John A. Mills, Ph.D., ABPP

The current study examined the utility of Self-Trauma Theory for explaining the long-term impact of the experience of childhood physical discipline and/or psychological maltreatment. Specifically, the self-capacities of interpersonal relatedness, identity, and affect regulation were tested as mediators of the impact of child maltreatment on different tension-reducing behaviors in adulthood: substance use, aggression, and suicidality. Hierarchical regression analyses were used to examine data collected from 268 university students who completed the Personality Assessment Inventory, Comprehensive Child Maltreatment Scale, and Inventory of Altered Self-Capacities. Results showed that the self-capacities were each predicted by different combinations of maltreatment variables and that the ability of self-capacities to mediate the long-term impact of child maltreatment is dependent on the tension-reducing behavior under examination. Specifically, identity impairment significantly predicted alcohol use problems and interpersonal conflicts significantly predicted drug use problems. Interpersonal conflicts partially mediated the relationship between child maltreatment and aggression as emotional abuse continued to exert a significant effect on aggression after controlling for self-capacities. Lastly, identity impairment and affect dysregulation fully mediated the relationship between child maltreatment and current suicidality. Theoretical implications are discussed as well as directions for future research.

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CHAPTER 1: STATEMENT OF THE PROBLEM

A substantial body of research exists examining the long-term consequences of physical discipline during childhood. Much of this research appears to link childhood physical discipline (CPD) with an increased likelihood of tension-reducing behaviors such as substance use, aggression, and suicidality in adulthood. In addition, research has begun to focus on the role of childhood psychological maltreatment in the emergence of these tension-reducing behaviors. Results appear to demonstrate that adults whose parents were emotionally abusive during childhood are at increased risk for the development of substance use problems, aggressive behavior, and self-injurious thoughts and behaviors. This research, although descriptive, fails to offer theoretical explanations for these observed connections. One possible explanation is offered by Self-Trauma Theory, which postulates that CPD and psychological maltreatment result in an inability for the child to develop appropriate emotion regulation skills, styles of interpersonal interaction, or a coherent sense of self. Furthermore, the inappropriate development of these self-capacities hinders the adult's ability to cope effectively with stress and subsequently results in an individual resorting to the use of these tension-reducing behaviors. This study explores the contentions of Self-Trauma Theory by examining the mediating role of self-capacities (i.e., identity, interpersonal relatedness, affect regulation) in the link between CPD and childhood psychological maltreatment and the use of tension-reducing behaviors in adulthood.

Before discussing the current research base, there are general issues that deserve attention. Research into the effects of CPD or psychological maltreatment is often hindered by the co-occurrence of these factors. In a study examining the experience of

various forms of child maltreatment among adult respondents, Higgins and McCabe (2000) found a correlation of .74 for the frequency of physical abuse and psychological maltreatment experiences. Rodgers, Lang, and Laffave (2004) found a significant correlation between the self-reported occurrence of physical abuse and psychological maltreatment in childhood in a sample of adults. Briere and Runtz (1990) also noticed a high co-occurrence of childhood physical and psychological maltreatment among a sample of female college students. Some evidence suggests that these experiences may not only co-occur, but that the cumulative effect on adult tension-reducing behaviors may be greater than that of either factor occurring independently (Anderson, Tiro, Price, Bender, & Kaslow, 2002; Arata, Langhinrichsen-Rohling, Bowers, & O'Farrill-Swails, 2005). Other research suggests that the influence of physical abuse on adult emotional distress may be minimal or even non-significant after controlling for the effects of psychological maltreatment (Gross & Keller, 1992). It is worth noting that a high rate of co-occurrence has also been observed between childhood sexual abuse (CSA) and physical abuse, and CSA and psychological maltreatment (Higgins & McCabe). This suggests that CSA may emerge as a significant confound when examining physical and/or psychological maltreatment; however, many studies have failed to control for the experience of CSA.

Research examining the long-term impact of childhood maltreatment, in general, has typically focused on the use of retrospective methodology. Confidentiality and legal standards usually prevent the verification of past incidents of maltreatment and hinder the identification of children for participation in longitudinal investigations. Retrospective methodology is less powerful than the longitudinal design because it is susceptible to

errors and biases in reporting. However, one review concluded that the available research evidence suggests that the reliability of retrospective reports of childhood trauma may be acceptable (Read, van Os, Morrison, & Ross, 2005). Nonetheless, this design limitation must be taken into account when interpreting results and may weaken the confidence one has in the empirical accuracy of the findings.

Research will be examined suggesting that the experience of CPD or childhood psychological maltreatment is a significant risk factor for the development of tension-reducing behaviors in adulthood, namely suicidality, substance use, and aggression. Particular attention will be paid to the few well-controlled studies employing longitudinal methodology and how these more powerful designs support the conclusions drawn from the retrospectives studies. In addition, the co-occurrence of CPD and childhood psychological maltreatment, and the difficulty in separating the impact of these two experiences, will be emphasized. Studies controlling for other types of maltreatment will be examined and highlighted. The discussion will then turn to describing the tenets of Self-Trauma Theory and the utility of this theory in explaining tension-reducing behaviors in adult survivors of CSA. Research will then be reviewed suggesting that Self-Trauma Theory may also have applicability in understanding the use of tension-reducing behaviors in adult survivors of CPD and childhood psychological maltreatment. Finally, the methodology and results of an empirical investigation testing this application of Self-Trauma Theory will be discussed.

Tension-Reducing Behaviors in Adulthood

Tension and stress are inevitable experiences throughout the human experience; however, people may vary in the ways they attempt to cope with these experiences. A

number of tension-reducing behaviors, such as exercise or meditation, are viewed as positive forms of coping with stress. Other behaviors are viewed as more negative forms of coping because of the detrimental impact they can have on the health and well-being of oneself or others. Examples of these negative tension-reducing behaviors include alcohol and drug use, aggression, and self-injurious thoughts or behaviors (suicidality). These negative tension-reducing behaviors are the subject of the current investigation.

Substance Use

The stress-coping theory of addiction suggests that people who experience difficulty in coping with stressful events are more likely to resort to the use of substances as a form of tension reduction (Wagner, Myers, & McIninch, 1999). This theoretical proposition has received much support from the empirical literature. For example, Breslin, O'Keeffe, Burrell, and Ratliff-Crain (1995) examined stress, coping strategies, and alcohol consumption in a sample of women. They found that women who were less problem-focused in their orientation to coping with stress reported greater alcohol consumption than women with a more problem-oriented approach. Similar results have been found elsewhere with adults and adolescents (Cooper, Russell, & George, 1988; Labouvie, 1986; Wills, 1986). Studies examining the impact of stress on illicit drug use have provided similar conclusions. For example, Preston (2006) examined various factors influencing marijuana use among adults between the ages of 18 and 25. Results suggested that stress, prior social learning, and poor self control were the strongest predictors of chronic marijuana use. Other researchers have found similar results when examining the use of other substances (Galaif, Nyamathi, & Stein, 1999; Galaif, Sussman, Chou, & Wills, 2003; Young, Boyd, & Hubbell, 2000). These results, when taken together,

suggest that increased stress and greater lack of coping resources increases the risk for the use of a variety of substances.

Aggression

Aggression is an often noted consequence of stress and is frequently classified as a negative form of coping. For example, Wadsworth and Compas (2002) studied 364 adolescents and examined factors predictive of increased levels of aggression. They found that those participants with greater economic concerns and increased levels of family conflict were more likely to display aggressive behaviors. Another study identified chronic stress as a predisposing factor to domestic violence (Frye & Karney, 2006). Research by Verona and Kilmer (2007) noted gender differences in aggressive reactions to stress. They found that women under low levels of stress responded more aggressively to an acute stressor whereas the converse was true of men. These authors suggest that possible gender differences in responses to long-term and acute stressors may exist. Some evidence suggests that aggression may be particularly likely when an individual lacks the resources to cope with stress. For example, Hughes, Stuart, Gordon, and Moore (2007) found that increasing levels of borderline personality disorder features (e.g.., poor interpersonal relationships, affect regulation problems) were significantly related to an increased likelihood of aggression. As with substance use, increasing levels of stress and more limited coping skills appear predictive of aggression.

Suicidality

Evidence suggests that people confronted with a substantial number of stressors, such as a potentially terminal medical disease, family and peer difficulties, and depression, among other factors, are at increased risk for committing suicide (Galaif,

Sussman, Newcomb, & Locke, 2007; Marshall, Burnett, & Brasure, 1983; Wodarski & Harris, 1987). In addition, converging evidence suggests that people utilizing dysfunctional or inadequate coping skills are at increased risk of suicidal behavior and attempts. Piquet and Wagner (2003) compared a group of adolescents who attempted suicide with a control group matched for diagnosis and demographic characteristics. They found that the suicide attempting group often displayed less effective coping skills than the control group and, those in the suicide-attempting group who displayed more effective coping skills at a 6-month follow-up, were less likely to have re-attempted suicide. Another study found that avoidant coping strategies and social withdrawal were positively correlated with suicidal ideation and attempts (Kidd & Carroll, 2007). This evidence suggests that stress and lack of personal coping skills can increase one's likelihood for considering or displaying suicidal behavior.

CPD and Tension-Reducing Behaviors in Adulthood

In the United States, childhood physical discipline has long been a widely-used practice of correcting unwanted behavior in children. CPD is defined as any kind of punishment that involves striking the body of the child in an attempt to alter behavior (Friedman & Schoenberg, 1996). Although the appropriateness of using mild forms of CPD (also known as corporal punishment) is a hotly debated topic, most agree that severe forms of CPD are not acceptable. These more severe manifestations are typically termed child physical abuse (CPA). The United States Department of Health and Human Services (2000) defines CPA as "physical acts that have caused or could have caused physical injury" (p.8). Clearly, the criterion that discriminates CPA from corporal punishment is the presence or potential of physical injury. Research into the

consequences of CPD has yielded consistent findings: children experiencing physical discipline of any degree are at increased risk for developing dysfunctional behaviors later in life. Research exploring corporal punishment and CPA will be reviewed as both forms of CPD are examined in the current study.

Substance Use

Research has demonstrated that adolescents and adults who experienced corporal punishment may be at an increased risk of abusing substances compared to adults who did not experience physical punishment. Straus and Kantor (1994) examined data collected from over 2,000 families as part of a national survey. Using logistic regression analyses these authors found that adults who self-reported a history of corporal punishment were at increased risk for abusing alcohol. The authors discovered a dose-response relationship where greater levels of corporal punishment were predictive of greater alcohol abuse. These authors also found being male and from lower socioeconomic levels were predictive of alcohol abuse. Similar results have been found in other cultures. Lau, Kim, Tsui, Cheung, Lau, and Yu (2005) used logistic regression analyses to examine correlates of physical discipline histories of adolescents in Hong Kong. These authors found corporal punishment was predictive of the current use of alcohol and illicit drugs and that increasing levels of physical punishment as children were more predictive of current substance use. Durrant (2000) used time-series methodology to suggest the 1979 implementation of a corporal punishment ban in the country of Sweden may be responsible for the reduction in rates of youth alcohol and drug use in that country.

Research examining the impact of CPA on substance use is more developed. In a survey of 4,790 adolescents in the state of Washington, Bensley, Spieker, Van Eenwyk, and Schoder (1999) used logistic regression analyses to demonstrate that the reported experience of physical abuse in childhood significantly predicted the current use of alcohol and illicit drugs. These results were found even after controlling for the effects of gender and educational level. In addition, the authors found a greater severity of abuse more strongly predicted the use of drugs. A similar study examined the responses of adolescents in the state of Minnesota (Harrison, Fulkerson, & Beebe, 1997). These authors also found the self-reported experience of CPA was related to the current use of alcohol and marijuana and that rates of substance use did not differ between genders. In one study, researchers found that adolescents with current alcohol abuse or dependence were 6 to 12 times more likely to report a history of CPA than a control group of non-alcohol using adolescents (Clark, Lesnick, & Hegedus, 1997).

In addition to an increased risk of alcohol use, elevated levels of CPA have been noted in individuals who present for substance use treatment. Ballon, Courbasson, and Smith (2001) conducted interviews with 287 individuals who presented for treatment for substance use problems and found that 50.5% of the female clients and 26% of the male clients reported a history of CPA. Of these, nearly 65% of females reported using substances as a coping mechanism compared to nearly 40% of males. In another study, 45% of women presenting for substance use treatment reported a history of CPA (Kang, Magura, Laudet, & Whitney, 1999). In addition, 13 months after the initial admission into the treatment program, the women reporting a history of CPA were displaying

significantly more problems pertaining to drug use than women without a maltreatment history.

One informative study conducted by Briere and Elliott (2003) used multiple regression analyses to examine the impact of self-reported CPA on a range of psychological symptoms and problems in adulthood. After controlling for the effects of age, sex, race, socioeconomic status, adult victimization, and childhood sexual abuse, the experience of CPA still emerged as a significant predictor of substance use. However, when examining the characteristics of the maltreatment, the authors did not find age of first abuse, age of last abuse, or chronicity of abuse to be significant predictors of substance use. These authors did not observe a sex by abuse interaction and there were no differences in effect sizes based on sex of the participant.

Aggression

Aggression and hostility are often studied behaviors believed to be linked to the experience of corporal punishment or physical abuse in childhood. Straus, Sugarman, and Giles-Sims (1997) examined the later antisocial behavior of children who received corporal punishment by parents as a corrective technique for unwanted behavior. Their findings showed a significant positive correlation between the frequencies of physical punishment (spanking) received and the level of antisocial behavior observed in the children approximately 2 years after the initial assessment. Similar results have been found elsewhere (Grogan-Kaylor, 2004; 2005). It has also been noted that the experience of corporal punishment increases the risk for later domestic violence and the use of physical discipline with one's own children (Straus, 1996). It is interesting to note that

such results have also been found across American ethnic groups (Matta, 2002) and across international cultural groups (Lansford, Chang, & Dodge, 2005).

In a meta-analysis of studies on physical punishment that included 54 studies examining behavioral problems, Paolucci and Violato (2004) found that individuals who experienced physical punishment were significantly more likely to display behavioral symptoms (i.e., aggression). Although the findings were significant, the authors noted that the average weighted effect size for physical punishment was a modest .21. As a result, the authors suggest the connection between corporal punishment and behavioral problems such as aggression may be overstated.

