

Emotional Abuse and Emotional Neglect in Childhood:
Subtypes, Ecological Correlates, and Developmental Tasks of Emerging Adulthood

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~ For my Grammy, Doris Margaret ~

From the bottom of my heart – neither I, nor this dissertation, would have been possible without you. I miss you every day.

Abstract

Theoretical and empirical work indicate that childhood emotional maltreatment (CEM), despite persistent views that it is not as widespread or damaging as other forms of childhood maltreatment, is alarmingly common and exacts lasting consequences over youth and into adulthood. Despite these findings, empirical and social attention to CEM lags behind other forms of childhood maltreatment. With a large, diverse college student sample, this endeavor employed a developmental psychopathology perspective to (Study 1) examine CEM subtypes, (Study 2) document ecological correlates of childhood emotional abuse (CEA) and childhood emotional neglect (CEN), and (Study 3) examine associations between CEM experiences and current functioning on stage-salient tasks of emerging adulthood, with a focus on attachment theory to guide possible mediators of these relationships.

First, this project responded to ongoing debate in the literature regarding conceptual and operational definitions of CEM subtypes (Study 1), providing evidence through exploratory and confirmatory factor analysis for CEN and CEA subtypes. Next, (Study 2) examination of shared and unique ecological correlates associated with CEN and CEA, with a focus on family characteristics and processes, were examined. With all predictors in a single model, correlates unique to CEN included challenges to parenting, such as single parent households or children who were raised in foster care or by other family members. Factors unique to CEA included patterns of family interactions marked by hostility and negativity. Finally, (Study 3) examined the association between retrospective reports of CEM experiences and current functioning in three domains of stage-salient, developmental tasks of emerging adulthood particularly relevant to a college student sample, including academic and intellectual functioning, conduct (i.e., crime and problematic expressions of anger), and social competence. Due to a large proportion of, and differences found for, participants identifying as Asian, separate analyses were carried out for participants identifying as Asian and non-Asian (i.e., participants identifying as white, black, or Hispanic/ Latino). For non-Asian participants, higher levels of CEA were associated with both

measures of conduct (crime and problematic expressions of anger), but not with perceptions of academic or social competence. For Asian students, on the other hand, CEA did not predict conduct, but did predict academic functioning, especially for females, and social competence. For non-Asian participants, higher levels of CEN predicted academic competence, particularly for black males, and social competence. For Asian participants, CEN predicted crime (particularly for those who had experienced sexual and/or physical abuse) and social competence (particularly for males with a history of physical abuse).

Guided by attachment theory, hypothesized mediators of the relationship between reported CEM experiences and current functioning included self-esteem (CEA and perceptions of academic competence), emotion dysregulation (CEM and conduct), and current parent attachment with regard to alienation (CEM and perceptions of social competence and friendships). Findings for Asian students (but not non-Asian students) supported the hypothesized mediation of the relationship between CEA and perceptions of academic competence by self-esteem. Findings across all ethnicities supported the mediation of the relationship between CEM (CEA, in particular) and conduct (problematic expressions of anger) by emotion dysregulation (in particular, impulse control). Finally, the hypothesized mediation of the relationship between CEM and social competence by current ratings of parent attachment was found for Asian participants only. Discussion of results is guided by a developmental psychopathology perspective and includes a focus on emerging adulthood and the CEM context for Asian-identified students.

Table of Contents

List of Figures.....	v
List of Tables.....	vi
Introduction.....	1
Methods (Overall).....	22
Study 1: Introduction.....	25
Hypotheses.....	27
Methods.....	28
Results.....	41
Study 2: Introduction.....	46
Hypotheses.....	51
Methods.....	53
Results.....	61
Study 3: Introduction.....	69
Hypotheses.....	74
Methods.....	77
Results.....	84
Discussion.....	107
Figures.....	125
Tables.....	127
References.....	172
Appendix.....	189

List of Figures

Figure

1. Scree Plot for Childhood Emotional Maltreatment (CEM) Items in Exploratory Factor Analysis.....125
2. Proposed Two-Factor Structure of CEM.....126

List of Tables

Tables – Study 1

1. Demographic Characteristics and Difference Tests for Subsamples and Total Sample.....127

2. Items Selected for Factor Analysis to Represent Latent Childhood Emotional Abuse (CEA) and Childhood Emotional Neglect (CEN) Constructs.....129

3. Zero-Order Correlation Matrix of CEM Items.....130

4. Anti-Image Correlation Matrix of CEM Items.....131

5. Factor Eigenvalues and Percentages of Variance Explained.....132

6. Communalities.....133

7. Pattern Matrix of Item Factor Loadings for the Two-Factor Solution.....134

8. Structure Matrix of Item Factor Loadings for the Two-Factor Solution.....135

9. Factor Correlation Matrix.....136

Tables – Study 2

10. Name and Description of Selected Variables by Ecological Level.....137

11. Statistical Associations (ANOVA and Chi-Square) among Ecological Correlates and CEM Subtype.....139

12. Predictors' Contributions to the Multinomial Logistic Regression.....142

13. Parameter Estimates from Multinomial Logistic Regression Contrasting the No CEM (Contrast) Group to the CEM Subgroups: CEN Only, CEA Only, and Combined CEA/ CEN...144

Tables – Study 3

14. Zero-Order Correlations Between Study 3 Variables for Total Sample and by Sex.....148

15. Results of Hierarchical Regression Examining Predictive Power of CEA on Academic Achievement (Self-Perception of Scholastic Competence) in Non-Asian and Asian participants...
.....151

16. Results of Hierarchical Regression Examining Predictive Power of CEN on Academic

Achievement (Self Perception of Scholastic Competence) in Non-Asian and Asian participants...	152
17. Results of Hierarchical Regression Examining Predictive Power of CEA on Academic Achievement (Self Perception of Intellectual Ability) in Non-Asian And Asian Participants...	153
18. Results of Hierarchical Regression Examining Predictive Power of CEN on Academic Achievement (Self Perception of Intellectual Ability) in Non-Asian And Asian Participants...	154
19. Results of Hierarchical Regression Examining Predictive Power Of CEA on Conduct (Types of Crime Committed) in Non-Asian And Asian Participants.....	155
20. Results of Hierarchical Regression Examining Predictive Power of CEN on Conduct (Types of Crime Committed) in Non-Asian And Asian Participants.....	156
21. Results of Hierarchical Regression Examining Predictive Power of CEA on Conduct (Anger Expressed Outwardly) in Non-Asian And Asian Participants.....	157
22. Results of Hierarchical Regression Examining Predictive Power of CEN on Conduct (Anger Expressed Outwardly) in Non-Asian And Asian Participants.....	158
23. Results of Hierarchical Regression Examining Predictive Power of CEA on Social Competence And Friendship (Self Perception of Close Friendships) in Non-Asian And Asian Participants.....	159
24. Results of Hierarchical Regression Examining Predictive Power of CEN on Social Competence And Friendship (Self Perception of Close Friendships) in Non-Asian And Asian Participants.....	160
25. Results of Hierarchical Regression Examining Predictive Power of CEA on Social Competence And Friendship (Peer Alienation) in Non-Asian And Asian Participants.....	161
26. Results of Hierarchical Regression Examining Predictive Power of CEN on Social Competence And Friendship (Peer Alienation) in Non-Asian And Asian Participants.....	162

27.	Results of Hierarchical Regression Examining Predictive Power of CEA on Social Competence and Friendship (Peer Trust) in Non-Asian And Asian Participants.....	163
28.	Results of Hierarchical Regression Examining Predictive Power of CEN on Social Competence and Friendship (Peer Trust) in Non-Asian And Asian Participants.....	164
29.	Results of Hierarchical Regression Examining Predictive Power of CEA on Social Competence and Friendship (Peer Communication) in Non-Asian And Asian Participants.....	165
30.	Results of Hierarchical Regression Examining Predictive Power of CEN on Social Competence and Friendship (Peer Communication) in Non-Asian And Asian Participants.....	166
Tables - Discussion		
31.	Results of hierarchical regression examining predictive power of CEN on social competence and friendship (confidant support) in non-Asian and Asian participants.....	167
32.	Results of hierarchical regression examining predictive power of CEA on social competence and friendship (affective support) in non-Asian and Asian participants.....	169
33.	Results of hierarchical regression examining predictive power of CEN on social competence and friendship (affective support) in non-Asian and Asian participants.....	170