Research examining the consequences of CPA is more prevalent than research on corporal punishment. Much of this literature appears to echo the results of studies examining the impact of corporal punishment. For instance, Bennett, Sullivan, and Lewis (2005) investigated the impact of physical abuse on the level of anger and externalizing problems observed in children aged 3 to 7 years. Results suggest that physical abuse may be predictive of increased anger and subsequent externalizing problems such as aggression. Similarly, Shields and Cicchetti (1998) found that physically abused children displayed more aggression than non-abused comparison children. In a comprehensive review of the literature, Trickett and McBride-Chang (1995) concluded that physically maltreated children show a pervasive pattern of aggressiveness.

Research examining the long-term impact of physical abuse has produced findings suggesting that a childhood victim of physical abuse may be at increased risk of becoming a perpetrator of abuse in the future. One study examined the potential of young adults (ages 22-31) who were physically abused as adolescents to commit physical abuse

themselves (Sunday, Labruna, Pelcovitz, Salzinger, & Kaplan, 2005). These participants were asked to complete the Child Abuse Potential Inventory (CAPI), a standardized instrument that is designed to evaluate the potential of an individual to physically abuse a child. This study found that participants who reported experiencing physical abuse as children scored significantly higher on the CAPI than a non-abused control group, indicating that the abused group was at greater risk of becoming CPA perpetrators. A similar study found the degree of physical abuse experienced in childhood moderated later physical abuse potential with moderately or severely abused participants showing elevated risk whereas mildly abused participants did not (Milner, Robertson, & Rogers, 1990).

The impact of physical abuse on later antisocial behavior has been well-documented in the literature. Using a nationally representative sample, Porter, Lauterbach and Koch (2005) found nearly 20% of adults who experienced CPA displayed some form of antisocial behavior. This is not surprising given the fact that other studies have found CPA to be linked to an increased risk of aggression, impulsivity, and criminal activity in adulthood (Brodsky, Oquendo, Ellis, Haas, Malone, & Mann, 2001; Maxfield & Widom, 1996; Widom, 1989). The Porter et al. study also revealed that nearly 13% of the physically abused participants met diagnostic criteria for antisocial personality disorder. Others have also found an increased risk of a diagnosis of antisocial personality disorder among adults who were physically abused as children (Luntz & Widom, 1994). However, in another study employing male college students, no such relationship was found (Miller & Lisak, 1999). These authors suggest that the nature of their sample may have resulted

in few cases of the disorder and, therefore, question the generalizability of the study beyond the college student population.

Suicidality

Little research has examined the link between corporal punishment and suicidality; however, the limited research available does appear to support a link between these two variables. For example, Straus and Kantor (1994) used logistic regression analyses to demonstrate that adults who experienced corporal punishment were at an increased risk of suicidal thoughts even after controlling for other factors such as socioeconomic status and sex. In her time-series analysis, Durrant (2000) argues that the 1979 abolition of corporal punishment in Sweden has contributed to the reduction in the youth suicide rate in that country.

To examine the early effects of physical abuse on suicidality, Thompson et al. (2005) conducted logistic regression analyses with data obtained from a sample of 1,051 8-year old children. After controlling for demographic variables, both severity and chronicity of physical abuse, as well as the experience of multiple types of maltreatment emerged as significant predictors of current suicidal ideation. To examine the influence of CPA on adolescent suicidality, Danielson, de Arellano, Kilpatrick, Saunders, and Resnick (2005) examined data from 548 adolescents who participated in a representative national survey. Chi-square analyses showed that participants reporting a history of physical abuse were more likely than non-abused participants to report having suicidal thoughts. Furthermore, chi-square analyses revealed that adolescents related to the perpetrator were more likely to think about death than adolescents not related to the perpetrator, that boys were more likely to report experiencing physical abuse than girls,

but that girls with abuse histories were more likely to report having self-injurious thoughts than were boys with abuse histories. It is informative to note that these authors did not observe differences in suicidality based on the chronicity of the abuse.

Thakkar, Gutierrez, Kuczen, and McCanne (2000) examined the link between CPA and adult suicidality in a sample of female college students. Using regression analyses these authors found the reported experience of CPA was a significant predictor of current suicidal ideation. Bryant and Range (1997) utilized a similar retrospective methodology in a study of 486 undergraduate students. Participants who reported suffering physical injury as a result of CPA reported higher levels of suicidal ideation than a group of participants who reported experiencing less severe CPA. These authors failed to find significant gender differences in current suicidal ideation or on a global measure of suicidality.

Silverman, Reinherz, and Giaconia (1996) reported data from a longitudinal study that examined the relationship between CPA and suicidality at 15 and 21 years of age in a community sample. Results indicated that the physically abused group displayed elevated levels of suicidal ideation and suicide attempts at both age levels when compared to a control group of non-abused participants. Another longitudinal study tracked the development of 776 randomly selected children for 17 years (Brown, Cohen, Johnson, & Smailes, 1999). This study examined the influence of CPA on suicide attempts using logistic regression methodology. Results indicated the presence of physical abuse, as confirmed by either self-report or protective service records, was a significant predictor of having made a suicide attempt during both adolescence and early adulthood. Physical abuse remained a significant predictor of suicidality even after controlling for various

contextual variables. These longitudinal studies lend support to the conclusions of the retrospective studies suggesting that childhood physical abuse is a significant predictor of adult suicidal ideation and attempts.

Childhood Psychological Maltreatment and Tension-Reducing Behaviors in Adulthood

Although it has long been assumed that the emotional environment in which one is raised is critical in the development of later emotional health, research examining the impact of a deficient childhood emotional environment on psychological and behavioral functioning has lagged behind investigations of CPD. Research attempting to examine the impact of less than ideal childhood emotional support has met with many challenges. Foremost among these challenges is arriving at a consensus as to what constitutes appropriate emotional support and, subsequently, what constitutes emotional maltreatment. Terms such as *psychological maltreatment*, *emotional abuse*, *emotional neglect*, and *psychological abuse* have been offered. The American Professional Society on the Abuse of Children (APSAC, 1995) has adopted the term *psychological maltreatment* and defines such as an emotional act of "spurning, terrorizing, isolating, exploiting/corrupting, denying emotional responsiveness, or mental health, medical, or educational neglect" (p.2) perpetrated by a caregiver on a dependent child. As noted by Hart, Brassard, Binggeli, and Davidson (2002), there is still disagreement concerning exactly what types of behaviors fit into these categories; however, they comment that behaviors such as verbal threats of harm and intentional embarrassment are universally accepted as forms of psychological maltreatment.

Substance Use

Research has begun to document a connection between the experience of psychological maltreatment during childhood and the emergence of substance use in later life. One group of researchers examined the role of emotional abuse in childhood on the substance use of adolescents (Moran, Vuchinich, & Hall, 2004). Results revealed that adolescents reporting a history of being emotionally abused endorsed a greater use of alcohol and illicit drugs than their non-abused peers, but less use of these substances than physically abused peers. Similarly, Hall (2002) found emotional abuse during childhood was significantly predictive of alcohol and illicit drug use during adolescence. She also found a significant interaction between gender and emotional abuse with emotionally abused males displaying more substance use behaviors than emotionally abused females.

One study using structural equation modeling examined the impact of childhood emotional abuse and other factors, as retrospectively reported in adulthood, on the prospective use of alcohol at various time points in adulthood (Galaif, Stein, Newcomb, & Bernstein, 2001). Results showed that self-reported childhood emotional abuse was a significant predictor of later adult alcohol use for both men and women, with men showing more elevated levels of alcohol use than women. Barker (1998) examined the role of childhood psychological maltreatment on the current substance use of college women. She concluded women who reported having been psychologically maltreated during childhood were more likely to use alcohol and illicit drugs than a control group of non-abused participants. There is also limited evidence that emotional abuse during childhood may be predictive of failure in drug rehabilitation treatment (Kang, Deren, & Goldstein, 2002).

Aggression

Psychological maltreatment during childhood has emerged as a potential precursor to aggression and hostility in adulthood. Loos and Alexander (1997) administered a series of assessment measures to a group of 401 undergraduate students. Regression analyses revealed a student's self-report of being verbally abused by his or her parent(s) during childhood significantly predicted increased scores on the Brief Anger and Aggression Questionnaire. Making this study especially interesting is that the researchers controlled for the effects of other forms of maltreatment such as physical abuse and sexual abuse before evaluating the effect of psychological maltreatment. A similar study conducted by Nicholas and Bieber (1996) further supports this connection. These researchers found that increased reporting of psychological maltreatment during childhood was related to elevated scores on the Buss-Durkee Hostility Inventory with a sample of young adults. To examine the impact of psychological maltreatment cross-culturally, a group of European researchers conducted a study examining over 1,000 adolescents from four European countries (Sebre et al., 2004). These researchers found that, across all four countries, there emerged a significant and profound correlation between the experience of childhood psychological maltreatment and current levels of anger.

Though problematic and clinically relevant, the existence of a hostile or angry attitude does not directly indicate the existence of aggression or antisocial behaviors. As such, a number of researchers have examined the possibility that psychological maltreatment may predict the later emergence of these more overt aggressive behaviors. Brown (1984) assessed the experience of psychological maltreatment and the delinquent

behavior of a sample of adolescents. His results revealed that the experience of psychological maltreatment was positively correlated with the commission of criminal behaviors. Another group of researchers found that men who physically assaulted their wives were more likely than a control group to have experienced psychological abuse in childhood (Else, Wonderlich, Beatty, Christie, & Staton, 1993). To investigate the incidence of child psychological maltreatment in the criminal population, Koivisto and Haapasalo (1996) reviewed the records of 52 offenders who received a mental status examination. Results revealed that 52% of the sample reported a history of psychological maltreatment, a higher rate than any other form of child maltreatment. In addition, these authors found individuals diagnosed with psychopathy, using the Psychopathy Checklist, reported higher levels of childhood psychological maltreatment than did the general criminal sample. Similarly, a study of repeat criminal offenders found that as many as 97% reported a history of psychological maltreatment during childhood (Hämäläinen & Haapasalo, 1996).

Suicidality

To examine the impact of childhood psychological maltreatment on future risk of attempting suicide, Bierer et al. (2003) conducted a study with a sample of 182 adult participants diagnosed with a personality disorder. Results of logistic regression analyses revealed that self-reported childhood psychological maltreatment emerged as a significant predictor of suicidal gestures in women and non-lethal self-injurious behaviors in men. Forman, Berk, Henriques, Brown, and Beck (2004) examined a number of variables in an attempt to identify those factors that placed an individual at increased risk of repeated suicide attempts. In their analyses they concluded that individuals who had

attempted suicide more than once were more likely to report childhood emotional abuse than individuals with only one suicide attempt. Thompson, Kaslow, Lane, and Kingree (2000), with a sample of 335 African-American women, found self-reported psychological maltreatment to be a significant risk factor for attempting suicide when compared to non-abused controls. Using correlational and logistic regression analyses, Law, Coll, Tobias, and Hawton (1998) found greater severity of reported childhood emotional abuse was predictive of more self-injurious behavior in adulthood in a sample of 142 women. Other researchers have replicated these findings and concluded psychological maltreatment is a significant predictor of life-time suicide attempts among women (Anderson et al., 2002; Bifulco, Moran, Baines, Bunn, & Stanford, 2002).

In summary, there appears to be substantial evidence that the experience of CPD and/or psychological maltreatment during childhood places one at increased risk for the use of tension-reducing behaviors in adulthood, specifically substance use, aggression, and suicidality. Although this information is descriptive, it fails to offer a theoretical explanation for the way in which these childhood experiences influence the use of these behaviors in adulthood. In addition, the current research examining the relationship between CPD and childhood psychological maltreatment appears to be inconclusive and the available literature suggests that the relationship between these two variables may be complex.

Self-Trauma Theory

There are few proposed theories that attempt to explain the long-term impact of CPD and childhood psychological maltreatment; however, theories have been proposed explaining the long-term impact of childhood trauma, in general, and of CSA in

particular. McCann and Pearlman (1990) offer a theory of the self that is formulated around the experience of trauma and utilizes a constructivist framework. They define the self as "the individual's sense of himself or herself as a knowing, sensing entity, complete with capacities to regulate self-esteem and ego resources to negotiate relationships with others (p.6)." Their Constructivist Self Development (CSD) theory postulates capacities such as the ability to tolerate strong affect and to calm oneself in times of distress are vital for the regulation of self-esteem and the cohesion of a self-identity. Ego resources such as empathy, willpower, and the ability to establish healthy boundaries are crucial for the regulation of interpersonal relatedness. The authors posit traumatic events, especially during childhood, can adversely influence the development of these self-capacities and ego resources and result in difficulties with self-esteem, sense of identity, and interpersonal relationships.

Briere (1996a) has expanded on the CSD theory in what he calls the Self-Trauma Theory. This theory is an attempt to integrate cognitive, behavioral, and psychodynamic theories into an integrative framework that explains one's ability to cope with CSA. The model proposes that emotional reactions to CSA-related stimuli are classically conditioned and that trauma-related memories can trigger the activation of these conditioned emotional responses (Briere, 2002). He argues that three of the capacities or resources proposed by the CSD theory (identity, boundary, and affect regulation) are of particular import when attempting to cope with the emotional distress triggered by implicit or explicit memories. These functions, or self-capacities, when appropriately developed, allow an individual to cope effectively with emotional distress without resorting to maladaptive coping mechanisms or a loss of autonomy. When traumatic

childhood events, such as CSA, result in the altered development of these self-capacities, the adult survivor may not be able to cope internally with stressful situations effectively and is more likely to resort to tension-reducing behaviors such as substance use, aggression, and self-injurious behavior or ideation.

Identity

Briere (1996a) defines identity as a "consistent sense of personal existence, of an internal locus of conscious awareness" (p. 65). An individual with a strong personal identity is able to confront aversive situations with confidence in his or her abilities and is able to organize and think about stressful information without becoming unduly confused or helpless. Individuals with an unstable personal identity may become extremely disorganized and overwhelmed in the face of emotional distress and may subsequently fail to recognize their own needs and goals.

Identity is a theoretical construct originating from a psychodynamic orientation placing great emphasis on the structure and function of the ego. As such, early attempts to measure this self-capacity focused on the use of projective techniques, particularly the Rorschach Inkblot Test. Differing theoretical positions called into question aspects of psychodynamic theory and projective techniques and sought more specific operationalization of this complex construct. Contemporary researchers have focused on various aspects of the self that can be subsumed under the heading of identity as defined by Self-Trauma Theory. For example, clinical researchers frequently measure constructs such as self-esteem, self-worth, and self-depreciation. A number of objective scales have been developed to measure these constructs and are frequently used in the research literature.

Boundary and Interpersonal Relatedness

Boundary, or interpersonal relatedness, refers to an individual's ability to appropriately separate him or herself from others (Briere, 1996a). Individuals with appropriate boundaries are able to recognize that their own needs and perspectives may be different from the needs and perspectives of others. Appropriate boundaries allow one to relate effectively with others and to seek help during stressful situations. Impaired boundaries make it unlikely an individual will sustain meaningful interpersonal relationships. In addition, impaired boundaries may result in a lack of self-assertion and help-seeking behaviors when the person is distressed.

Interpersonal relatedness, as a construct, evolved from the object relations theories, which placed great emphasis on one's interpersonal relationships in the development of personality. Keeping with the psychodynamic tradition of assessment, interpersonal styles were originally assessed using projective techniques. As the criticisms of psychodynamic theory grew, efforts were made to operationalize styles of interpersonal relatedness more concretely and to develop objective measures of these constructs. Current conceptualizations of interpersonal relatedness range from agreeableness and extraversion, as found on the NEO Personality Inventory-Revised (NEO-PI-R), to alienation and social incompetence, as found on the Bell Object Relations and Reality Testing Inventory.

Affect Regulation

The final self-capacity, affect regulation, is the one to which Briere (1996a) gives the most import. He defines affect regulation as "the individual's ability to engage in internal activities that in some way allow him or her to reduce or change painful

emotionality… [and] the individual's relative ability to experience sustained negative affects without having to resort to external activities… or avoidance" (p. 66). In this manner affect regulation is a capacity that both modulates and tolerates affect. Appropriate affect regulation skills then entail the ability to tolerate negative affect and find appropriate ways to self-soothe (Briere, 1992).

Like identity and interpersonal relatedness, affect regulation as a construct has its beginnings in psychodynamic theory, where it was considered a faculty of the ego. Also like identity and interpersonal relatedness, the definition and assessment of affect regulation has changed with time. Current conceptualizations of affect regulation include the presence or absence of emotionality, taken as evidence of dysfunctional affect regulation skills, and the coping skills one employs when faced with stress. A number of objective measures have been developed to assess coping styles and behaviors, as well as the presence of emotional health or illness (e.g., MMPI, Neuroticism scale of the NEO-PI-R).

Development of Self-Capacities

In stating that altered self-capacities in adulthood may result from adverse childhood experiences, it becomes important to provide a theoretical basis for this hypothesis. In developing the Self-Trauma model, Briere (1996b) borrowed heavily from the attachment theory of John Bowlby to explain typical and atypical development of self-capacities. Bowlby (1969/1982) proposed that a child has an innate drive to seek out a parental figure who will provide nurturance and security. Through interactions with this attachment figure, Bowlby (1973) believed, the child would develop schemas or cognitive frameworks for understanding the self, others, and appropriate forms of

interpersonal relationships. These schemas form the foundation of the child's burgeoning personality and dictate the child's course of action in the future.

The appropriate attachment figure serves as a role model and responds appropriately to the needs of the child. If a child has an appropriate attachment figure in his or her life, the child will develop a secure attachment style (Ainsworth, Blehar, Waters, & Wall, 1978). This appropriate caregiver will respond sensitively to the child's needs as well as mirror the child's behavior and emotional responses. As a result, the child will be able to observe how the other person sees him or her and will begin to internalize this image of the self. In the process the child will internalize a schema of other people and the affect regulation strategies that were useful in soothing (Holmes, 2000). The securely attached child will develop a sense of self marked by confidence and esteem, a belief that others are trustworthy, and appropriate mechanisms of emotional regulation (Sroufe, Schork, Frosso, Lawroski, & LaFreniere, 1984).

However, some children do not develop a secure attachment. An emotionally unresponsive or punishing attachment relationship would be expected to result in the child's development of dysfunctional schemas of self and others, and ineffective affect regulation skills. An insecure attachment style known as a *disorganized* or *disoriented* attachment has been found to be the most prevalent style among physically or psychologically abused children (Lyons-Ruth, Connell, Grunebaum, & Botein, 1990; Lyons-Ruth & Jacobvitz, 1999). This attachment style is associated with behavioral disorganization, fear, and anxiety (Teti & Gelfand, 1997) as well as difficulties in social competence (Wartner, Grossman, Fremmer-Bombik, & Suess, 1994) and behavioral problems such as aggression (Solomon, George, & DeJong, 1995).

Bowlby (1973) theorized attachment difficulties in childhood would predispose the individual to psychopathology in later life. Studies have linked a disorganized attachment style to problems in adulthood such as suicidal ideation and attempts (Adam, Pierce, Holland, Desmond, & Gunnar, 1996), anxiety (Goldberg, 2000), and criminal behavior and antisocial personality features (Rosenstein & Horowitz, 1996). Although this research appears to suggest experiences such as physical or psychological maltreatment in childhood may predispose one to adult emotional problems, Holmes (2000) warns that a disorganized attachment style is the precursor to personality development and not a direct causal factor in adult emotional difficulties.

Briere's (1996b) contention is negative childhood experiences result in the altered development of self-capacities in a fashion described by attachment theory. These altered self-capacities result in an adult who is unable to self-soothe and must resort to tension-reducing behaviors such as substance use, aggression, and self-injurious behavior or thoughts to regulate affect. The Self-Trauma model proposes that more profound traumatic experiences (i.e., more chronic, more severe, closer relationship to perpetrator) will result in greater alterations of these self-capacities and, correspondingly, greater reliance on dysfunctional tension-reducing behaviors in adulthood (Briere, 2002).

In summary, Self-Trauma Theory proposes children develop a sense of identity, styles of interpersonal relatedness, and affect regulation skills as a result of their attachment relationships. For the child with a "good enough" attachment relationship, these self-capacities will develop appropriately and the child will possess the means to cope effectively with stressful situations later in life. The child who experiences attachment relationships marked by trauma, especially if the trauma was repeated or

severe, will develop alterations in these self-capacities that will increase the risk of resorting to the use of tension-reducing behaviors when confronted with trauma-related distress in adulthood.

Self-Capacities and Child Sexual Abuse

Self-Trauma Theory was originally developed to explain the long-term impact of CSA. Briere has argued that the experience of CSA results in the altered development of self-capacities (1996a; 1996b; 2002) and that these alterations predispose an individual to resort to the use of dysfunctional tension-reducing behaviors in adulthood to cope with stress. Therefore, the Self-Trauma Theory presents three hypotheses: (1) CSA will be predictive of dysfunctional tension-reducing behaviors in adulthood, (2) CSA will be predictive of the altered development of self-capacities in adulthood, and (3) altered self-capacities will mediate the relationship between CSA and the use of dysfunctional tension-reducing behaviors in adulthood. In addition, Briere (2002) has hypothesized that more profound CSA experiences will result in more profound alterations of self-capacities and, therefore, a greater risk for the use of dysfunctional tension-reducing behaviors. Before examining the utility of Self-Trauma Theory in explaining the long-term impact of CPD and childhood psychological maltreatment, it is informative to examine the validity of this theory for its original stated purpose. A brief review of the literature examining the three stated hypotheses of Self-Trauma Theory as related to CSA is warranted.

CSA and tension-reducing behaviors. Research examining the long-term consequences of CSA has found a marked increase in the risk of substance use among CSA survivors. In a sample of public school students of adolescent age, Harrison et al.

(1997) found CSA was a significant predictor of current alcohol and drug use. They reported many of the adolescents in their survey reported using substances as a means of coping with stress. In another survey of adolescents, Clark et al. (1997) found those individuals with a self-reported history of CSA were at 18 to 21 times greater risk of reporting alcohol abuse.

A study conducted by Briere and Elliott (2003) used a series of multiple regression analyses to examine the impact of CSA on the substance use of adult participants. After controlling for age, sex, ethnicity, socioeconomic status, adult victimization, and CPA, the authors found self-reported history of CSA was a significant predictor of adult substance use. When examining the factors of the abusive experience the authors found that an earlier age of first abusive incident, a later age of last abusive incident, a greater number of incidents, a greater number of perpetrators, closer relationship to a perpetrator, and penetration were all significant predictors of increased substance use in adulthood. As noted earlier, these authors also found CPA was predictive, but age of first physical abuse, age of last physical abuse, and chronicity of physical abuse were not predictive of adult substance use.

Suicidal or self-injurious behavior or thoughts are often noted consequences of CSA (van der Kolk, Perry, & Herman, 1991). Brown et al. (1999) used logistic regression techniques and longitudinal data collection to examine the impact of CSA on suicidal behavior in adulthood. They concluded that the experience of CSA was the most significant predictor of future suicide attempts among a group of factors, including CPA and parental empathy. In addition, they found that survivors of CSA were at a significantly increased risk for repeated suicide attempts when compared with individuals

without a history of CSA. A study examining the effect of self-reported child maltreatment on college students found not only that CSA survivors reported a greater likelihood of suicide attempts, but that CSA survivors reporting penetration displayed a greater number of suicide attempts than individuals reporting more mild forms of CSA (Bryant & Range, 1997). Although Danielson et al. (2005) failed to find penetration to be predictive of suicide attempts, these authors did find that a closer relationship to the perpetrator was associated with increased suicidal thoughts and that females were more likely to endorse current suicidal ideation.

Aggression in adulthood as a long-term consequence of CSA has also received support. A study examining the self-reported childhood trauma histories of 224 adults found that male survivors of CSA were more likely to commit sexual offenses than non-CSA victims (Dietrich, 2004). The analyses conducted by Briere and Elliott (2003) found CSA to be predictive of current reported anger among adults after controlling for a variety of demographic factors. In addition, they found that various factors of the CSA experience, such as penetration, being related to the perpetrator, and a greater number of incidents, were related to increased anger. A comprehensive review of the literature concluded the current research appears to support a link between CSA and antisocial and aggressive behavior in males and females (Trickett & McBride-Chang, 1995).

CSA and altered self-capacities. The research examining the link between CSA and self-capacities has also provided support for Self-Trauma Theory. Studies have documented the difficulty many adult CSA survivors experience in establishing appropriate interpersonal relationships. Kallstrom-Fuqua, Weston, and Marshall (2004) used structural equation modeling to show not only that CSA was related to impaired

social relationships, but that a self-reported sense of powerlessness during the abuse was the most significant factor in predicting social relationship status. Elliott (1994) found adult survivors of CSA were more likely to report difficulty in establishing secure relationships than a non-abused control group. In a meta-analysis incorporating studies meeting strict methodological requirements, Neumann, Houskamp, Pollock, and Briere (1996) found that interpersonal problems in adulthood were strongly associated with the experience of sexual abuse in childhood. One review of the literature concluded that female CSA survivors typically display increased levels of relationship problems in their intimate relationships compared to non-abused adults (DiLillo, 2001). Another literature review examining clinical and community literature found that female CSA survivors typically display greater difficulty establishing significant interpersonal relationships and are at increased risk for marital problems (Rumstein-McKean & Hunsley, 2001).

Research examining identity development provides similar concerns. Using regression analyses, Wilkinson-Ryan and Westen (2000) found that the experience of CSA was significantly related to identity disturbance in a sample of 95 adults receiving outpatient treatment. Another study examined the link between CSA and identity development in a sample of 50 adolescents (McGee, 1996). Results indicated that adolescents who reported experiencing CSA displayed more elevated scores on a measure of identity distortion than did participants not reporting a history of CSA. Higgins and McCabe (2000) found the self-reported experience of CSA was significantly predictive of lower scores on a measure of self-esteem after controlling for gender and family environment. Briere and Elliott (2003) also found the experience of CSA was predictive of impaired self-awareness after controlling for demographic variables. In

addition, these researchers found more severe forms of CSA were predictive of greater impairment in self-awareness. Identity problems with this population have also been noted in the form of an inability to maintain a sense of self-worth (Deiter, Nicholls, & Pearlman, 2000).

Research has also linked CSA to affect dysregulation in survivors of CSA. For example, Greenwald, Leitenberg, Cado, and Tarran (1990) found adult survivors of self-reported CSA manifest higher levels of emotional lability than a control group of non-abused adults. This finding has been replicated elsewhere (Allen, 2005). In another study researchers were able to link the self-reported experience of CSA to emotional suppression in adulthood (Leitenberg, Greenwald, & Cado, 1992). Using the Social Cognition and Object Relations Scale scoring system with the Thematic Apperception Test, Swartz (2002) found that an earlier age of the first incident of CSA was significantly predictive of greater disturbances on affect regulation scales. In a review of the literature Marx, Heidt, and Gold (2005) concluded women with a self-reported history of CSA were more likely to resort to emotional suppression and avoidant coping skills than women without a history of CSA.

Self-capacities as mediators. The final hypothesis of the Self-Trauma Model, that self-capacities should mediate the relationship between CSA and tension-reducing behaviors, has received less attention. Research with a general clinical adult population has shown impaired self-capacities are associated with the presence of various types of substance abuse (Peters, 1988; Stein, Golding, Siegel, Burnam, & Sorenson, 1988), and self-mutilation and suicidality (Briere & Gil, 1998; Zlotnik, Donaldson, Spirito, & Pearlstein, 1997). One study by Dieter, Nicholls, and Pearlman (2000) directly examined

the mediating hypothesis of the Self-Trauma Model. The researchers administered a questionnaire assessing each of the three self-capacities as well as measures asking about CSA and suicidal behavior to 233 adults. The results indicated individuals reporting CSA displayed greater impairment in self-capacities and that greater impairment in self-capacities was predictive of more self-injurious behavior. These authors suggest self-injurious or suicidal behavior may serve as an affect regulatory behavior in individuals with altered self-capacities. Another study found the link between CSA and adult suicide attempts was mediated by the experience of social isolation in a sample of low-SES, African-American women (Twomey, Kaslow, & Croft, 2000).