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Introduction

Childhood emotional maltreatment (CEM) within the parent-child relationship is believed to interfere with a child's basic human need for safety, love, belonging, and positive esteem and regard (Hart, Binggeli, & Brassard, 1998). Despite decades-long arguments that childhood emotional maltreatment (CEM) is the most prevalent and destructive form of child maltreatment (Binggeli, Hart, & Brassard, 2001; Brassard, Germain, & Hart, 1987; Doyle, 1997; Hart & Brassard, 1987; Iwaniec, 1995), exacting deleterious consequences above and beyond other forms of childhood maltreatment (i.e., physical abuse, sexual abuse) across childhood and into adulthood (e.g., Crawford & Wright, 2007; Greenfield & Marks, 2010; Higgins & McCabe, 2000; Sachs-Ericsson, Verona, Joiner, & Preacher, 2006; Shaffer, Yates & Egeland, 2009; Spertus, Yehuda, Wong, Halligan, & Seremetis, 2003), empirical investigation and social awareness of CEM lags far behind other forms of childhood maltreatment. It has been argued that this owes to popular misconceptions that CEM is less prevalent and less damaging than other forms of childhood maltreatment (Egeland, 2009), claims which emerging literature on CEM strongly refute. Despite this, CEM continues to be the most hidden, least reported, and least studied form of childhood maltreatment (Barnett, Miller-Perrin, & Perrin, 2005). The current endeavor focuses on the unique developmental period of emerging adulthood in a college student sample, a particularly salient time to examine childhood maltreatment history and current functioning as it is often one's first experience living away from home and requires students to navigate increasing academic demands, new relationships (e.g., roommates, professors), and uncertainty about the future (Arnett, 1997, 1998, 2000).

Studies suggest that CEM is alarmingly common, even in a college/ university setting. In Braver and colleagues' (1992) retrospective study of university counseling centers, 29.8% of the

sample reported experiences of CEM. Further, similar levels of depression, symptomatic distress, and borderline personality characteristics were found for students reporting CEM only (i.e., without co-occurring physical abuse, sexual abuse, and/or neglect) when compared to students endorsing sexual abuse and/or multiple forms of maltreatment (Braver, Bumberry, Green, & Rawson, 1992; for a review of outcomes associated with CEM in college students, see CEM and College Student Adjustment below). These findings underscore the need to abandon erroneous beliefs about the prevalence and negative consequences of CEM, and call for increased empirical attention, parental education, and intervention. The observed impact (e.g., such as with physical abuse) and the moral transgression (encapsulated by sexual abuse) may mitigate the understanding that CEM exacts negative and lasting consequences. In short, attitudes that CEM is not as serious as other forms of maltreatment and therefore not requiring immediate intervention need revision.

There is considerable and ongoing debate over what the CEM construct comprises and how it should be operationally defined for investigation. This is important because emerging evidence suggests that the experience of different emotionally maltreating behaviors confer different consequences on development and adaptation. While emotionally abusive parents, by definition, are chronically verbally hostile toward their children, this does not necessarily mean that this is the only way in which these parents interact with their children. On the other hand, emotional neglect is defined as chronic unavailability and lack of responsiveness to the child. In the case of the former, consequences to systems (e.g., concepts of self and other) relying on caregiver interaction for development may be more preserved than the latter, where system development requiring caregiver interaction might be quite seriously affected due to a caregiver's continued emotional absence. Further understanding of the family and broader contexts in which CEM occurs will help to elucidate the aspects of CEM and family characteristics and processes

contributing to the wide range of deleterious consequences associated with this form of maltreatment.

There is still much to be learned about the possible subtypes of CEM, the family and other ecological contexts in which CEM occurs, and its potential impact on development. This endeavor will therefore (Study 1) use factor analysis to examine CEM items chosen to assess a hypothesized two-factor model comprising CEA and CEN; (Study 2) examine ecological correlates, particularly related to family environment, associated with CEA and CEN; and (Study 3) examine the associations among CEM history and current functioning on stage-salient developmental tasks of emerging adulthood in an undergraduate sample.

Conceptual and operational definitions of childhood emotional maltreatment

(CEM). Several terms have been used synonymously throughout the psychological literature to refer to CEM, such as verbal abuse, emotional abuse, emotional neglect, and psychological abuse (Glaser, 2002; Hart, Binggeli, & Brassard, 1997; Hart & Brassard, 1987; Kent & Waller, 2000; O'Hagan, 1995). Interchangeable use of these terms has complicated an already complicated phenomenon.

A variety of definitions and conceptualizations of CEM have been documented in the psychological literature. Nearly thirty years ago, Garbarino and colleagues (1986) described CEA (i.e., high levels of parental attacks which devalue, ignore, reject, and undermine socio-emotional development) as “soul murder.” The American Professional Society on the Abuse of Children (APSAC) defines childhood emotional maltreatment (CEM) as a “repeated pattern of caregiver behavior or extreme incident(s) that convey to children that they are worthless, flawed, unloved, unwanted, endangered, or only of value in meeting another’s needs” (APSAC, 1995, p. 2). More recently, the Centers for Disease Control and Prevention (CDC, 2010) defined CEM as behaviors that compromise a child’s sense of well-being and self-worth, and can include name-calling and rejection.

Building on the APSAC categories (APSAC, 1995), Kairys and Johnson (2002) referred to several specific parental behaviors as emotionally maltreating, particularly if repetitive and/or severe, including *spurning* (i.e., belittling, degrading, ridiculing, or shaming a child; humiliating a child; punishing or criticizing in a manner which singles out the child), *frightening or terrorizing* (i.e., threatening or committing violence and/or life-threatening acts against a child, their loved ones, or their treasured possessions), *corrupting* (i.e., encouraging development of inappropriate behaviors through modeling, encouragement, or permitting developmentally inappropriate or antisocial behaviors, such as drug or alcohol use, sexual activity or pornography, and/or inappropriate language; forcing or encouraging a child to abandon developmentally appropriate autonomy or interfering with cognitive development), *absence of emotional responsiveness* (i.e., ignoring a child, never expressing affection, caring, and/or love for a child), *rejection* (i.e., avoiding a child and/or pushing the child away), *isolating* (i.e., placing unreasonable limitations on social interactions and/or freedom of movement), *inconsistent parenting* (i.e., placing conflicting expectations and/or demands on the child), *neglect* (i.e. failing to provide for a child's medical, mental health, and/or educational needs), and *domestic violence* (i.e., allowing a child to witness domestic violence). Others have conceptualized CEM by the continuum of emotional distress experienced by the child, ranging from despair to fear to humiliation to dehumanization, to name a few (Kent & Waller, 2000; O'Hagan, 1995; for a review, see Baker, 2009).

Emerging evidence supports the growing consensus that CEM is a multifaceted construct, leading to CEM subtype-based outcomes. As such, studies examining CEM as a unitary construct are quickly falling out of favor. Several groups employ a two-factor model of CEM, comprising childhood emotional abuse (CEA, comprising verbal hostility, taunting, belittling, and rejection), or emotionally maltreating acts of commission, and childhood emotional neglect (CEN, comprising failure to meet the emotional needs of a child as generally reflected by a parent who is

emotionally unavailable, avoidant, and/or unresponsive to a child's needs or desires), or emotionally maltreating acts of omission (CEN; Egeland, 2009). Iwaniec (1995) described the distinction between CEA and CEN as hostile versus indifferent parenting. Several studies corroborate this two-factor approach, and have yielded differential outcomes based on experiences of CEA versus CEN (e.g., Goldsmith & Freyd, 2005; Gulec, Altintas, Inanc, Bezgin, Koca, & Gulec, 2013; Kaiser & Miller-Perrin, 2009; Shaffer, Yates, & Egeland, 2009; Tanaka, Wekerle, Schmuck, & Paglia-Boak, 2011). Conceptual and empirical work lend support to the two-factor model, comprised of CEA and CEN, as the most parsimonious model of the CEM construct; still, others argue that a two-subtype model fails to capture several important CEM experiences (e.g., Nash, 2005). This is discussed in greater detail in Study 1 of the current investigation.