Self-Capacities and CPD

Although these studies suggest CSA may result in the altered development of self-capacities and the subsequent emergence of tension-reducing behaviors, little research has examined the utility of the Self-Trauma model in explaining the link between CPD and these tension-reducing behaviors. Evidence does exist, however, that CPD and the more severe form of physical abuse, in particular, may result in the alteration of self-capacities. For instance, a study by Larzelere, Klein, Schumm, and Alibrando (1989) found undergraduates who reported a childhood history of physical discipline, such as spanking, displayed lower self-esteem than individuals without a history of corporal punishment.

The substantial literature examining CPA has more thoroughly examined alterations in the appropriate development of self-capacities. With respect to identity formation, studies have found physically abused children to display lower self-esteem (Elliott, Cunningham, Linder, Colangelo, & Gross, 2005; Ito, 1995) and impairment in

self-image (Talbott, 2001) when compared to non-abused children. Using regression analyses, Briere and Elliott (2003) found self-reported CPA was a significant predictor of impaired self-awareness even after controlling for demographic factors and CSA. Furthermore, these authors found the number of physical abuse incidents significantly predicted the scores on a self-awareness measure with more incidents predictive of greater impairment. Other studies examining the identity formation of adult survivors of childhood physical abuse have found elevated levels of identity impairment with this population (Fox & Gilbert, 1994; Mullen, Martin, Anderson, & Romans, 1996).

One group of researchers used structural equation modeling to evaluate the influence of CPA on adult interpersonal relationships (Killpack, Poppleton, Layne, Cloitre, Gordon, & Rosenberg, 2005). The resulting model demonstrated self-reported CPA was predictive of more interpersonal problems, such as lack of responsibility and submissiveness, as well as a weaker social support network. In addition, lower levels of trust and difficulties in romantic relationships (Smith, 1997), and impairments in interpersonal perceptions and skills (Elliott et al., 2005; Mullen et al., 1996; Talbott, 2001) have been noted in the presentations of adult survivors of CPA.

The third self-capacity, affect regulation, appears to show alterations in victims of physical abuse as well. Shields and Cicchetti (1998) found physically abused children were more likely to show emotional dysregulation than control children as evidenced by emotional lability, lack of emotional understanding, and emotional intensity. A similar study found physically abused children, as verified by protective services reports, tended to display more irritability and passivity than non-abused peers (Finzi, Har-Even, & Weizman, 2003). Most of these studies have been descriptive in nature and few studies

have examined the role of these self-capacities in mediating the relationship between CPD and the use of tension-reducing behaviors in adulthood.

Self-Capacities and Childhood Psychological Maltreatment

Similar to the case with CPD, research appears to point to the possibility that the experience of childhood psychological maltreatment may result in the altered development of self-capacities. In examining the identity formation of young adult women who experienced psychological maltreatment during childhood, Smith (1997) found parental emotional abuse was positively correlated with decreased self-esteem. Similar results were found by others in a college sample (Briere & Runtz, 1990) and in a community sample (Mullen et al., 1996). Higgins and McCabe (2000) used retrospective self-report methods and regression analyses to conclude childhood psychological maltreatment was a significant predictor of low self-esteem in a community sample of 175 participants. More interesting is the fact these authors found this relationship after statistically controlling for the effects of gender, socioeconomic status, and sexual abuse history, among other factors. Jelley (2003) used a sample of college undergraduates to examine the mediational effects of self-esteem. Using regression analyses he concluded current self-esteem mediated the relationship between self-reported childhood psychological maltreatment and scores on a measure of drug abuse.

Rich, Gidycz, Warkentin, Loh, and Weiland (2005) used path analyses to evaluate the impact of parental verbal abuse on the social outcomes of adolescents. They found maternal and paternal verbal abuse were significant factors in predicting the perpetration of dating violence. Mullen et al. (1996) examined data collected from a group of 497 women in a community sample. Results indicated women reporting a history of

childhood psychological maltreatment reported significantly more difficulties in their interpersonal relationships. Kimball (2004) used a sample of college students to evaluate the impact of childhood psychological maltreatment on affect regulation. Results showed that participants endorsing a history of childhood psychological maltreatment typically displayed poorer affect regulation. Research examining the long-term consequences of childhood psychological maltreatment is still in its infancy and studies have yet to investigate possible mediating factors thoroughly.

CHAPTER 2: SUMMARY AND HYPOTHESES

An abundance of research has demonstrated a clear connection between the experience of CPD and childhood psychological maltreatment and the utilization of tension-reducing behaviors in adulthood. Specifically, the experience of CPD and/or childhood psychological maltreatment appears to increase the likelihood of substance use, aggressiveness, and suicidal ideation or attempts in adulthood. Few researchers have sought to explain the causal mechanisms through which CPD and psychological maltreatment may result in the use of these tension-reducing behaviors in adulthood.

Research has examined a number of possible moderating demographic variables such as socioeconomic status, gender, and ethnicity as well as characteristics of the maltreating experiences such as chronicity, severity, and relationship to the perpetrator. Investigations of these moderating variables have produced equivocal results; however, empirical studies have continued to find links between CPD, childhood psychological maltreatment, and tension-reducing behaviors in adulthood after controlling for the various demographic variables. A significant confound in the study of these childhood experiences is the co-occurrence of CPD and childhood psychological maltreatment, as well as the high co-occurrence of CSA with these other forms of maltreatment. Although more recent studies have begun to control for the impact of these other forms of experience, a large portion of the research in this area has failed to control for this possible confound.

Self-Trauma Theory offers a framework that may be applicable to understanding the long-term impact of CPD and childhood psychological maltreatment. Self-Trauma Theory was originally developed to explain the long-term impact of childhood sexual

abuse. According to the theory, the traumatic event of sexual abuse in childhood arrests the appropriate development of self-capacities (identity, interpersonal relatedness, affect regulation) that allow for the ability to tolerate, modulate, and respond to stressful situations. The alteration in these self-capacities results in adults who are unable to cope with stress effectively and resort to using dysfunctional tension-reducing behaviors as means of coping with stressful situations. Research examining the impact of CPD and childhood psychological maltreatment on the development of self-capacities has shown these childhood experiences may also result in an impaired sense of identity, dysfunctional interpersonal relationships, and affect dysregulation. This suggests the theoretical explanation proposed by Self-Trauma Theory in explaining the impact of CSA on adult functioning, that altered self-capacities yield the use of dysfunctional tension-reducing behaviors, may also be applicable for understanding the long-term impact of CPD and psychological maltreatment. However, no identifiable studies have directly examined the application of Self-Trauma Theory to the understanding of long-term consequences of CPD and childhood psychological maltreatment. This investigation will explore that application.

The use of the Self-Trauma Theory to explain the connection between CPD and psychological maltreatment and the use of dysfunctional tension-reducing behaviors in adulthood yields three testable hypotheses. First, in keeping with previous research, the experience of CPD and childhood psychological maltreatment will significantly predict the use of dysfunctional tension-reducing behaviors in adulthood. This first analysis is examined by use of a multiple regression analysis that tests the predictive ability of CPD and childhood psychological maltreatment on each of the tension-reducing behaviors

under study. Second, also in keeping with previous research, is that the experience of CPD and childhood psychological maltreatment will significantly predict alterations in adult self-capacities. Again, a multiple regression analysis tests this second hypothesis by examining the ability of the maltreatment variables to predict self-capacity measures. The final hypothesis is that altered self-capacities will mediate the relation between the experience of CPD and childhood psychological maltreatment and the use of dysfunctional tension-reducing behaviors in adulthood. This third hypothesis has yet to be tested in the empirical literature and is the primary hypothesis of the current investigation. This last hypothesis is tested here using a hierarchical multiple regression analysis examining the ability of maltreatment variables to predict tension-reducing behaviors after controlling for the self-capacity variables. It should be noted, however, that possible confounding variables need to be controlled if the results are to support the stated hypotheses convincingly. As such, this study will control for the effects of demographic variables to the extent possible with the collected data. Specific variables assessed include age, ethnicity, and sex.

CHAPTER 3: METHODS

Participants

Participants in this study were 268 undergraduate students enrolled in an introductory psychology course at a medium-sized state university in the eastern United States. The students participated in the study to fulfill the research participation requirement for the course. Participants not wishing to participate were offered an alternative assignment. All participants were at least 18 years of age. Participants were randomly selected from the Department of Psychology's research subject pool.

Measures

Comprehensive Child Maltreatment Scale

The Comprehensive Child Maltreatment Scale (CCMS; see Appendix A) is a paper-and-pencil, self-report measure of an adult's perception of his or her experience of childhood maltreatment (Higgins & McCabe, 2001). It is designed to be administered individually to protect the confidentiality and privacy of the respondent. The measure consists of 21 items and asks the respondent to answer how frequently he or she experienced each potentially maltreating situation before the age of 13. The respondent is asked to report the frequency with which his/her primary maternal figure, primary paternal figure, or another older adolescent or adult performed each action using a Likert-type scale ranging from 0 (never) to 4 (very frequently) for the first 11 items (i.e., physically punished for wrongdoing, such as smacking, grabbing, shaking) and 0 (never) to 5 (more than 20 times) for the last 10 items (i.e., touched your penis, vagina, or breast). Each item loads on only one of five scales: Physical Abuse, Witnessing Family Violence, Psychological Maltreatment, Neglect, and Sexual Abuse. The score for each scale is

determined by summing the responses to each item on the scale; higher scores indicate a greater frequency of perceived maltreatment.

Higgins and McCabe (2001) examined the psychometric characteristics of the CCMS with a community sample of 179 adults. Internal consistency for the entire CCMS scale is excellent (Cronbach's alpha = .92). Internal consistency estimates for the individual scales range from a low of .76 (Physical Abuse and Neglect) to a high of .88 (Sexual Abuse). Test-retest reliability for the entire CCMS was also good (r = .92). Test-retest reliability for the individual scales range from a low of .62 (Neglect) to .95 (Sexual Abuse). The authors of the scale examined concurrent criterion-related validity by correlating the CCMS scales with the scales from the Child Abuse and Trauma (CAT) scale. Results showed that the CAT Neglect/Negative Home Atmosphere scale strongly correlated with the CCMS Neglect scale (r = .77, p < .001) and Psychological Maltreatment Scale (r = .71, p < .001), and moderately correlated with the Physical Abuse and Sexual Abuse scales. The CAT Sexual Abuse scale strongly correlated with the CCMS Sexual Abuse scale (r = .87, p < .001). The CAT total score was also strongly correlated with the CCMS total score (r = .86, p < .001).

Inventory of Altered Self-Capacities

The Inventory of Altered Self-Capacities (IASC) is a standardized self-report measure that evaluates the current functioning of one's self-capacities (Briere & Runtz, 2002; the IASC is a copyrighted instrument and, therefore, a copy is not provided). It is composed of 63 items asking the respondent to describe how frequently the identified situation or problem occurs to him or her. The items are designed to evaluate seven areas of possible disruption in self-capacities: Interpersonal Conflicts, Idealization-

Disillusionment, Abandonment Concerns, Identity Impairment, Susceptibility to Influence, Affect Dysregulation, and Tension Reduction Activities. Respondents rate each item on a Likert-type scale ranging from 1 (has never happened in the last 6 months) to 5 (has happened very often in the last 6 months). Scores are summed for each scale with greater elevations signaling greater impairment. The current study proposes to use the Interpersonal Conflicts (IC) scale to measure dysfunctional interpersonal relatedness, the Identity Impairment (II) scale to measure identity disturbance, and the Affect Dysregulation (AD) scale to measure problems with affect regulation. Items from these scales ask the respondent to report how frequently various problems are experienced such as, "Problems in your relationships with people" (IC), "Feeling like you don't know yourself very well" (II), and "Not being able to calm yourself down" (AD).

Briere and Runtz (2002) standardized the IASC on a nationally representative sample of 620 participants and reported the derived psychometrics. The authors also conducted a second study obtaining psychometric and standardization data from a sample of university undergraduate students (n = 290). As this study employs the use of undergraduate students, the results for both of these samples will be reported. Internal consistency for the three subscales of interest was strong: Interpersonal Conflicts = .90 (university sample α = .88), Identity Impairment = .93 (university sample α = .91), and Affect Dysregulation = .92 (university sample α = .93). Test-retest data were not reported. To assess convergent and discriminant validity the various scales of the IASC were correlated with the Borderline Features, Antisocial Features, and Mania scales of the Personality Assessment Inventory using the standardization sample. As predicted, results revealed that the IC, II, and AD scales were significantly positively correlated

with the Borderline Features scale and that the AD scale significantly correlated with the Antisocial Features Scale. Also as predicted, none of the IASC scales significantly correlated with the Mania Scale. To further evaluate the construct validity of the IASC, the authors examined the correlations of the scales with scores on the Multiscore Depression Inventory (MDI), the Suicidality scale of the Detailed Assessment of Posttraumatic Stress (DAPS), and the Substance Abuse scale of the DAPS. Results showed that the IC, II, and AD were all significantly correlated with the score on the MDI, and the Suicide and Substance Abuse Scales of the DAPS. Multiple regression analyses showed that the AD scale was the best predictor of scores on all three of these criterion measures.

Personality Assessment Inventory

The Personality Assessment Inventory (PAI) is a standardized self-report measure of current emotional adjustment (Morey, 1991; the PAI is a copyrighted instrument and, therefore, a copy is not provided). The PAI contains 344 items asking about various psychological symptoms, and the respondent is asked to report how true each statement is for him or her by rating the item on a 4-point, Likert-type scale ranging from False, not at all true to Very true. Scores are summed with higher scores indicating a greater level of disturbance. The items yield 22 scales: 4 validity scales, 11 clinical scales, 5 treatment scales, and 2 interpersonal scales. Each item loads on only one scale. This study proposes to utilize the Alcohol Problems (ALC), Drug Problems (DRG), Aggression (AGG), and Suicidal Ideation (SUI) scales to assess dysfunctional tension-reducing behaviors. Example items from these scales include "I have trouble controlling my use of alcohol"

(ALC), “I never use illegal drugs” (DRG), “I’ve made plans about how to kill myself” (SUI), and “Sometimes I smash things when I’m upset.” (AGG).

Morey (1991) reports psychometric data for the PAI based on a nationally representative sample (n = 1,000) and separate data derived from a university sample (n = 1,051). Results from both samples will be reported. The four PAI scales of interest display acceptable internal consistency: ALC = .84 (university sample α = .83), DRG = .74 (university sample α = .66), AGG = .85 (university sample α = .89), and SUI = .85 (university sample α = .87). Test-retest reliability for these scales range from a low of .66 (DRG in the university sample) to a high of .94 (ALC in the nationally representative sample). Validity for the DRG and ALC scores was examined by comparing these scales to scores on the Michigan Alcoholism Screening Test (MAST) and the Drug Abuse Screening Test (DAST). Scores on the ALC scale were significantly correlated with scores on the MAST (r = .89) and scores on the DRG were significantly correlated with scores on the DAST (r = .69). The AGG scale was found to have the strongest correlation with the total score of the State-Trait Anger Expression Inventory (r = .75) and the NEO-PI Hostility facet (r = .83). The SUI scale most strongly correlated with the Beck Hopelessness Scale (r = .64) and the Suicidal Ideation subscale of the Suicide Probability Scale (r = .56).

Procedure

Participants were randomly selected from the Department of Psychology’s research subject pool and scheduled for a group administration session. Participants were asked to sign in on an unlabeled sheet of paper to verify their participation in the study for the purposes of receiving credit toward the research participation requirement.

Participants were then handed a folder containing each of the three assessment instruments, a demographics questionnaire (Appendix B), and an informed consent form (Appendix C). The assessment instruments and demographics questionnaire were marked with a common 3-digit identification number. The folders were distributed randomly to prevent the identification numbers from being associated with the order in which the participants arrived for the administration session. Participants were asked not to open the folders until instructed.

After all participants arrived, the researcher reviewed the process of the administration and stressed the confidentiality of obtained material. The researcher then reviewed the informed consent form and asked participants to sign the form before completing any of the assessment instruments. Participants were informed that they may discontinue their participation at any time without penalty. Participants were then instructed to complete the assessment instruments in the order presented in the folder. The assessment instruments were presented in the following order: demographic questionnaire, PAI, IASC, CCMS. The instruments were presented in this order to prevent the recall of unpleasant childhood experiences from altering the manner in which the participant responded to questions about current psychological and emotional functioning. After completing the questionnaires, participants were asked to return the folder containing the three assessment instruments and the demographics questionnaire. As the participants exited the room, they were asked to return the informed consent form to a separate labeled box and to collect a debriefing form (Appendix D) and a list of available mental health resources where the participant may obtain services if he or she so desired (Appendix E). The debriefing form provided a rationale for the study as well

as the researcher's contact information if he or she wished to learn the results of the study. The completed assessment instruments and demographics questionnaires were and are kept in a separate file from the informed consent forms and all materials are kept in a locked cabinet.

Analyses

Preliminary analysis of variance (ANOVA) and zero-order correlations were calculated between each of the IASC scales, the PAI scales, the CCMS scales, and demographic variables. This was performed prior to the regression analyses to determine those variables uncorrelated with the criterion and mediator measures. Those variables not showing a significant correlation with any criterion or mediator variable (PAI and IASC scales, respectively) were not included in the regression analyses in an attempt to increase power and reduce test-wise alpha inflation. All variables showing significant correlations with at least one criterion or mediator variable were included in the appropriate regression analyses.

Baron and Kenny (1986) defined three criteria that must be met for mediation. Analyzing the data according to this strategy allows for the testing of each of the three stated hypotheses. The first criterion is the predictor variable(s) must significantly predict scores on both the criterion and mediator variables. To test this criterion, the indicated child maltreatment scales from the CCMS were entered simultaneously in a regression equation to determine their ability to predict the four criterion measure PAI scores (AGG, DRG, ALC, SUI). This necessitates that the analyses be run separately for each of the four PAI scales. These analyses allow for testing the first hypothesis that child maltreatment variables significantly predict the dysfunctional tension-reducing behaviors.

Baron and Kenny's second criterion is the hypothesized mediator variable(s) significantly predicts scores on the criterion variable(s). To examine this criterion, similar analyses were run examining the ability of the CCMS variables to predict scores on each of the IASC scores (IC, II, AD). Again, this necessitates that a separate analysis be run for each IASC scale. This step tests the second stated hypothesis that childhood psychological maltreatment and CPA predicts detrimental alterations in self-capacities.

Finally, Baron and Kenny's third criterion of mediation is the relationship between the predictor and criterion variables weakens after controlling for the mediator variable(s). A final series of analyses were run to examine the mediational hypothesis. This final analysis utilized a hierarchical regression model where the IASC scales were entered in the first step and the CCMS scales were entered in the second step using the PAI scales as the criterion measures. This analysis was run two separate times, each time using a different PAI scale as the criterion measure (the ALC and DRG scales were not analyzed in this manner as explained below). This final hypothesis is that the ability of childhood psychological maltreatment and CPA to predict dysfunctional tension-reducing behaviors in adulthood is mediated by the alteration in self-capacities created by the experience of child maltreatment. To control for possible confounds, all appropriate covariates, as determined by the results of the ANOVAs and zero-order correlations (i.e., demographic variables), were entered in the first step of indicated regression analyses. Because of the relatively large number of analyses, the minimal alpha-level for statistical significance was set at $p < .01$ for correlational analyses. Additional analyses were performed to examine the influence of individual forms of maltreatment (as opposed to scales) on the mediator and criterion variables.

CHAPTER 4: RESULTS

Demographic Analyses

A total of 268 individuals participated in this study. Of these, the data from 32 individuals were excluded from analyses because they did not complete all of the questionnaires or their profiles were invalid due to disqualifying scores on the Positive Impression (> 22), Negative Impression (> 12), and/or Infrequency (> 8) scales of the PAI. The remaining sample of 236 was predominantly female (n = 136, 57.6%) and of European-American ethnicity (n = 218, 92.4%). The mean age of the sample was approximately 19 years (M = 19.19, SD = 1.95).

The obtained demographic characteristics of the sample were problematic in attempting to perform statistical analyses. Specifically, the overwhelming European-American ethnic composition precluded any statistical analysis attempting to examine ethnic differences. In addition, the lack of variability in participant age negated the use of correlational techniques. Alternatively, the age factor was parceled into four distinct categories based on the age of the participant (18-years, 19-years, 20-years, and 21-years and over). This approach also was problematic owing to the grossly unequal sample sizes of these distinct categories (a low of 26 participants in the 20-years category and a high of 92 participants in the 18-years category). The results of demographic analyses using this categorized approach are included here for informational purposes only as the variable of age was not included as a covariate in later regression analyses due to these limitations.

A series of ANOVAs were conducted to examine differences in IASC and PAI scores based on age and sex. First, scores from the three IASC scales were used as the

dependent variables in ANOVAs examining the variables of age and sex. No significant results were found, suggesting that age and sex were not predictive of scores on these scales and their inclusion in later analyses is unwarranted. Descriptive statistics and results of these analyses can be found in Table 1. Second, scores from the four PAI scales were used as the dependent variables in a series of ANOVAs examining the impact of age and sex on these measures. Sex emerged as a significant predictor of the ALC scale ($F = 7.56$, $p < .01$) with males ($M = 8.96$, $SD = 7.62$) reporting more alcohol problems on average than females ($M = 6.21$, $SD = 5.73$). In addition, differences were noted on the ALC scale based on the variable of age group ($F = 4.01$, $p < .01$); however, post-hoc analyses failed to show significant differences between any two age groups and no trend was apparent as the 21 and over group scored the highest ($M = 8.87$, $SD = 7.78$) and the 20-year-old group scored the lowest ($M = 5.35$, $SD = 4.94$). A significant sex by age group interaction ($F = 2.92$, $p < .05$) was also noted for the ALC scale. Although the interaction effect is significant, it appears that this result may be most attributable to the large disparity between male ($M = 12.45$, $SD = 8.64$) and female ($M = 6.18$, $SD = 6.1$) reports of alcohol problems in the 19-year-old age group, while the gender disparity at the other age groups is much less. Descriptive statistics and the results of these statistical analyses appear in Table 2. These results suggest that the sex variable should be entered as a covariate before the performance of all regression analyses pertaining to the ALC scale only.

Zero-Order Correlations

Zero-order correlations were obtained between all maltreatment, self-capacity, and tension-reducing behavior variables. All calculated correlations are presented in

Table 3. As expected, the intercorrelations among the maltreatment variables were significant. The strongest relationship was found between the Physical Abuse and Emotional Abuse scales ($r = .64$, $p < .01$), while the weakest relationship was found between the Sexual Abuse and Neglect Scales ($r = .07$, *ns*).

The Physical Abuse and Emotional Abuse scales of the CCMS were significantly correlated with each of the IC, II, and AD scales of the IASC, as well as with the AGG and SUI scales of the PAI. The Neglect scale of the CCMS was also significantly correlated with each of the IASC scales; however, it was not correlated with any of the tension-reducing behavior scales of the PAI. The Witnessing Family Violence scale of the CCMS correlated significantly with the IC and AD scales of the IASC and the SUI scales of the PAI. The Sexual Abuse scale of the CCMS did not correlate significantly with any of the self-capacity or tension-reducing behavior measures. Surprisingly, none of the child maltreatment variables significantly correlated with the ALC or DRG scales of the PAI.

The correlations computed between the self-capacity and tension-reducing behavior measures offer a preliminary analysis of the mediating hypothesis. The IC scale of the IASC significantly predicted scores on all four of the PAI scales under examination (ALC, DRG, AGG, and SUI). The II scale of the IASC correlated significantly with the ALC and SUI scales of the PAI, while the AD scale of the IASC significantly predicted scores on the AGG and SUI scales of the PAI. These results suggest that the self-capacity measures may mediate the link between the maltreatment and tension-reducing behavior variables and that further analysis using regression techniques is warranted.

Regression Analyses

First Criterion: Testing Significance of Predictor Variables

The first criterion of mediation is that the predictor variables significantly predict the scores of the outcome and mediator variables. This first set of analyses examines the ability of the significantly correlated maltreatment variables (predictors) to predict scores on the self-capacity (mediator) and tension-reducing behavior (outcome) variables. Given that none of the CCMS scales significantly correlated with the DRG and ALC scales of the PAI, no regression analyses involving these variables is required at this point. The regression equation predicting scores on the AGG scale of the PAI included the Physical Abuse and Emotional Abuse scales of the CCMS. The resulting equation significantly predicted scores on the AGG scale ($R = .32$, $R^2 = .10$, $F(2, 233) = 12.95$, $p < .001$; see Table 4) with the Emotional Abuse scale emerging as a significant independent predictor (standardized $\beta = .29$, $t = 3.64$, $p < .001$). An additional regression analysis was conducted to examine which forms of emotional abuse were most predictive of scores on the AGG scale using the three items from the Emotional Abuse scale as the predictor variables. The predictive power of this equation was slightly greater than the original ($R = .34$, $R^2 = .12$, $F(3, 232) = 10.03$, $p < .001$) with the "yelled at you" (stand. $\beta = .26$, $t = 3.36$, $p < .01$) and "provoked, made you afraid, used cruelty" (stand. $\beta = .16$, $t = 2.07$, $p < .05$) items emerging as significant independent predictors. The results of this analysis can be found in Table 5.

The equation predicting scores on the SUI scale of the PAI included the following maltreatment variables: Physical Abuse scale, Emotional Abuse scale, and the Witnessing Family Violence scale. The resulting equation significantly predicted score on the SUI

scale (R = .30, R^2 = .09, F = 7.84 (3, 232), p < .001; see Table 4). The Physical Abuse scale was the only variable that significantly predicted scores on the SUI scale independently (stand. β = .18, t = 2.16, p < .05). Further analysis using only the three physical abuse items as predictors of scores on the SUI scale resulted in an equation with similar predictive power as the original (R = .28, R^2 = .08, F(3, 232) = 6.79, p < .001). In this second equation, the "physically punished for wrongdoing" item was the only significant independent predictor (stand. β = .16, t = 2.07, p < .05). The results of this analysis are presented in Table 5.

Next, the ability of the maltreatment variables to predict scores on the mediating self-capacity variables was examined. The regression equation predicting scores on the IC scale of the IASC included the Physical Abuse, Emotional Abuse, Witnessing Family Violence, and Neglect scales of the CCMS (see Table 4). The resulting equation significantly predicted IC scores (R = .44, R^2 = .19, F(4, 231) = 13.46, p < .001) with the Physical Abuse (stand. β = .20, t = 2.44, p < .05) and Emotional Abuse (stand. β = .36, t = 4.26, p < .001) scales emerging as independent predictors. An additional analysis using the individual items from the Physical Abuse and Emotional Abuse scales as predictors of scores on the IC scale was conducted (see Table 5). The predictive ability of this equation (R = .45, R^2 = .20, F(6, 229) = 9.46, p < .001) was similar to the original. The "yelled at you" (stand. β = .22, t = 2.7, p < .01) and "provoked, made you afraid, used cruelty" (stand. β = .21, t = 2.67, p < .01) items of the Emotional Abuse scale were the only significant independent predictors in this equation.

The variables included in the regression equation predicting scores on the II scale of the IASC were the Physical Abuse, Emotional Abuse, and Neglect scales of the

CCMS. The resulting equation significantly predicted scores on the II scale (R = .28, R^2 = .08, $F(3, 232) = 6.75$, $p < .001$; see Table 4) with the Neglect scale emerging as a significant independent predictor (stand. β = .16, t = 2.16, $p < .05$). An additional analysis using the items from the Neglect scale as predictors produced an equation with greater predictive ability than the original (R = .36, R^2 = .13, $F(3, 232) = 11.51$, $p < .001$). In this equation, the items "shut you in a room for an extended period of time" (stand. β = -.15, t = 2.00, $p < .05$) and "ignored your requests for attention" (stand. β = .40, t = 5.24, $p <$ .001) were significant independent predictors of scores on the II scale. These results can be found in Table 5.