Prevalence and detection. It has been argued that CEM is the core feature of all other types of childhood abuse and neglect (Claussen & Crittenden, 1991; Hart & Brassard, 1987; Iwaniec, Larkin, & Higgins, 2006). While this writer agrees with authors that virtually all maltreating behavior involve aspects of CEM (e.g., terrorizing in physical abuse; Claussen & Crittenden, 1991; Hart & Brassard, 1987), CEM – and, in particular, CEA and CEN subtypes – are unique forms of childhood maltreatment which exact unique consequences even above and beyond other forms of childhood maltreatment (see Outcomes associated with CEM below).

CEM, unlike physical or sexual abuse, may be difficult to define and detect because its effects are neither visible nor immediate as in the case of physical abuse and do not represent acts which clearly transgress moral code as in sexual abuse (Brassard, Hart, & Hardy, 1993, 2000). Trickett and colleagues (2009) reviewed and recoded maltreatment data of children reported to the L.A. County Department of Child and Family Services in a specified 30-day period and found that 48.4% met criteria for having experienced CEM, despite records identifying only 8.9% of the sample as emotionally maltreated. This owes to several possible explanations ranging from

overburdened social services agencies regarding CEM as less severe and therefore not investigating reports of it to difficulties discerning what constitutes CEM (as evidenced by the above findings).

Hamerman and Bernet (2000) developed a system for detecting CEM and labeling its severity based on revisions to the APSAC categories (i.e., rejecting, isolating, terrorizing, ignoring, corrupting, verbally assaulting, and/or overpressuring, based on CEM categories proposed by Garbarino and colleagues, 1986, and later revised by Pearl, 1994). To determine severity, legal precedent is used and therefore based on intent and harm. Actions high on both would receive the most severe ratings. Certain subtypes of CEM (e.g., verbally assaulting) are easier to detect than, for example, isolating. The latter is used by many parents in the form of grounding as a result of children's transgressions. Thus, Hamerman and Bernet (2000) also suggest that careful review of family interactions and dynamics must be taken into consideration in almost every case. Within their heuristic, Hamerman and Bernet provide brief (and very helpful) case illustrations of mild, moderate, and severe CEM.

Co-occurrence with other forms of childhood maltreatment. Similar to high levels of co-occurrence of maltreatment types in studies of sexual abuse, physical abuse, and neglect, studies show that CEM often occurs in the context of other types of childhood maltreatment (Barnett, Manly, & Cicchetti, 1993; Briere & Runtz, 1990; Crawford & Wright, 2007; Edwards, Holden, Felitti, & Anda, 2003; Hankin, 2005; Herrera & McCloskey, 2001; Higgins & McCabe, 2001; Mcgee, Wolfe, & Wilson, 1997; Ney, Fung, & Wickett, 1994; Rosen & Martin, 1996; Scher, Forde, McQuaid, & Stein, 2004). Some propose that some form of CEM underlies all forms of maltreatment (Crittenden & Claussen, 1991), with one study revealing that most childhood maltreatment allegations across the United States include co-occurring CEM (Schneider, Ross, Graham, & Zielinski, 2005).

Outcomes associated with CEM. *Childhood and adolescence.* A robust literature documents the negative outcomes associated with CEM. Short-term outcomes include developmental disruptions (emotionally maltreated children are smaller in stature and evince greater difficulties meeting developmental milestones on time than nonabused peers, Iwaniec, 2004), behavioral problems (Crittenden et al., 1994; Iwaniec, Larkin, & Higgins, 2006; McGee, Wolfe, & Wilson, 1997), discipline problems (Widom & White, 1997), learning problems (delayed acquisition of basic academic skills, deficits in reading, language, math, and attentional capacities in childhood, Sheilds, Cicchetti, & Ryan, 2004; Kurtz et al., 1993; Oates, 1996, low educational and vocational goals, interand repeated grades in school in adolescence, Kelly, Thornberry, & Smith, 1997), delinquency (Brown, 1984), internalizing problems, such as low self-esteem, hopelessness, depression, and anxiety in adolescence (Dallam, 2001; Kaufman, 1991; Toth, Manly, & Cicchetti, 1992), substance use in adolescence (Hall, 2002; Moran, Vuchinich, & Hall, 2004), emotion dysregulation, and interpersonal problems (Bingghelli, Hart, & Brassard, 2001; Claussen & Crittenden, 1991; Egeland, Sroufe, & Erickson, 1983; Vissing, Straws, Gelles, & Harrop, 1991).

Adulthood. Long-term outcomes include anxiety (Briere & Runtz, 1988), depression (Alloy, Abramson, Smith, Gibb, & Neeren, 2006; Briere & Runtz, 1988; Wright, Crawford, & Del Castillo, 2009), PTSD symptomatology (Burns, Jackson, & Harding, 2010; Stuewig & McCloskey, 2005; Webb, Heisler, Call, Chickering, & Colburn, 2007), low self-esteem, emotional inhibition, emotional avoidance, social competence and adjustment (Shaffer, Yates, & Egeland, 2009), externalizing problems (Crittenden, Claussen, & Sugarman, 1994), substance abuse and failure in drug rehabilitation treatment (Baker, 1998; Conroy, Degenhardt, Mattick, & Nelson, 2009; Galaif, Stein, Newcomb, & Bernstein, 2001; Kang, Deren, & Goldstein, 2002; Lloyd & Turner, 2008; Moran, Vuchinich, & Hall, 2004; Turner & Lloyd, 2003), anger and aggression (Loos & Alexander, 1997; Nicholas & Bieber, 1996), interpersonal conflict

(Messman-Moore & Coates, 2007), domestic violence (perpetration for men, Else, Wonderlich, Beatty, Christie, & Staton, 1993; perpetration and victimization, Crawford & Wright, 2007), crime (Hamalainen & Haapasalo, 1996; Koivisto & Haapasalo, 1996), high-risk sexual behavior, self-injurious behavior (Law, Coll, Tobias, & Hawton, 1998), suicide attempts (Anderson, Tiro, Price, Bender, & Kaslow, 2002; Bifulco, Moran, Baines, Bunn, & Stanford, 2002; Forman, Berk, Henriques, Brown, & Beck, 2004; Thompson, Kaslow, Lane, & Kingree, 2000), changes in cognition and neurofunctioning (van Harmelen, Hauber, Moor, Spinhoven, Boon, Crone, & Elzinga, 2014; van Harmelen, van Tol, Dalgleish, van der Wee, Veltman, Aleman, Spinhoven, Penninx, & Elzinga, 2014; van Harmelen, van Tol, Demenescu, van der Wee, Veltman, Aleman, Van Buchem, Spinhoven, Peeninx, & Elzinga, 2013; van Harmelen, de Jong, Glashouwer, Spinhoven, Penninx, & Elzinga, 2010; van Harmelen, van Tol, van der Wee, Veltman, Aleman, Spinhoven, Buchem, Zitman, Penninx, & Elzinga, 2010), physical symptoms (reported by women in a primary care clinic, Spertus, Yehuda, Wong, Halligan, & Seremetis, 2003), and an overall higher risk for psychopathology in adulthood (Briere & Runtz, 1990; Krause, Mendelson, & Lynch, 2003; Messman-Moore & Coates, 2007; Reddy, Pickett, & Orcutt, 2006; Sroufe, 2005). For a review of outcomes associated with CEM histories in undergraduate samples, see CEM and College Student Adjustment below.

Several studies also demonstrate that CEM worsens deleterious consequences associated with other childhood maltreatment experiences (e.g., increases negative effects of childhood physical abuse, Claussen & Crittenden, 1991). Evidence also suggests that CEM is associated with functional impairments above and beyond other childhood maltreatment experiences (Chamberland, Laporte, Lavergne, Tourigny, Mayer, Wright, & Malo, 2005; Crittenden et al., 1994; Edwards, Holden, Felitti, & Anda, 2003; Schneider, Ross, Graham, & Zielinski, 2005; Shaffer et al., 2009; van Harmelen and colleagues, 2010). Teicher and colleagues (2006) found that CEM was associated with higher levels of symptomatology across several domains when

compared to physical abuse; they also found that combined CEA and domestic violence exposure impacted anxiety, depression, anger, and symptoms of dissociation at least as much, if not more, than sexual abuse (Teicher, Samson, Polcari, & McGreenery, 2006). In fact, studies of women with sexual abuse histories show that emotionally abusive and/or neglecting family environments better account for elevations in psychological symptoms than characteristics of sexual abuse (Brock, Mintz, & Good, 1997; Nash, Hulse, Sexton, Harralson, & Lambert, 1993). In a large sample of adults with histories of childhood maltreatment, Edwards and colleagues (2003) found that emotionally abusive family environments independently predicted psychological outcomes and also mediated the impact of other maltreatment experiences on psychological functioning and mental health (Edwards, Holden, Felitti, & Anda, 2003).