The regression equation predicting scores on the AD scale of the IASC included the Physical Abuse, Emotional Abuse, Witnessing Family Violence, and Neglect Scales of the CCMS (see Table 4). This equation significantly predicted scores on the AD scale (R = .38, R^2 = .15, $F(4, 231) = 9.87$, $p < .001$) and the Emotional Abuse scale was the only variable to emerge as a significant independent predictor (stand. β = .34, t = 3.95, $p < .001$). Another analysis conducted using only the items from the Emotional Abuse scale as the predictors resulted in a similar equation as the original (R = .38, R^2 = .14, $F(3, 232) = 13.01$, $p < .001$; see Table 5). The items "yelled at you" (stand. β = .19, t = 2.46, $p <$ .05) and "provoked, made you afraid, used cruelty" (stand. β = .20, t = 2.74, $p < .01$) were significant independent predictors of scores on the AD scale. The results of these regression equations demonstrate that the first criterion for mediation is met; maltreatment variables significantly predicted scores on the outcome variables of aggression and suicidality as well as scores on the mediator variables of interpersonal conflicts, identity impairment, and affect dysregulation.

Second Criterion: Testing Significance of Mediator Variables

The second criterion of mediation is that the mediating variables significantly predict scores on the outcome measures. This series of regression analyses examines the ability of the self-capacity measures to predict scores on the tension-reducing behavior measures. The regression equation predicting scores on the ALC scale of the PAI included the II and IC scales of the IASC as the predictors as well as the sex demographic variable as a covariate (see Table 6). The resulting equation was significant ($R = .32$, $R^2 = .10$, $F(3, 232) = 8.92$, $p < .001$) with the addition of the IC and II variables significantly improving the predictive ability of the equation (R^2 change = .06, F change = 8.01, $p < .001$). Of the two self-capacity measures, only the II scale emerged as a significant independent predictor of scores on the ALC scale (stand. $\beta = .18$, $t = 2.45$, $p < .05$). Only one variable, the IC scale of the IASC, was significantly correlated with the DRG scale of the PAI ($r = .17$, $r^2 = .03$, $t = 2.69$, $p < .01$); therefore, a multiple regression analysis is not warranted.

The self-capacity variables included in the regression analysis predicting scores on the AGG scale of the PAI were the IC and AD scales of the IASC. The results of this analysis were significant ($R = .48$, $R^2 = .23$, $F(2, 233) = 34.7$, $p < .001$; see Table 6) with the IC scale emerging as the only significant independent predictor of scores on the AGG scale (stand. $\beta = .35$, $t = 4.14$, $p < .001$). The regression equation predicting scores on the SUI scale of the PAI included all three of the self-capacity variables. The resulting equation was significant ($R = .59$, $R^2 = .34$, $F(3, 232) = 40.4$, $p < .001$; see Table 6). The II (stand. $\beta = .22$, $t = 3.14$, $p < .01$) and AD (stand. $\beta = .44$, $t = 5.0$, $p < .001$) scales of the IASC emerged as significant independent predictors of scores on the SUI scale. The

results of these regression analyses provide evidence that the second criterion of mediation is met. Specifically, one or more of the self-capacity variables significantly predicts each of the four tension-reducing behavior variables.

Criterion Three: Testing Mediation

Given that the first two mediation criteria are met, the final criterion tested explores whether the mediating variables diminish the relationship between the predictor and outcome variables. Because none of the maltreatment variables significantly predicted the ALC or DRG scales of the PAI, multiple regressions analyses using these variables as the outcomes were not performed. Two sets of analyses are performed for each of the remaining PAI scales (AGG and SUI): the first set of analyses will examine the ability of the self-capacity variables to mediate the relationship between the maltreatment scales and the PAI scales and the second set of analyses will examine the mediation of the relationship between the individual maltreatment items and the PAI scales.

The hierarchical regression analysis examining the mediation of the relationship between the maltreatment variables and the AGG scale of the PAI included the entry of the IC and AD scales of the IASC in step 1 and the entry of the Physical Abuse and Emotional Abuse scales of the CCMS in step 2 (see Table 7). Results of this analysis revealed that the addition of the maltreatment variables in step 2 did not significantly increase the predictive ability of the equation beyond that of the self-capacity variables entered in step 1 (R^2 change = .02, F change = 2.44, *ns*). The Emotional Abuse scale remained a significant independent predictor of AGG scores (stand. β = .15, t = 2.0, $p <$ .05), although the predictive power of this scale was greatly diminished. This analysis

suggests that the combined impact of physical and emotional maltreatment on adult aggression is fully mediated by the detrimental alteration of the self-capacities of interpersonal relatedness and affect regulation and that the impact of emotional maltreatment alone is partially mediated.

A second hierarchical regression analysis was conducted to examine the possible mediation of the specific forms of emotional abuse previously identified as predicting scores on the AGG scale. As before, the maltreatment scales in this analysis were replaced with the individual items from the Emotional Abuse scale of the CCMS. Results of this analysis showed that the addition of the maltreatment variables did not significantly improve the ability of the equation to predict scores on the AGG scale (R^2 change = .02, F change = 2.33, *ns*; see Table 8); however, the individual item of "yelled at you" remained a significant, albeit weaker, independent predictor (stand. $\beta = .16$, $t = 2.14$, $p < .05$). These findings demonstrate that, although the summary effects of emotional maltreatment variables are fully mediated by the self-capacities of interpersonal relatedness and affect regulation, the specific form of emotional maltreatment exemplified by the item "yelled at you" may continue to exert a significant impact on adult aggression.

The hierarchical regression equation utilizing the SUI scale of the PAI as the outcome measure included all three self-capacity scales as the mediating variables (step 1) and the Physical Abuse, Emotional Abuse, and Witnessing Family Violence Scales of the CCMS as the predictor variables (step 2). Results of this analysis revealed that the inclusion of the maltreatment variables did not significantly increase the predictive ability of the equation (R^2 change = .02, F change = 1.97, *ns*; see Table 9) and the Physical

Abuse scale no longer emerged as a significant independent predictor (stand. $\beta = .13$, $t = 1.74$, *ns*). These results suggest that the self-capacity variables fully mediated the relationship between the maltreatment variables and the SUI scale as well as the ability of the Physical Abuse scale to independently predict scores on the SUI scale.

The final regression analysis examined the role of the self-capacity variables in mediating the relationship of the individual items from the Physical Abuse scale of the CCMS and the SUI scale of the PAI (see Table 10). Again, results show that the maltreatment variables did not significantly contribute to the prediction of scores on the SUI scale after controlling for the mediating variables (R^2 change = .02, F change = 2.41, *ns*). In addition, the "physically punished for wrongdoing" item was no longer an independent predictor of scores on the SUI scale (stand. $\beta = .07$, $t = 1.0$, *ns*). These results suggest that the self-capacity variables fully mediated the impact of the physical maltreatment variables on suicidal ideation and behavior as well as fully mediated the independent predictive ability of the "physically punished for wrongdoing" item on suicidality.

CHAPTER 5: DISCUSSION

The current study examined the validity of Self-Trauma Theory in explaining the impact of CPD and childhood psychological maltreatment on the increased use of dysfunctional tension-reducing behaviors in adulthood, namely substance use, aggression, and suicidal thoughts and/or behaviors. Three hypotheses were tested: (1) more frequent experiences of CPD and childhood psychological maltreatment would predict increased use of these tension-reducing behaviors; (2) greater frequency of CPD and childhood psychological maltreatment would predict greater alterations in self-capacities (i.e., identity, interpersonal relatedness, and affect regulation); and (3) greater alterations in self-capacities would mediate the relationship between CPD and childhood psychological maltreatment and the use of tension-reducing behaviors. Each of these hypotheses will be discussed below; however, a brief discussion detailing the data collected is warranted.

Significant relationships among many of the maltreatment variables were observed. Especially noteworthy is the correlation between the two primary variables under study, CPD and childhood psychological maltreatment. This finding is similar to those found elsewhere (e.g., Higgins & McCabe, 2000) and underscores the necessity of taking into account both of these experiences when conducting research examining either variable. In addition, the co-occurrence of these experiences may be of particular concern in the clinical setting where it is not uncommon for assessment and intervention to target physically abusive experiences and fail to adequately address psychological maltreatment.

Also noteworthy is the finding that participant sex significantly predicted alcohol use only. This is surprising given studies that suggest men and women may differ on the variable of aggression (Harris, 1995; Kinney, Smith, & Donzella, 2001). Other research suggests that sex differences in aggression may be the result of the type of aggression examined. For instance, females have been noted to exhibit more indirect, relational, or covert forms of aggression, whereas males are found to display more direct, physical, or overt forms of aggression (Crick & Grotpeter, 1995; Richardson & Green, 1999). The measure used in the current study defined aggression as a broad concept and included items assessing aggressive attitude, verbal and physical aggression. Differences in aggression based on sex may have been obscured by the use of a broadband measure of the variable.

The first hypothesis of this investigation received partial support. Results suggested that CPD and childhood psychological maltreatment significantly predicted participants self-reported levels of aggression. More specifically, the experience of emotional abuse, in particular being yelled at and made afraid, appeared most predictive of current aggressiveness. In addition, CPD and childhood psychological maltreatment predicted current levels of suicidality. The experience of physical discipline (or corporal punishment) in childhood was the only type of childhood maltreatment independently predictive of current suicidality. Interestingly, the maltreatment variables under study did not predict current alcohol or drug problems. This finding is difficult to explain in light of previous research; however, it may be partially due to the finding that the current sample reported greater problematic substance use than that reported by the normative sample for the measure employed. This may obscure possible connections among the variables as

substance-related problems appear to be more prevalent than is actually the case in the general population. This is not altogether surprising given that the sample was composed exclusively of university students, a population typically found to have more alcohol and drug problems than the national average (Clements, 1999; Gledhill-Hoyt, Lee, Strote, & Wechsler, 2000; Slutske, 2005). In addition, a number of environmental and situational influences (i.e., stress, social pressure) have been found to impact alcohol and drug use (Preston, 2006; Wood, Read, Palfai, & Stevenson, 2001) and may have obscured the relationship between childhood maltreatment and current substance use.

The second hypothesis of the current investigation was supported by the results of the current study. Individuals experiencing a greater frequency of childhood psychological maltreatment and/or physical abuse reported greater impairment in interpersonal relationships; however, only emotional abuse was predictive of difficulties with affect regulation. Being yelled at and being intimidated or scared were particularly predictive of impairment in both of these self-capacities. Neither CPD nor psychological maltreatment was predictive of identity problems; however, the experience of childhood neglect was predictive of identity concerns and psychological neglect in particular (i.e., being ignored) demonstrated the greatest ability to predict problems with this self-capacity. These findings suggest that psychological maltreatment, broadly conceived of as abuse and/or neglect, may be predictive of impairment in each of the three self-capacities defined by Self-Trauma Theory.

The final hypothesis of this study is that self-capacities mediate the relationship between childhood psychological maltreatment and CPD and the use of dysfunctional tension-reducing behaviors. Partial support was found for this hypothesis. Although none

of the maltreatment variables independently predicted alcohol problems, psychological neglect did predict concerns in identity impairment, which was predictive of current alcohol problems. Similarly, none of the maltreatment variables predicted current drug problems; however, interpersonal conflicts were predictive of drug problems and CPD and psychological abuse significantly predicted problems with interpersonal relatedness. These findings suggest that childhood psychological maltreatment and CPD indirectly influenced alcohol and drug problems through detrimental effects on self-capacities.

Greater dysfunctional interpersonal relatedness predicted higher levels of aggression; however, emotional abuse was still predictive of aggression albeit a much weaker predictor after controlling for interpersonal conflicts. More specifically, an increased frequency of being yelled at in childhood continued to predict aggression significantly after controlling for the self-capacities. This finding suggests that the impact of emotional abuse on later aggression is partly explained by the alteration in interpersonal relatedness resulting from emotional abuse; however, it also suggests that other variables impact the current use of aggression. One possible explanation is learning history in that caretakers may model aggression as a coping skill through the acts of yelling or emotionally berating the child. It is plausible that such modeling influences increase the likelihood that an individual will use aggression as a problem-solving strategy (Bandura, 1978). Also of note is the finding that CPD exerted an influence on the development of dysfunctional interpersonal relationships, but did not predict aggression. As such, CPD appears to influence the development of aggression in an indirect way through its altering effects on interpersonal relatedness.

The pathways explaining suicidality are more complex. Impairments in two of the self-capacities, identity and affect regulation, were predictive of suicidality. These two factors were able to significantly reduce the ability of CPD to predict suicidality. This suggests that these two self-capacities fully mediated the impact of CPD on adult suicidality. In addition, the finding that childhood emotional abuse predicted affect dysregulation and childhood emotional neglect (i.e., being ignored) predicted identity impairment suggests that psychological maltreatment may exert a profound, indirect influence on the development of suicidal ideation and behaviors in adulthood. These findings provide support for the utility of Self-Trauma Theory in explaining how childhood psychological maltreatment and CPD influence later self-injurious or self-destructive behavior.

Theoretical Implications

These results provide useful information for theory-building. As discussed previously, each of the three self-capacities included in Self-Trauma Theory have received empirical support for their role in understanding the long-term impact of child sexual abuse. The present results suggest that the theory may be in need of modification when applied to CPD and/or childhood psychological maltreatment. Specifically, no one maltreatment variable was able to predict all of the self-capacities under study; rather, each form of maltreatment appeared to impact the examined self-capacities in different ways. These findings suggest that the tenets of Self-Trauma Theory may function differently given the type of maltreatment and the tension-reducing behavior under study. In addition, the pathways explaining the use of tension-reducing behaviors were sometimes complex and a mediational model did not always fully explain the impact of

child maltreatment. This suggests that other variables may be at work and a more comprehensive model, taking into account other factors, is warranted.

As discussed previously, Briere (2002) drew heavily on attachment theory is explaining the development of self-capacities and, likewise, attachment theory was used here to provide a theoretical explanation for how childhood psychological maltreatment and CPD may result in similar alterations in development. Although the current study did not directly investigate attachment processes, the observed differences in functioning depending on the form of maltreatment experienced may inform the theoretical foundations of the development of self-capacities. It is possible that psychological maltreatment and physical abuse alter attachment processes in different ways that are not yet understood. By examining these differential alterations it may be possible to better predict and ameliorate long-term alterations in self-capacities and prevent the use of dysfunctional tension-reducing behaviors.

Perhaps Self-Trauma Theory is best described as a descriptive approach of classifying personality variables considered vital to healthy functioning. Although attachment theory provided the original theoretical formulation for the development of altered self-capacities, other theoretical positions may also be valid for describing such development. For example, Linehan (1987; 1993) has defined Biosocial Theory to understand similar personality disturbances. This theory suggests that a biological predisposition to personality dysfunction is triggered through environments that are emotionally invalidating. The current study may help in defining the types of environments or experiences that interact with temperamental susceptibility to produce increased risk of personality alterations. For example, these results suggest that being

scared or provoked in childhood is strongly predictive of dysregulated affect, while being ignored for extended periods of time in childhood is predictive of identity impairment. Both of these self-capacities were found to significantly predict current suicidal ideation. Similarly, the current study may inform other theoretical perspectives examining related constructs.

Limitations of the Present Study

The current study had several limitations. Most salient among these limitations is the homogeneity of the obtained sample on several factors. The sample was primarily composed of participants reporting a European-American ethnicity (92.4%). This finding limits the generalizability of the results to other ethnic groups. In addition, the use of a university sample poses specific concerns, such as the restricted age range of the participants (87.3% were 20 years old or younger) and the likelihood that few participants were from the lowest socioeconomic stratum. This homogeneity is a significant concern as culture (of which ethnicity, age, and socioeconomic status are significant components) exerts a considerable effect on childrearing practices, definitions of maltreatment, and symptom formation following maltreatment (Cohen, Deblinger, Mannerino, & de Arellano, 2001; Ferrari, 2002). In addition, the inability to control for these cultural variables during analyses prevents assumptions being made about the possible generalizability of these findings.

Another limitation of the current study is that few participants (8.9%) reported a history of childhood sexual abuse. This is inconsistent with current estimates that suggest the prevalence of sexual abuse is between 5% and 15% for males and 20% and 25% for females (Berliner & Elliott, 2002). The current sample may not be representative of the

general population in this respect and, therefore, generalizability may be further limited given the research suggesting that sexual abuse has a significant impact on the development of self-capacities. Alternatively, it is possible that participants underreported histories of sexual abuse, which then calls into question their reporting of psychological and physical abuse and neglect.

The retrospective methodology employed is often problematic when attempting to analyze developmental pathways. It is not always possible to verify retrospective reports and this was the case with the current study. In addition, self-report methodologies are susceptible to forgetting, exaggerating and minimizing influences, and demand characteristics. The most effective research methodology for examining developmental issues is a prospective, longitudinal design that includes reports from various reliable and documented sources. Although this optimal strategy was not possible in the current case and the generalizability of these findings are limited, the current study is an initial first-step in examining mediational properties of self-capacities, or other personality variables for that matter, on the long-term impact of childhood psychological maltreatment and CPD.

Directions for Future Research

The findings and limitations of the current study offer a number of suggestions for future research. Although the results of the present investigation suggest that self-capacities may serve as mediating factors of the long-term impact of childhood psychological maltreatment and CPD, more powerful methodologies may provide more convincing evidence for the contentions of Self-Trauma Theory. For example, studies that employ prospective, longitudinal designs or structural equation modeling can provide

more definitive answers that avoid a number of the limitations encountered by the present study. In addition, these studies should strive to use more representative samples based on numerous cultural variables (e.g., age, ethnicity, socioeconomic status) and examine the generalizability of the findings to diverse populations.

In keeping with the developmental formulation of Self-Trauma Theory, the rationale for the current research used attachment theory to understand the way that child maltreatment can alter the development of self-capacities; however, attachment styles were not directly assessed. Future research should examine patterns of attachment and the quality of attachment relationships on the development of self-capacities. In addition, research examining the validity of other theoretical perspectives is warranted. For example, biological predisposition (i.e., temperament) may provide evidence of physiological reactivity that can impact affective control. Learning theory may also be particularly relevant in understanding the development of interpersonal styles of relatedness and the development of emotion regulation skills or behaviors.

A number of mediating and moderating variables are, as yet, unexamined. The current research suggests that childhood psychological and/or physical maltreatment may result in alterations in self-capacities, but child maltreatment is a multi-faceted experience that includes factors such as maltreatment chronicity, perpetrator status, number of perpetrators, cognitions about the maltreatment, and many other variables. The current study examined the frequency and severity of maltreatment as well as the experience of multiple forms of maltreatment. Future research should examine the impact of other facets of the maltreating experience to examine the impact they have on the development of self-capacities. In addition, protective factors should also be examined to determine

their ability to ameliorate the impact of child maltreatment on the altered development of these self-capacity variables. For example, the presence of social support may prevent the detrimental impact of psychological abuse by providing affirming relationships that counteract the damaging effects of the maltreatment.

Finally, the clinical applicability of the current findings deserves investigation. Although this research suggests that self-capacities may be a target of intervention to reduce suicidality, aggression, or substance use, it does not provide suggestions on ways to intervene. In addition, to more clearly define the ways that altered self-capacities result from maltreatment, attention should be paid to developing ways of ameliorating identified deficits. Existing models of intervention (e.g., Dialectical Behavior Therapy; Linehan, 1993) may provide clues or suggestions and should be tested in relation to their effect on self-capacities. One interesting approach is to examine the long-term protective impact of mental health treatment for individuals who receive services in childhood after having been identified as victims of psychological or physical maltreatment. Often times, psychological treatment for children focuses on reducing or eliminating the presenting symptoms and may pay little attention to the development of self-capacities. Research examining early identification and treatment may be instructive and provide assistance in developing effective ways of preventing the long-term detrimental development of self-capacities.

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Appendix A

CCMS

Please use the following scoring key to answer sections 1-5:

0 = *never or almost never*
1 = *occasionally*
2 = *sometimes*
3 = *frequently*
4 = *very frequently*

Section 1: Before the age of 13, how frequently did you experience any of the following behaviors? Please rate the frequency with which the behaviors were directed toward you by your primary maternal figure (i.e., biological mother, stepmother, grandmother), your primary paternal figure (i.e., biological father, stepfather, grandfather), and other adults or older adolescents. A primary figure is the individual most responsible for your care as a child. If you had more than one primary maternal or paternal figure, select the one that you feel was the primary figure for the greatest amount of time during your childhood and include the other figure in the other adult category.

	Maternal Figure	Paternal Figure	Other adult/older adolescent
Physically punished for wrongdoing (e.g., smacking, grabbing, shaking)	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Other use of violence (e.g., hitting, punching, kicking)	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Severely hurt you (requiring medical attention)	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4

Section 2: Before the age of 13, how frequently did you witness any of these behaviors listed in Section 1 directed toward others in the family?

0 1 2 3 4

(continued on next page)

Section 3: Before the age of 13, how frequently did you experience any of the following behaviors? Please rate the frequency with which the behaviors were directed toward you by your primary maternal figure (i.e., biological mother, stepmother, grandmother), your primary paternal figure (i.e., biological father, stepfather, grandfather), and other adults or older adolescents. A primary figure is the individual most responsible for your care as a child. If you had more than one primary maternal or paternal figure, select the one that you feel was the primary figure for the greatest amount of time during your childhood and include the other figure in the other adult category.

	Maternal Figure	Paternal Figure	Other adult/older adolescent
Yelled at you	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Ridiculed, embarrassed, used sarcasm (made you feel guilty, silly, or ashamed)	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Provoked, made you afraid, used cruelty	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4

Section 4: Before the age of 13, how frequently did you witness any of these behaviors listed in Section 3 directed toward others in the family?

0 1 2 3 4

Section 5: Before the age of 13, how frequently did you experience any of the following behaviors? Please rate the frequency with which the behaviors were directed toward you by your primary maternal figure (i.e., biological mother, stepmother, grandmother), your primary paternal figure (i.e., biological father, stepfather, grandfather), and other adults or older adolescents. A primary figure is the individual most responsible for your care as a child. If you had more than one primary maternal or paternal figure, select the one that you feel was the primary figure for the greatest amount of time during your childhood and include the other figure in the other adult category.

	Maternal Figure	Paternal Figure	Other adult/older adolescent
Not giving you regular meals or baths, clean clothes, or needed medical attention	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Shut you in a room alone for an extended period of time	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Ignored your requests for attention; did not speak to you for an extended period of time	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4

(continued on next page)

Please use the following scoring key to answer section 6:

0 = *never*
1 = *once*
2 = *twice*
3 = *3-6 times*
4 = *7-20 times*
5 = *more than 20 times*

Section 6: Many people report having childhood sexual experiences with other children or with older people. The following questions relate only to sexual activities with older people. These 'older people' include someone who at the time was either an adolescent (at least 5 years older than you) or an adult (18 years of age or older). Before you turned 13, did an older person engage in any of the following types of sexual activity with you?

	Maternal Figure	Paternal Figure	Other adult/older adolescent
Requested you to do something sexual	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5
Forced you to watch others have sex	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5
Showed you his erect penis		0 1 2 3 4 5	0 1 2 3 4 5
Touched your penis, vagina, or breasts	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5
Made you touch his penis/ her vagina, or breasts	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5
Put his/her mouth on your penis or vagina	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5
Made you put your mouth on his penis/her vagina	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5
Put a finger in your vagina or anus	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5
Put his penis in your vagina or anus		0 1 2 3 4 5	0 1 2 3 4 5
Put other object in your vagina or anus	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5

Appendix B

Demographic Questionnaire

1. Age: _____

2. Sex: Male Female

3. Ethnicity (please check only one):

_____ White or European-American

_____ Black or African-American

_____ Hispanic or Latino-American

_____ Asian or Asian-American

_____ Native American

_____ Mixed Ethnicity
(*please specify*)_____

_____ Other
(*please specify*)_____

Appendix C

Informed Consent Form

You are invited to participate in this research study. The following information is provided to assist you in making an informed decision whether or not to participate. Please feel free to ask questions at any time. You are eligible to participate in this study because you are a student in a Psychology 101 class at Indiana University of Pennsylvania.

The purpose of this study is to examine the relationships between childhood experiences and current behaviors, thoughts, and feelings. Your participation includes completing three (3) questionnaires asking a wide variety of questions. It is estimated that answering the questionnaires will require approximately 1 ½ hours. You will also be asked to complete a short questionnaire asking about demographic information (i.e., age, ethnicity). No questions will ask for identifying information (i.e., name, birthdate, social security number) and you should **NOT** provide any identifying information on any of the research forms. This will ensure that your answers and the data collected remain anonymous. In addition, this informed consent form will be kept in a separate file from the completed questionnaires and there will be no way to match this informed consent form with the questionnaires you complete. This further guarantees your anonymity. All questionnaires and informed consent forms will be kept in a locked file.

There are no known risks associated with participation in the study; however, some of the questions do ask about information of a personal nature and it is possible that you may be asked questions about disturbing childhood experiences. In the event that you experience discomfort in answering the questions, a list of mental health resources has been included in this packet and a licensed psychologist is present in the building. Please contact the experimenter if you need assistance.

Your participation in this study will assist in defining the relationship between childhood experiences and adult psychological adjustment. In so doing, researchers may be able to develop more effective intervention programs for children who have suffered unfortunate experiences and for adults who are struggling with psychological symptoms associated with unfortunate childhood experiences. Information obtained from your participation in this study will be entered into a statistical software package for analysis. Collected data will be retained for a minimum of three years in compliance with federal regulations. The data collected during this study may be published in psychological research journals or presented at conferences. As a participant, if you are interested, you are entitled to a meeting with the Principal Investigator to discuss the results of the study once all of the data have been collected. Contact information is provided below.

Your participation in this study is completely **voluntary**. You are free to decide to not participate in this study or you may withdraw from participating in the study at any time without penalty. Your decision will not affect your relationship with the Principal Investigator or IUP. If you choose to participate, you may withdraw at any time by notifying the person administering the questionnaires. In the event that you withdraw from participation, the questionnaires completed to that point will be destroyed and the data will not be included in statistical analyses.

This research project has been approved by the Indiana University of Pennsylvania Institutional Review Board (IRB) for the Protection of Human Subjects (Phone: 724-357-7730).

For further information about this study or to request a meeting with the Principal Investigator to learn the results of the study, please contact:

Principal Investigator: Brian Allen, M.S.
Doctoral Candidate
Department of Psychology
220 Uhler Hall
Indiana, PA 15705
(724) 357-6227
B.J.Allen2@iup.edu

Faculty Sponsor: Donald Robertson, Ph.D.
Professor of Psychology
Department of Psychology
222 Uhler Hall
Indiana, PA 15705
(724) 357-4522
Donald.Robertson@iup.edu

VOLUNTARY CONSENT FORM

I have read or have had read to me the information contained on the informed consent form. Any questions that I have regarding the study have been answered by the principal investigator or one of his assistants. I have been told of the risks or discomforts and possible benefits of the study. I understand my participation is voluntary and that some of the questions asked during the assessment will reference possible unpleasant childhood experiences. I understand that my refusal to participate will involve no penalty or loss of rights to which I am entitled. I may withdraw from participation at any time without penalty. I also understand that the results of this study may be published, but my individual scores and responses are anonymous and can not be revealed. I have received an unsigned copy of the informed consent form to keep in my possession.

I understand my rights as a research participant and I voluntarily consent to participate in this study. I understand what the study is about and how and why it is being done.

_____ _____
Participant's Signature Date

_____
Participant's Name (Print)

I certify that I have explained to the above individual the nature and purpose, the potential benefits, and possible risks associated with participating in this research study, have answered any questions that have been raised, and have witnessed the above signature.

_____ _____
Investigator's Signature Date

Appendix D

Debriefing Form

1. Rationale for the current study. The current study is an examination of the impact of maltreating childhood experiences on adult psychological symptoms (Briere & Elliot, 2003). It is designed to investigate the ways that childhood maltreatment can alter psychological functioning in adulthood. The results of this study may result in a better understanding of the long-term impact of childhood maltreatment and later research may examine how potential long-term consequences can be prevented.

2. Obtaining results of this study. As a participant in this study, you are entitled to a meeting with the Principal Investigator once all of the data have been collected. You may also contact the Principal Investigator to obtain results of the study, even if you do not desire a meeting. To schedule a meeting or to obtain a copy of the results you can contact Brian Allen at (724) 357-6227 anytime after April 1, 2007.

Thank you for your participation in this study.

Sincerely,

Brian Allen, M.S.
Doctoral Candidate
Department of Psychology
Indiana University of Pennsylvania
Indiana, PA 15705

Appendix E

Mental Health Resources

If you wish to speak with a mental health professional following your participation in this study, please feel free to contact one of the following mental health service providers. Note that there may be fees associated with some of these providers.