Outcomes associated CEM Subtypes (i.e., CEA and CEN). *Childhood emotional neglect (CEN).* Early longitudinal examination of several types of childhood maltreatment demonstrated that CEN was associated with the most severe deviations from adaptive development when compared with other CEM subtypes and physical abuse (Egeland, Sroufe, & Erickson, 1983). In Egeland and colleagues' seminal study, emotionally-neglected children were more impulsive, engaged in more self-harming behavior, displayed problematic and immature social and emotional functioning, and had more severe disturbances in their attachment systems than children who had experienced emotional abuse.

Childhood emotional abuse (CEA). Ongoing verbal insults characteristic of CEA might adeptly instill damaging beliefs about the self (e.g., I am stupid, I am incompetent, I am bad) as well as instill negative views and expectations of others and the self- in-relation-to-other (Rogosch, Cicchetti, Shields, & Toth, 1995; Waldinger, Toth, & Gerber, 2001). This process will be discussed in greater detail below (see Attachment Theory, Self, and Other below). Maternal emotional abuse has been found to be associated with identity problems, affect regulation problems, and relationship problems (Briere & Rickards, 2007).

Developmental psychopathology perspective. Developmental theory and research has long been invested in specifying the processes of transactional influence across biological (e.g., genetic, Cicchetti, 2007) and environmental contexts over time which shape an individual's development across the lifespan (e.g., ecological systems theory, Bronfenbrenner & Morris, 2006; developmental systems theory, Ford & Lerner, 1992; dynamic systems theory, Thelen & Smith, 1998; probabilistic epigenesis, Gottlieb, 1992; 1998). Pioneering the processes of adaptation and maladaptation in psychopathology, the *developmental psychopathology perspective* (Cicchetti, 1984, 1989, 1990, 1993, 2006) provides an integrative framework capable of holding the dynamic forces identified in developmental theory and research which co-act and transact to yield developmental outcomes. The developmental psychopathology perspective locates adaptation (positive or pathogenic) in the transactions among (developing) individuals' (continuously changing) internal and external environments, rather than rooting a causal explanation of psychopathology either in the person or her/his environment (Sameroff & Chandler, 1975).

The nature of adaptive and maladaptive pathways. Developmental consequences of adversity are neither restricted to a particular developmental period (e.g., in which they occur) nor do they reflect a linear relationship between adversity and outcome in adulthood. Instead, the processes underlying the consequences of adversity are best viewed as *developmental cascades* (Masten & Cicchetti, 2010), or the (nonlinear) cumulative consequences of interactions across multiple levels (i.e., brain to behavior) and contexts (i.e., internal and external environments) which yield direct and indirect effects on multiple levels and domains of functioning *within* a given developmental period as well as multiple levels and domains of functioning in *subsequent* developmental periods over one's entire life (Masten & Cicchetti, 2010). One prominent example of developmental cascade effects from one developmental period to the next and across functional domains (also discussed in Masten and Cicchetti's seminal paper on developmental cascades) comes from Patterson and colleagues' well-known theory and research on antisocial

behavior and depression in boys (Patterson, DeBaryshe, & Ramsey, 1989; Patterson & Stoolmiller, 1991). In this model, parental responses to mild behavior problems maintained and escalated, rather than diminished, problem behaviors. In other words, the process of increasingly negative behaviors in boys was supported by patterns of coercion in the context of low levels of positive parent-child interactions. Parents unwittingly reinforced mildly negative behaviors by frequent but ineffective attempts to punish behavior. When punishment failed to adequately address problem behavior, parents withdrew and therefore negatively reinforced the efficacy of problematic behavior to achieve one's goals. When this pattern of parent-child interaction was observed even prior to the start of formal schooling, boys then carried forward an aggressive relational style into the school setting where it exacted significant consequences on academic and social functioning. In turn, failures in academic and social functioning (i.e., dual failure) increased depressive symptomatology, a model which received further empirical support by Cole and colleagues (1990; 1991; Cole, Martin, Powers, & Truglio, 1996, as cited in Masten & Cicchetti, 2010). To more clearly illustrate nonlinear outcomes associated with adversity, an individual who experienced maltreatment in childhood but was adequately protected by high academic achievement and co-occurring positive relationships with teachers, for example, may fail to thrive upon college graduation, where vulnerabilities come to the fore in the absence of a supportive environment that positively reinforces interpersonal and academic success.

While the above describes what appear to be on the surface behavioral transactions, the depth of multilevel transactions inherent to the developmental psychopathology perspective can include, for example, epigenetic processes which provide a framework for understanding that environmental stressors at any point during development can affect genetic expression and subsequent development and behavior. An abundance of preclinical studies demonstrate that aspects of early caregiving affect, for example, offspring DNA methylation, which has

implications for altering genetic transcription throughout the lifespan in favor of specific behavioral outcomes (for review, see Roth & Sweatt, 2011).

Childhood abuse and neglect exert their effects by setting in motion a “probabilistic path of epigenesis” (Cicchetti & Toth, 2005, p. 414) toward maladaptation and psychopathology, owing largely to the negative (particularly in abuse) and/or insufficient (particularly in neglect) interactions between a child and his/her caregiver. This path is not deterministic; however, the notions of developmental cascades and the importance of understanding typical development to understand atypical development (another central tenet of the approach) and vice versa also help to frame the ubiquitous consequences associated with childhood maltreatment across the lifespan. The probabilistic nature of development held by the developmental psychopathology perspective also acknowledges factors and experiences conferring risk for maladaptation or promoting adaptation and resilience.

While CEM confers serious consequences on many of its victims, variables that serve as protective factors and promote resilience among individuals with CEM histories have been identified, and include such intrapersonal factors as “easy” temperament, a high IQ (Garmezy, 1987; Losel & Bliesener, 1994; Masten, Morison, Pellegrini, & Tellegen, 1990), high levels of family cohesion (McGee & Wolfe, 1991), and the development of secure attachments with secondary attachment figures (Cicchetti & Rizley, 1981; McGee & Wolfe, 1991). Such factors could alter developmental trajectories, and protect some individuals from maladaptation. On the other hand, studies have also identified risk factors coexisting with CEM which increase the likelihood for experiencing CEM and for its impact resulting in maladaptation and/or psychopathology (Black, Heyman, & Smith Slep, 2001). Children most at risk for experiencing CEM come from families that are multiply stressed (e.g., substance abuse, mental health problems, high levels of family conflict, little social support, and/or economic difficulties, Chamberland, Fallon, Black, Trocme, & Chabot, 2012; Hibbard, Barlow, MacMillan, & the

Committee on Child Abuse and Neglect and the American Academy of Child and Adolescent Psychiatry Child Maltreatment and Violence Committee, 2012).

Attachment theory. Attachment theory (Bretherton, 1992) is invoked (see Study 3) to frame the expected difficulties in stage-salient tasks of emerging adulthood by way of parent-caregiver interactions which both fail to promote normative socio-emotional development and also support maladaptation (Sroufe, Carlson, Levy, & Egeland, 1999). Parenting behaviors associated with CEM (i.e., parenting behaviors that are hostile, rejecting, and/or insensitive) are those which have been determined to confer the greatest difficulty for infants to join in a healthy, secure attachment relationship with a caregiver (Ainsworth, Blehar, Waters, & Wall, 1978; Riggs, 2010; van Ijzendoorn, 1995). CEM has the potential to disrupt the primary attachment relationship in infancy and beyond, with reviews supporting this conjecture even in adult retrospective measures of attachment as was used in the current investigation (Brennan, Clark, & Shaver, 1998). This has major implications for self-esteem, emotion regulation, and coping. Attachment theory, supported by the empirical literature, holds that children who experience caregivers as unavailable, hostile, and/or rejecting develop negative views of the self as well as expectations that, when in need, others will also respond with unavailability, hostility, and or/ rejection (Liem & Boudewyn, 1999). The healthy development of views of the self, expectations of others, and emotion regulation not only count on an absence of adverse interactions characteristic of maltreating families, they also rely on the presence of sensitive and responsive caregiving, which is often lacking in maltreating families. This disrupts normative developmental processes by introducing vulnerabilities which increase the likelihood of continued failure in successfully navigating subsequent stage-salient tasks (i.e., developmental cascade effects, Masten & Cicchetti, 2010). This continued failure to develop competence across domains results in larger failures to develop relevant competencies and has devastating implications for functioning across the lifespan.

Attachment theory, parenting behavior, and CEM. Attachment theory seems particularly relevant to investigations of CEM due to the fact that insecure attachment strategies are somewhat analogous to definitions of CEA and CEN, and might guide hypotheses regarding later outcomes. While specific parent-child attachment styles will not be examined here, it is useful to consider the parenting behaviors associated with each attachment style as well as the behavior these styles can elicit in children. Similar to emotionally-abusive parenting, caregiving marked by unpredictable or intrusive behaviors place infants at risk for developing *ambivalent* attachment strategies characterized by heightened levels of clinginess, anxiety, and anger in an effort to engage the caregiver (Adam, Gullar, & Tanaka, 2004; Lyons-Ruth, Bronfman & Parsons, 1999; Main & Hesse, 1990; Main et al., 1985; Riggs, 2010; van Ijzendoorn, 1995). Similar to emotionally-neglecting behaviors, dismissive caregivers reject infants' efforts to engage the caregiver during heightened states of arousal and distress. In response, infants are at risk for developing *avoidant* attachment behaviors which include indifference toward the caregiver and increased reliance on the self. An additional classification can be added to either of the insecure attachment styles described above. *Disorganized* attachment behaviors lack coherence, and include both avoidant and ambivalent strategies. A disorganized attachment strategy is associated with child maltreatment as well as several other challenges in the home (e.g., maternal fear of partner, frightening maternal behavior, maternal psychopathology, and alcohol abuse (Lyons-Ruth & Jacobvitz, 1999).

Attachment theory, self, and other. Self-concept arises from important caregiver-infant transactions from which the concept of self emerges (Sroufe, 1990). Through the lens of attachment theory (Bowlby, 1982), the infant's early caregiving experiences influence self-regulation, which impacts the child's emerging self-efficacy (through caregiver-assisted, successful navigation of novel environments and strong negative emotions) and self-worth (through the presence of a responsive, loving caregiver, especially during times of distress).

Through patterns of managing negative emotions with the help of responsive caregivers, children develop representational models (i.e., internal working models, IWMs) of self and other in the world. In the presence of responsive caregiving, children learn that environmental challenges and negative emotions can be dealt with successfully, and they therefore evince higher levels of exploratory behavior and environmental engagement (Sroufe & Fleeson, 1986). These children come to develop models that expect most environments to be safe and responsive to their needs, as well as the general belief that – even (eventually) in the absence of the caregiver – negative experiences and emotions can be managed successfully. In the absence of a sensitive and responsive caregiver, the child begins to view herself as unlovable, bad, and unworthy; in other words, a child develops poor self-esteem. An abundance of research has found that negative self-perceptions increase the risk for maladaptation and psychological distress (Liem & Boudewyn, 1999; Perry, DiLillo, & Peugh, 2007; Wright, 2007).

Attachment theory and emotion regulation. Because young infants have few resources for emotional experiences, reliance on dyadic regulation wherein caregivers are responsive to the infants' bids for attention is crucial for healthy socio-emotional development (Sroufe & Fleeson, 1986). Enduring parental qualities associated with insecure attachment (described above) include insensitivity, rejection, and intrusive behaviors. These behaviors are not only associated with the infant's development of insecure attachment strategies (Ainsworth et al., 1978; van Ijzendoorn, 1995), they also constitute behaviors which comprise definitions of CEM. In turn, insecure attachment strategies thwart healthy development of emotion regulation and the self-system (Cicchetti & Toth, 2000; Collins, Guichard, Ford, & Feeney, 2004).

Theoretical and empirical work show that children with insecure attachment strategies have difficulty tolerating emotion, which is hypothesized to owe to frightening early emotional experiences experienced as such because of the caregiver's inability or refusal to help the young child regulate emotion (Hesse & Main, 2006). Early unresponsive and/or emotionally abusive

caregiving sets in motion a series of failures in the development of children's emotional capacities, emotion regulation, and subsequent coping behaviors (Mikulincer & Florian, 2004; O'Hagan, 2006). Emotionally maltreated children have been observed to experience fewer emotions, which are dominated by negativity. Emotion understanding in emotionally-abused children is limited with regard to themselves as well as others (O'Hagan, 2006), which is projected to affect empathy development and social cue recognition, two important skills for successful interpersonal functioning.

Attachment theory across development. Probabilistically speaking, the parenting behaviors consistent with CEM would lead to disruptions in attachment status; however, there are several ways in which this assumption is flawed. First, the emotional demands of infants are much different from the emotional demands of a preschooler or teenager; therefore, one cannot assume that parenting remains constant (i.e., unresponsive) over time. For example, increasingly complex emotional demands on the caregiver may have been overwhelming, which resulted in the caregiver ceasing to respond to his/her child. Therefore, one cannot assume that such maltreatment took place during the early critical period for attachment. In fact, findings from the general maltreatment literature show that attachment orientation in the context of maltreatment is variable. One explanation that has received empirical support shows that children whose parents attempt to make repairs after negative parenting behavior fair better than their peers whose parents do not make reparation attempts. In fact, adults with a maltreatment history who also report generally having a warm and supportive relationship with their caregiver(s) are at decreased risk for psychosocial difficulties when compared to maltreating parents who do not make attempts to repair the parent-child relationship after serious parental transgressions (e.g., Wind & Silvern). Second, despite the lawfulness inherent in the notion that attachment orientation is somewhat of a self-fulfilling prophecy, the existence of mentors, coaches, teachers, friends' parents, and other relatives provide increased opportunities for caring and close

relationships that may contribute positively to early working models, even in circumstances of unfavorable parenting. The distal nature of the original attachment relationship leaves several opportunities for intervention when examining developmental trajectories of college students with a history of CEM.

Emerging adulthood. To reflect generational changes in developmental trends, Arnett (2000, 2001, 2006, 2007a, 2007b, 2007c) proposed a new development period, *Emerging Adulthood*, which is considered to be theoretically and empirically distinct from the stages it precedes (formal Adulthood) and follows (Adolescence). Emerging adulthood represents a more protracted period between adolescence and the tasks of adulthood (i.e., settling into long-term plans regarding work and intimate relationships; Schwartz, Cote, & Arnett, 2005). In particular, traditionally-aged college students face unique stressors, including adjustment to a more academically rigorous environment, increasing opportunities to engage in risky behavior due to lack of parental supervision, and navigating new and different types of relationships with roommates, peers, and friends.

Attachment theory, concepts of self and other, and emotion regulation. An individual's response to stress and new demands depends heavily on emotion regulation and self-system components, such as self-esteem and self-efficacy (or belief that one will be able to master new challenges). Both of these systems have developmental roots in childhood, which suggests that parental warmth is critical to optimal affect regulation (Field, 1994; Watson et al., 1992). CEM, however, is defined by a relationship wherein a primary caregiver is chronically emotionally hostile or unresponsive to the child's emotional needs. As such, examination of emotion understanding and regulation are particularly salient areas of inquiry in the context of CEM.

Attachment status and transition to, and functioning in, college. Findings emerging from the adult attachment literature in recent decades (Bowlby, 1982, 1988) support the notion that adult attachment styles predict transitional adjustment (Lopez, 1993; Lopez & Brennan,

2000). One study found that, as hypothesized, students with a preoccupied/anxious attachment orientation reported high levels of general stress during the college transition and tended to engage in more reactive coping strategies. Alternatively, students with avoidant/dismissive attachment orientations reported lower levels of distress and engaged in more suppressive coping styles. Both types of coping strategies employed by these insecurely-attached groups were less effective strategies than students who endorsed secure attachment orientations and engaged in more effective coping strategies, such as seeking social support (Lopez, Mauricio, Gormley, Simko, & Berger, 2001).