IUP Center for Counseling and Psychological Services
307 Pratt Hall
201 Pratt Dr.
Indiana, PA 15705
724-357-2621
*Services are free to students.

IUP Center for Applied Psychology
Adult Treatment Clinic
210 Uhler Hall
1040 Oakland Ave.
Indiana, PA 15705
724-357-6228
*Services are discounted for students.

Community Guidance Center
793 Old Route 119 Hwy. North
Indiana, PA 15701
724-465-5576

Neuropsychiatric Associates
850 Hospital Dr.
Medical Arts Building, Suite 2200
Indiana, PA 15701
724-464-0270

Indiana Psychology Associates
164 Philadelphia St.
Indiana, PA 15701
724-349-8021

University Psychologists and Associates
31 South Carpenter Rd.
Indiana, PA 15701
724-349-7580

Table 1: *Demographic Descriptive Statistics and Analyses for the Inventory of Altered Self-Capacities (IASC) Scales*

Scale	Sex	Age Group: *M* (*SD*)				Total	*F* (3, 232)
		18 years	19 years	20 years	21 years and over		
Interpersonal Conflicts (IC)	Male	19.2 (4.4)	20.2 (5.8)	21.3 (6.0)	20.2 (7.6)	20.1 (5.7)	
	Female	20.2 (5.8)	22.8 (6.8)	23.0 (6.9)	22.9 (6.6)	21.7 (6.4)	
	Total	19.9 (5.4)	21.8 (6.4)	21.8 (6.1)	21.2 (7.3)	21.0 (6.2)	1.66
	F(234)					4.09	
Identity Impairment (II)	Male	16.8 (6.2)	15.7 (6.5)	19.2 (10.0)	16.0 (6.2)	16.8 (7.2)	
	Female	18.4 (7.7)	17.5 (7.4)	18.4 (6.4)	19.7 (8.3)	18.2 (7.5)	
	Total	17.9 (7.2)	16.9 (7.1)	19.0 (9.1)	17.4 (7.1)	17.6 (7.4)	.60
	F(234)					1.67	
Affect Dysregulation (AD)	Male	15.5 (4.4)	15.7 (5.8)	17.6 (9.0)	17.0 (9.9)	16.2 (7.0)	
	Female	18.0 (7.6)	18.5 (8.1)	22.0 (9.3)	18.2 (7.2)	18.4 (7.9)	
	Total	17.1 (6.8)	17.6 (7.5)	18.8 (9.1)	17.4 (8.9)	17.5 (7.6)	.93
	F(234)					4.81	

Note: Values are reported in raw scores. No significant results obtained for the ANOVAs or t-tests.

Table 2: *Demographic Descriptive Statistics and Analyses for the Personality Assessment Inventory (PAI) Scales*

Scale	Sex	Age Group: *M* (*SD*)				Total	*F* (3, 232)
		18 years	19 years	20 years	21 years and over		
Alcohol Problems (ALC)	Male	6.7 (5.4)	12.5 (8.6)	6.0 (5.4)	9.9 (8.8)	9.0 (7.6)	
	Female	6.4 (5.7)	6.2 (6.1)	3.7 (2.9)	7.1 (5.6)	6.2 (5.7)	
	Total	6.5 (5.5)	8.4 (7.7)	5.4 (4.9)	8.9 (7.8)	7.4 (6.7)	4.06*
	F(234)					7.56*	
Drug Problems (DRG)	Male	4.7 (3.9)	10.3 (7.7)	2.9 (4.7)	10.5 (9.2)	7.2 (7.3)	
	Female	5.3 (5.9)	4.6 (4.7)	5.4 (9.0)	4.6 (5.2)	5.0 (5.5)	
	Total	5.1 (5.3)	6.6 (6.5)	3.6 (6.0)	8.4 (8.4)	5.9 (6.4)	3.49
	F(234)					4.45	
Aggression (AGG)	Male	16.7 (9.3)	19.8 (9.6)	19.0 (12.4)	23.0 (12.0)	19.3 (10.7)	
	Female	15.9 (9.3)	15.9 (9.1)	19.9 (11.1)	17.0 (9.8)	16.2 (9.3)	
	Total	16.1 (9.3)	17.3 (9.4)	19.2 (11.8)	20.8 (11.4)	17.5 (10.0)	1.28
	F(234)					2.20	

Suicidal Ideation (SUI)	Male	3.7 (5.1)	4.3 (4.9)	6.4 (9.1)	6.6 (7.3)	5.0 (6.4)	
	Female	4.5 (6.9)	4.2 (4.7)	5.0 (7.4)	2.2 (2.1)	4.2 (5.8)	
	Total	4.2 (6.3)	4.2 (4.7)	6.0 (8.5)	5.0 (6.3)	4.5 (6.1)	.39
	F(234)					1.68	

Note: Values are reported in raw score. Significant interaction effect for Alcohol Problems (ALC) scale, $F(3, 228) = 2.92$, $p < .05$.
*$p < .01$.

Table 3: *Zero-Order Correlations*

	2	3	4	5	6	7	8	9	10	11	12
1. Physical Abuse Scale	.64*	.53*	.48*	.22*	.35*	.21*	.29*	.04	.05	.22*	.28*
2. Emotional Abuse Scale		.53*	.51*	.20*	.41*	.24*	.37*	.08	.05	.32*	.27*
3. Witnessing Abuse Scale			.40*	.19*	.19*	.15	.18*	.12	.09	.10	.19*
4. Neglect Scale				.07	.18*	.25*	.19*	.08	.04	.14	.15
5. Sexual Abuse Scale					.05	-.02	.02	-.02	.07	.05	.16
6. Interpersonal Conflicts (IC) Scale						.50*	.73*	.17*	.17*	.47*	.40*
7. Identity Impairment (II) Scale							.65*	.21*	.16	.08	.49*
8. Affect Dysregulation (AD) Scale								.16	.16	.42*	.56*
9. Alcohol Problems (ALC) Scale									.58*	.30*	.14
10. Drug Problems (DRG) Scale										.30*	.26*
11. Aggression (AGG) Scale											.24*
12. Suicidal Ideation (SUI) Scale											

Note: The Physical Abuse, Emotional Abuse, Witnessing Abuse, Neglect, and Sexual Abuse scales are components of the Comprehensive Child Maltreatment Scale (CCMS). The Interpersonal Conflicts, Identity Impairment, and Affect Dysregulation scales

are components of the Inventory of Altered Self-Capacities (IASC). The Alcohol Problems, Drug Problems, Aggression, and Suicidal Ideation scales are components of the Personality Assessment Inventory (PAI).
*p <.01.

Table 4: *Simultaneous Regression Analyses Using CCMS Scales to Predict Scores on the PAI and IASC Scales*

PAI/IASC Scale	CCMS Scale (standardized βs)				*R*	R^2	*F*(*df*)
	Physical Abuse	Emotional Abuse	Witnessing Abuse	Neglect			
PAI-Aggression (AGG)	.03	.29***			.32	.10	12.95 (2, 233)***
PAI-Suicidal Ideation (SUI)	.18*	.14	.02		.30	.09	7.84 (3, 232)***
IASC-Interpersonal Conflicts (IC)	.20*	.36***	-.08	-.06	.44	.19	13.46 (4, 231)***
IASC-Identity Impairment (II)	.06	.11		.16*	.28	.08	6.75 (3, 232)***
IASC-Affect Dysregulation (AD)	.12	.34***	-.05	-.02	.38	.15	9.87 (4, 231)***

Note: CCMS = Comprehensive Child Maltreatment Scale. PAI = Personality Assessment Inventory. IASC+ Inventory of Altered Self-Capacities
*$p < .05$, ***$p < .001$

Table 5: *Simultaneous Regression Analyses Using CCMS Items to Predict Scores on the PAI and IASC Scales*

PAI/IASC Scale	CCMS Item (standardized βs)									*R*	R^2	*F*(*df*)
	Physical Abuse			Emotional Abuse			Neglect					
	P1	P2	P3	E1	E2	E3	N1	N2	N3			
PAI-Aggression (AGG)				.26**	-.02	.16*				.34	.12	10.03 (3, 232)***
PAI-Suicidal Ideation (SUI)	.16*	.15	.02							.28	.08	6.79 (3, 232)***
IASC-Interpersonal Conflicts (IC)	.07	.04	.09	.22**	-.01	.21**				.45	.20	9.46 (6, 229)***
IASC-Identity Impairment (II)							.07	-.15*	.40***	.36	.13	11.51 (3, 232)***
IASC-Affect Dysregulation (AD)				.19*	.07	.20**				.38	.14	13.01 (3, 232)***

Note: CCMS = Comprehensive Child Maltreatment Scale. PAI = Personality Assessment Inventory. IASC = Inventory of Altered Self-Capacities. P1 = "Physically punished for wrongdoing." P2 = "Other use of violence." P3 = "Severely hurt you." E1 = "Yelled at you." E2 = "Ridiculed, embarrassed, used sarcasm." E3 = "Provoked, made you afraid, used cruelty." N1 = "Not giving you regular meals or baths, clean clothes, or needed medical attention." N2 = "Shut you in a room alone for an extended period of time." N3 = "Ignored your requests for attention; did not speak to you for an extended period of time."
*$p < .05$, **$p < .01$, ***$p < .001$

Table 6: *Simultaneous Regression Analyses Using IASC Scales to Predict Scores on the PAI Scales*

PAI Scale	Step 1: Sex	Step 2: IASC Scale (standardized βs)			*R*	R^2	*F*(*df*)
		Interpersonal Conflicts (IC)	Identity Impairment (II)	Affect Dysregulation (AD)			
Alcohol Problems (ALC)	-.20	.11	.18*		.32	.10	8.92 (3, 232)***
Aggression (AGG)		.35***		.16	.48	.23	34.70 (2, 233)***
Suicidal Ideation (SUI)		-.03	.22**	.44***	.59	.34	40.40 (3, 232)***

Note: PAI = Personality Assessment Inventory. IASC = Inventory of Altered Self-Capacities.
*$p < .05$, **$p < .01$, ***$p < .001$

Table 7: *Hierarchical Regression Analysis Using CCMS and IASC Scales to Predict Scores on the PAI Aggression Scale*

Step and Predictor Variables	β	t	R	R^2	$F(df)$	R^2 change	F change
Step 1: Self-Capacity Variables			.48	.23	34.7 (2, 233)***		
IASC: Interpersonal Conflicts (IC)	.35	4.14***					
IASC: Affect Dysregulation (AD)	.16	1.93					
Step 2: Child Maltreatment Variables			.50	.25	18.78 (4, 231)***	.02	2.44
CCMS: Physical Abuse	-.03	.38					
CCMS: Emotional Abuse	.15	2.0*					

Note: PAI = Personality Assessment Inventory. IASC = Inventory of Altered Self-Capacities. CCMS = Comprehensive Child Maltreatment Scale. Beta coefficients are reported in standardized values.
*$p < .05$, ***$p < .001$.

Table 8: *Hierarchical Regression Analysis Using CCMS Items and IASC Scales to Predict Scores on the PAI Aggression Scale*

Step and Predictor Variables	β	t	R	R^2	$F(df)$	R^2 change	F change
Step 1: Self-Capacity Variables			.48	.23	34.7 (2, 233)***		
IASC: Interpersonal Conflicts (IC)	.35	4.14***					
IASC: Affect Dysregulation (AD)	.16	1.93					
Step 2: Child Maltreatment Variables			.50	.25	15.51 (5, 230)***	.02	2.33
CCMS: Emotional Abuse Item 1	.16	2.14*					
CCMS: Emotional Abuse Item 2	-.03	.41					
CCMS: Emotional Abuse Item 3	.05	.74					

Note: Note: PAI = Personality Assessment Inventory. IASC = Inventory of Altered Self-Capacities. CCMS = Comprehensive Child Maltreatment Scale. Emotional Abuse Item 1 = "Yelled at you." Emotional Abuse Item 2 = "Ridiculed, embarrassed, used sarcasm." Emotional Abuse Item 3 = "Provoked, made you afraid, used cruelty." Beta coefficients are reported standardized values.
*$p < .05$, ***$p < .001$.

Table 9: *Hierarchical Regression Analysis Using CCMS and IASC Scales to Predict Scores on the PAI Suicidal Ideation Scale*

Step and Predictor Variables	β	t	R	R^2	$F(df)$	R^2 change	F change
Step 1: Self-Capacity Variables			.59	.34	40.4 (3, 232)***		
IASC: Interpersonal Conflicts (IC)	-.03	.34					
IASC: Identity Impairment (II)	.22	3.14**					
IASC: Affect Dysregulation (AD)	.44	5.0***					
Step 2: Child Maltreatment Variables			.60	.36	21.44 (6, 229)***	.02	1.97
CCMS: Physical Abuse	.13	1.74					
CCMS: Emotional Abuse	-.02	.29					
CCMS: Witnessing Abuse	.04	.58					

Note: PAI = Personality Assessment Inventory. IASC = Inventory of Altered Self-Capacities. CCMS = Comprehensive Child Maltreatment Scale. Beta coefficients are reported in standardized values.
**$p < .01$, ***$p < .001$.

Table 10: *Hierarchical Regression Analysis Using CCMS Items and IASC Scales to Predict Scores on the PAI Suicidal Ideation Scale*

Step and Predictor Variables	β	t	R	R^2	$F(df)$	R^2 change	F change
Step 1: Self-Capacity Variables			.59	.34	40.4 (3, 232)***		
IASC: Interpersonal Conflicts (IC)	-.03	.34					
IASC: Identity Impairment (II)	.22	3.14**					
IASC: Affect Dysregulation (AD)	.44	5.0***					
Step 2: Child Maltreatment Variables			.60	.36	21.77 (6, 229)***	.02	2.41
CCMS: Physical Abuse Item 1	.07	1.0					
CCMS: Physical Abuse Item 2	.11	1.69					
CCMS: Physical Abuse Item 3	-.04	.69					

Note: Note: PAI = Personality Assessment Inventory. IASC = Inventory of Altered Self-Capacities. CCMS = Comprehensive Child Maltreatment Scale. Physical Abuse Item 1 = "Physically punished for wrongdoing." Physical Abuse Item 2 = "Other use of violence." Physical Abuse Item 3 = "Severely hurt you." Beta coefficients are reported standardized values.
**$p < .01$, ***$p < .001$.