CEM and college student adjustment. Though few studies have examined CEM in undergraduate samples, prevalence statistics among female undergraduates from two recent studies ranged from 12.1% to 24.6% (Burns, Jackson, & Harding, 2010; Messman-Moore & Garrigus, 2007). The prevalence of CEA and CEN in another sample of approximately 300 college students was 29.9% and 24.3%, respectively (Shirley, 2012). These statistics suggest that as many as 1 in 4 students carry a history of CEM.

Studies of undergraduates have found that CEM is associated with a wide range of problems, such as anxiety (Briere & Runtz, 1988); depression (Briere & Runtz, 1988; Wright, Crawford, & Del Castillo, 2009); posttraumatic stress symptoms (e.g., dissociation, Briere & Runtz, 1988; Burns, Jackson, & Harding, 2010); somatization; substance abuse (Barker, 1998); poor body image and eating disorders (Hund, 2006; Hund & Espelage, 2006; Kent & Waller, 2000; Meston, Heiman, & Trapnell, 1999); low self-esteem and shame; anger, hostility, and aggression (Crawford & Wright, 2007; Loos & Alexander, 1997; Messman-Moore & Coates, 2007; Nicholas & Bieber, 1996); personality pathology (e.g., borderline personality, Kuo, Khoury, Metcalfe, Fitzpatrick, & Goodwill, 2015); difficulties with romantic and peer relationships (Berzenski & Yates, 2010; Crawford & Wright, 2007; Gay, Harding, Jackson, Burns, & Baker, 2007; emotional aggression in dating relationships, Milletich & Kelley, 2014;

Reyome, 2010; Riggs & Kaminski, 2010); and combinations of the aforementioned problems as well as higher levels of general distress (Braver et al., 1992; Briere & Runtz, 1988; Hoglund & Nichols, 1995; Hund & Espelage, 2006; Kent & Waller, 2000; Rekart, Mineka, Zinbarg, & Griffith, 2007; Sandberg & Lynn, 1992).

Overview of the Present Studies

This project begins by responding to ongoing debate in the maltreatment literature regarding subtypes of emotional maltreatment underlying a broad CEM construct. The APSAC definition previously described specifies five categories of CEM (spurning, terrorizing, isolating, exploiting and/or corrupting, denying emotional responsiveness, and mental health, medical, and educational neglect, APSAC, 1995). Most studies, however, fail to identify all five subtypes in their samples. Nash and colleagues (2005), in their examination of college students, have found only three of the five APSAC categories but also identified new categories reflecting demandingness and rigidity which may be specific to college student samples. Most studies (across varied sample types) examining the differential impacts of CEM subtypes have found meaningful differences across CEA and CEN subtypes (e.g., Wright, Crawford, & Del Castillo, 2009). Study 1, therefore, uses undergraduates' retrospective self-reports of parenting behaviors to examine whether several items selected to reflect CEA and CEN align with a hypothesized two-factor solution (CEA and CEN, rather than, e.g., a unitary construct).

It has been suggested that CEM describes, more than any other form of childhood maltreatment, a *relationship* rather than discrete incidents of abuse and/or neglect (Yates, 2007). In fact, writers have expressed confusion about the line differentiating emotionally maltreating parenting from "bad," but not necessarily harmful, parenting. Add to this the relative ease with which acts of physical and sexual abuse are often identified. Name-calling, for example, is a widely-known criterion of the CEM subtype, CEA. Yet, it seems easier to identify as abuse a situation in which a parent or caregiver physically harms a child a few times per year when

compared to a situation in which a parent calls a child names a few times per year. While the latter is not ideal, it may not incite the same responses of fear and helplessness as the former. As a result, there is even more debate in the literature (as opposed to other forms of child abuse and neglect) about whether to identify CEM by parental behaviors or by impact on the child (e.g., Baker, 2009). In order to differentiate emotionally maltreating parenting from other potentially pathogenic family processes, it is first imperative that we understand the context, at multiple ecological levels, in which CEM occurs. Thus, Study 2 examines similarities and differences in demographic, child, parent, and family characteristics and processes across CEA and CEN.

Finally, Roisman, Masten, Coatsworth, and Tellegen, 2004 identified five stage-salient developmental tasks of emerging adulthood, three of which are particularly relevant to a college environment: academic achievement, conduct, and social competence and friendship. Each of these areas has the potential to derail an individual's successful navigation of college with regard to the academic and/or socio-emotional building blocks for transition to adulthood. It has been noted that times of significant stress and transition best elicit deleterious consequences or maladaptive coping strategies. Thus, this is a particularly relevant and interesting time period in which to assess current functioning in light of retrospective reports of CEM. As previously mentioned, prevalence of CEM in university samples is particularly high. Additionally, the racial/ethnic (see Table 1) composition of the present sample presents a unique opportunity to examine self-report of past CEM experiences as well as current functioning on stage-salient domains of emerging adulthood across race/ethnicity. Further examined in Study 3 are potential mediators of the relationship between past CEM and current functioning. Based on the principles of developmental psychopathology and using an attachment framework (for details, see Study 3 Introduction), self-esteem, emotion regulation, and current ratings of parental attachment are hypothesized to be salient mediators of the relationship between CEM and current functioning.

Finally, while the retrospective and concurrent self-report data used in these analyses do not allow for causal claims to be made, hypotheses use a developmental psychopathology perspective when proposing expected associations.

Methods (Overall)

Participants

The sample comprises undergraduate students attending a large, west-coast university who participated in a larger study (N=2,637) of youth adjustment (Berzenski & Yates, 2010, 2012; Yates, 2012). Participants were recruited from psychology classes as described below. Participants who either failed to complete or completed fewer than 75% of items on measures used to determine childhood maltreatment (i.e., Family Background Questionnaire-Adult version, FBQ-A, n=136; Child Abuse and Trauma Scale, CATS, n=520; and/or Child Maltreatment Interview Schedule, CMIS, n=28) were excluded in all analyses, reducing eligible participants to 2,052 ($M_{age} = 19.12$ years, $SD = 1.48$). Students were predominantly female (63%) and ethnically/racially diverse, with 44.7% of respondents identifying as Asian, 27.0% as Hispanic, 13.6% as White, 5.7% as Black, and less than 1.0% as American Indian or Alaskan Native. Approximately 20% of students were born in countries outside of the United States. Participants were predominantly first-year students (56.1%), with 23.0% sophomores, 14.5% juniors, and 6.1% seniors. Half (50.5%) of respondents lived on campus at the time of questionnaire completion, with 27.9% living off-campus (not with relatives), and 19.0% living off-campus with relatives. The majority of participants were single at the time of questionnaire completion. The majority of participants were raised in two-parent households with their birth parents (80.8%), 10.4% lived with single parents, and the rest lived with relatives or foster/adoptive parents. Regarding parental education, 84.1% had at least one parent with a high school education, and 51.1% had at least one parent with a 4-year college and/or advanced college degree.

Procedure

Data used to examine aims of the present study were previously collected by Tuppert Yates, Ph.D. with approval of the Institutional Review Board at the University of California (Riverside). Certification for exemption (for secondary data analysis) from IRB Review for

Research Involving Human Subjects was obtained from the University of Minnesota, permitting use of these data in the present study (Appendix A). The original data collection procedures are described below:

The opportunity to participate in a study which sought to examine the relationship among adaptation in young adults and various experiences in childhood and adolescence was offered to introductory psychology students for class credit. Upon giving informed consent, individuals were given password-protected surveys which did not ask for any identifying information and were administered by a computerized survey management company. Responses were encrypted (until download) and identified only by a code number to further ensure data security and participant privacy. Participants completed the survey in private cubicles in a laboratory setting under the supervision of a trained research assistant. Participants were required to stay for the full 2-hour survey block to minimize incentives for speediness and to maximize the likelihood of accurate comprehension of, and response to, each item.

Analytic Approach

Data were analyzed using IBM Statistical Package for the Social Sciences (IBM SPSS Statistics version 22) and Analysis of Moment Structures (AMOS version 23). All variables/scales used for childhood emotional maltreatment (CEM) were coded less maltreatment (lower value) to more maltreatment (higher value).

In Study 1, the sample is randomly split into subsamples 1 and 2 (demographic information across subsamples can be found in Table 1). Exploratory factor analysis (EFA), a statistical procedure which examines the underlying factor structure of a set of items, is performed on subsample 1 to examine the factor structure of hypothesized childhood emotional abuse (CEA) and childhood emotional neglect (CEN) items. Confirmatory factor analysis (CFA), a statistical procedure which examines the associations among observed variables and their

underlying (latent) factors, is performed on subsample 2 to examine the model fit of the selected model based on EFA as well as theoretical and empirical findings on CEM.

Study 2 uses multinomial logistic regression, which is used when the outcome variable is categorical and predictors are continuous and/or categorical, to identify ecological correlates of different forms of CEM (i.e., CEA without CEN, CEN without CEA, both CEA and CEN, and no CEM), with a focus on family characteristics and processes.

Study 3 uses hierarchical multiple regression to examine the unique contributions of CEA and CEN to stage-salient developmental tasks of emerging adulthood for college students. Potential mediation effects of self-esteem, emotion regulation, and parent alienation on the association between CEM subtype(s) and stage-salient developmental tasks of emerging adulthood are explored.

Study 1: Childhood Emotional Maltreatment:

Childhood Emotional Abuse (CEA) and Childhood Emotional Neglect (CEN) Subtypes

Study 1 examines whether data support a two-factor structure of CEM comprising CEA and CEN.

Introduction

Findings regarding the prevalence and impact of CEM strongly support its continued study; however, efforts to increase understanding of CEM and its sequelae have been thwarted by unresolved methodological issues. Lack of agreement regarding conceptual and operational definitions has been particularly problematic with regard to generalizability and integration of findings. The aim of Study I is to examine the structure of CEM, testing a two-factor model of subtypes reflecting CEA and CEN.

An overly-general CEM definition is problematic if not all subtypes of CEM affect adjustment similarly, which is what past as well as emerging literature on CEM subtypes and its sequelae are demonstrating (e.g., Allen, 2008). In response to increasing recognition that CEM is a multifaceted construct, APSAC developed a five-factor model of CEM. Based on Hart and colleagues' (Hart, Brassard, Binggeli, & Davidson, 2002) widely-accepted definition of CEM, the APSAC sought to identify the subtypes comprising the CEM construct. In fact, the importance of the APSAC CEM model lies, at least in part, in its acknowledgment that very different caregiving behaviors are included under the general umbrella of CEM. For example, ongoing name-calling by caregivers and ongoing emotionally unresponsive caregiving represent qualitatively different experiences.

Despite the conceptual utility of the five-factor model, few studies have examined all five APSAC categories at the same time and empirical support for the differential impact of the APSAC subtypes is mixed (see Brassard & Donovan, 2006). Further, the five-factor model might lack ecological validity depending on the population under study. For example, factor analysis of

CEM components specific to a college student sample supported a four-factor (as opposed to the APSAC five-factor) model, which included a combined spurning/terrorizing factor, an emotional non-responsiveness factor, an exploiting/corrupting factor, and a newly emerging factor of demandingness/rigidity. An isolation factor was not identified (Nash, 2005).

Nash (2005) and others (e.g., DeRobertis, 2004; Schneider et al., 2005) underscore the fact that CEM subtypes may be more or less prevalent depending on sample characteristics (i.e., the extreme behaviors associated with isolation might not be found in a college-student sample, which might be presumed to be higher-functioning). These studies suggest that efforts might be better targeted to specifying CEM subtypes under study rather than seeking APSAC's five factors across sample types.

Some of the earliest work now retrospectively cited as investigations of CEM originate from the attachment tradition. For example, the Minnesota Mother-Child Project found differential impact of acts of commission (childhood emotional abuse, including a combination of the spurning and terrorizing categories from the APSAC model into one category, e.g., Nash, 2005) versus acts of omission (childhood emotional neglect, including the emotional non-responsiveness category from the APSAC model). Findings revealed that verbally-hostile parenting exacted very different consequences for children's psychosocial functioning than emotionally-unresponsive parenting (Egeland & Erickson, 1987).

Several studies support the use of two factors, defined by combinations of spurning and terrorizing on one hand, and emotional non-responsiveness on the other. One study factor analyzed the Psychological Maltreatment Rating Scale, which was constructed to reflect the APSAC five-category model of CEM, and found a two-factor solution comprising CEA and CEN (Brassard, Hart, & Hardy, 1993). Relevant to the present study, this has been a popular approach in investigations of college student samples (e.g., Briere, Godbout, & Runtz, 2012; Goldsmith &

Freyd, 2005; Gulec et al., 2013; Kaiser & Miller-Perrin, 2009; Paivio & McCulloch, 2004; Wright, Crawford, & Del Castillo, 2009).

The present study employed a two-factor approach to investigate the unique associations based on type of emotional maltreatment experienced. The two proposed factors included acts of omission (emotional non-responsiveness) and acts of commission (spurning). This was a departure from a growing trend to combine spurning and terrorizing based on factor analytic studies demonstrating their loading onto a single factor (e.g., Nash, 2005). Despite this, the difference between acts of spurning (e.g., My parents curse or swore at me) and acts of terrorizing (e.g., My parents put me in frightening situations) are fundamentally, albeit perhaps not functionally, distinct. In order to clarify the constructs under study, CEA was defined by acts of spurning only and CEN was defined by lack of responsiveness.

Study 1 Hypotheses

- 1) It is hypothesized that exploratory and confirmatory factor analysis of selected items will reflect experiences of CEN and CEA and will yield a two-factor solution representing latent CEN and CEA, with items selected to represent CEN loading onto a CEN factor and items selected to represent CEA loading onto a CEA factor. This is in contrast to all items converging to form a unitary construct, items not clustered as expected around CEN and CEA, or a multi-factor (3 or more factors) model comprising unanticipated additional factors.

Methods (Study 1)

Selecting CEM Items

Pre-existing subscales targeting CEA and CEN as well as a rational/intuitive approach were used to select items (four measures were examined; see below) based on APSAC definitions of spurning (CEA) and emotional non-responsiveness (CEN). Measures included in the present study have previously-established emotional maltreatment subscales (Child Abuse and Trauma Scale, CATS, Sanders & Becker-Lausen, 1995; Child Maltreatment Interview Schedule-Short Form, CMIS-SF, Briere, 1992) or subscales that conceptually relate to CEM (Family Background Questionnaire, FBQ). Each of these questionnaires contained items, whether included in subscale scores of CEM or not, relating to CEM subtypes under examination.

A literature search of publications related to CEM (examples of search terms: verbal abuse/ maltreatment, psychological abuse/ maltreatment, emotional abuse/ maltreatment, emotional neglect, emotional unavailability, caregiver unavailability/non-responsiveness) was performed. Additionally, Baker (2009) provides a summary of adult recall measures of CEM. CEM measures used in empirical papers in the last decade (since 2005) were cross-checked with Baker's (2009) measure list. Finally, measures containing separate items or subscales (see below) that had been used as indicators of CEA and/or CEN were reviewed.

First, measures with *items* reflecting CEA and CEM (generally) included: the *Family Experiences Questionnaire* (FEQ; Halberstadt, 1986), the *Child Abuse and Trauma Scale* (CATS; Sanders & Becker-Lausen, 1995), and the *Computer Assisted Maltreatment Inventory* (CAMI; DiLillo, DeGue, Kras, DiLoreto-Colgan, & Nash, 2006).

Second, measures with formal CEN and/or CEA *subscales* included: the *Childhood Trauma Questionnaire* (CTQ; Baker & Festinger, 2011; Baker & Maiorino, 2010; Bernstein & Fink, 1998; Bernstein et al., 1994), the *Life Experiences Questionnaire* (LEQ; Gibb et al., 2001), and the *Psychological Maltreatment Inventory* (PMI; Engels & Moisan, 1994).

Third, special attention was paid to measures based on the APSAC categories, which included the PMI and the CAMI. Desired items were those reflecting APSAC categories of spurning and emotional non-responsiveness. Therefore, the PMI and CAMI items in these areas were of particular interest while reviewing methods of assessing CEM and its subtypes. Dataset measures included in the present study are the CATS, CMIS-SF, and FBQ-B, and items from these three measures were examined for (1) their similarity to items on the PMI and CAMI and/or (2) their relation to APSAC definitions of spurning or emotional non-responsiveness.

The current investigation used the CATS CEA scale and the FBQ-B Parental Responsiveness Scale, which-when reverse scored-reflects experiences of CEN, to examine discriminant validity of CEA and CEN subtypes of CEM (see Table 2).

Measures

Child Abuse and Trauma Scale (CATS; Sanders & Giolas, 1991). The CATS is a 38-item measure designed to assess subjective memories of adults' child abuse and maltreatment experiences. The instrument title (participants see) is, "Home Environment Questionnaire," and instructions request respondents to indicate general atmosphere of their home when children or adolescents. Responses are given on a 5-point, Likert-type scale and range from *never* to *always*. A higher score indicates higher levels of maltreatment, and subscale scores are created by averaging items assigned to a particular subscale. Seven CATS items were identified in a subsequent article by Kent and Waller (1998) as constituting a separate emotional abuse scale (see items below). Respondents report on their experiences with both parents combined during their childhood and adolescence. Items are rated on a 5-point Likert-type scale from never (0) to always (4), with total scores ranging from 0 (a score of never, 0, on all 7 items) to a score of 28 (a score of always, 4, on all 7 items). In Kent and Waller's (1998) validation study, 236 female undergraduates completed the measure, resulting in an alpha of .88. The mean score for the emotional abuse scale was .83 (SD=.86). Although over 30 articles cite Kent and Waller (1998),

only a few actually employ the emotional abuse scale of the CATS. For example, Kennedy, Ip, Samra, and Gorzalka (2007) reported that emotional abuse had a direct effect on the disordered eating in a sample of college students. In that study, the mean score for the 7-item psychological abuse scale was 1.14 (SD=.69). The CATS is a widely used measure, although utilization of the emotional abuse subscale is much less common and there is no cut-off to differentiate maltreated from non-maltreated samples.

The CATS emotional abuse subscale includes the following items: Did your parents ever ridicule you?; Did your parents insult you or call you names?; As a child or teenager did you feel disliked by either of your parents?; How often did your parents get really angry with you?; Did your parents ever lash out at you when you did not expect it?; Did your parents yell at you?; Did your parents blame you for things you didn't do?

Family Background Questionnaire-Brief (FBQ-B; Melchert & Kalemeera, 2009). The Mother, Father, and Total Responsiveness Scales of the FBQ-B were administered in the present study. The FBQ-B comprises combined Parental Responsiveness (i.e., reliable support, interest, understanding, sensitivity, and attentive listening versus emotional neglect) and Parental Acceptance (respect, loving approval, and acceptance versus emotional abuse) Subscales from the original FBQ (Melchert & Sayger, 1998). The FBQ-B combines the Parental Responsiveness and Parental Acceptance Subscales into a single Parental Responsiveness Subscale (comprising all items from the FBQ Parental Responsiveness and Parental Acceptance Subscales), resulting in an FBQ-B Responsiveness Scale comprising 34 items which yield Mother Responsiveness, Father Responsiveness, and Total Responsiveness scores. The FBQ-B Responsiveness Scale represents psychological maltreatment at the low end of the continuum (combined emotional abuse and emotional neglect) and warm and sensitive approval, attentive listening, and support at the high end. Each item is rated on a 4-point scale, from (1=Almost Never) to (5=Almost Always). Alpha coefficients for the present sample were excellent for mother (alpha=.88), father (alpha=.89), and

total (.92) ratings. Mother and father ratings were highly correlated ($r=.667$, $p<.001$). Items included in present analyses are average scores of mother and father ratings as no significant differences were found between mother and father ratings.

Analytic Approach

Exploratory and confirmatory factor analyses were performed to observe the latent variable model that emerges for the CEM items selected. Here, maximum likelihood factor analyses were used (rather than, e.g., principal components analysis) owing to project goals of demonstrating differences among CEM subtypes and modeling associations among items rather than data reduction (Walker, 2014). EFA, in particular, analyzes the factors' ability to explain variation among items and generates a model to account for the largest amount of *common variance*, or communality. There are three types of variance in FA, with common variance/communality just mentioned, uniqueness (variance specific to a particular item), and error variance. The present investigation uses FA in a practical exercise, with the goal of determining whether FA will yield a factor structure of items that is consistent with the theoretical and empirical literature (i.e., distinct categories of CEA and CEN). The first analysis casts the widest net, such that exploratory factor analysis is performed in the absence of a priori constraints (i.e., specifying the number of factors in the model solution) because there is disagreement in the literature regarding subtypes of CEM. Confirmatory factor analysis will be performed under the a priori specification of a two-factor solution. Here, empirical analysis of an underlying latent structure of the items under study, which were hypothesized to function as observed indicators of the CEA and CEN latent constructs, is more directly examined.

A large sample allows for testing separate models on subsamples of the dataset. Two (randomly-split) subsamples were used in exploratory factor analyses to examine fit and structure of models. Subsamples are compared on important demographic characteristics (e.g., CEM subtypes, age, sex). Analyses will exclude cases listwise to prevent over-estimation of factors due

to the large size of the dataset (and especially due to use of oblique rotation method; Yong & Pearce, 2013).

Exploratory factor analysis. Subsample 1 (see Table 1) is used for EFA.

Assumptions of factor analysis. There are several assumptions underlying factor analysis (FA), which must be met in order for data to be suitable for FA. Assumptions include (A1) proper model specification (i.e., absence of irrelevant variables or exclusion of relevant variables), (A2) adequate sample size, (A3) interval-level measurement data, with exception for approximately-interval level data of some Likert type scales, (A4) normal distribution of data, and (A5) significant inter-correlation among variables of interest (Whitley, Kite, & Adams, 2012).

To examine (A1) proper model specification, the zero-order correlation table will be inspected. Appropriate items are those which correlate with most other items at .30 or higher (Tabachnick & Fidell, 2007), though Hair, Anderson, Tatham, and Black (1995) deem $|.30|$ to be minimal, $|.40|$ to be important, and $|.50|$ to be practically significant in evaluating intercorrelations among items.

Several recommendations regarding (A2) sample size are documented in the literature to ensure adequate statistical power. Mitchell (1993) proposed that there be 10 to 20 times as many cases as there are variables. Another rule of thumb states that there must be at least 15 cases per measured variable (i.e., indicators; Stevens, 2002). Finally, the Kaiser-Meyer-Olkin (KMO; Kaiser, 1970) measure of sampling adequacy will be performed to evaluate the adequacy of sample size for factor analysis. The KMO statistic, which is a summary of the size of partial correlations relative to the original zero-order correlations, ranges from 0 to 1 with high values (.5 to 1.0, but ideally above .7, Kaiser, 1974; Field, 2009) indicating an adequate sample size overall for factor analysis and low values (below .5) indicating an inadequate sample size overall. The Measures of Sampling Adequacy (MSA) values are a measure of sampling adequacy for each item pair and are located on the *diagonal* of the anti-image correlation matrix. Examination of the

anti-image correlation matrix *diagonal* values (small values, i.e., below .50, may support a variable's elimination) can assist with determining which variables are problematic owing to inadequate sample size. Support for adequate sample size occurs when diagonal values exceed .5 and the KMO statistic is close to 1.0 (Cerner & Kaiser, 1977; Dziuban & Shirkey, 1974).

The (A3) level of measurement for items included in factor analyses are reported below (see Results).

With regard to (A4) the assumption of multivariate normality, converging evidence from visual inspection of distribution shape via normal quantile-quantile (Q-Q) plots and the Kolmogorov-Smirnov (KS; Chakravarti, Laha, & Roy, 1967) test (rather than the more popular Shapiro-Wilk test due to large sample size, i.e., above 50) will be examined. Fabrigar, Wegener, MacCallum, and Strahan (1999) explored the limits of the multivariate normality assumption and demonstrated that variables with skew < 3 and/or kurtosis < 8 do not pose problems in factor analysis and can be regarded as normally distributed (i.e., Maximum Likelihood extraction can be used; see Model Specifications below).

To examine (A5) intercorrelations among variables, Bartlett's Test of Sphericity (Bartlett, 1954) will be conducted and the anti-image correlation matrix will be explored. Bartlett's tests the null hypothesis that items are uncorrelated in the population. If this hypothesis cannot be rejected (i.e., if this statistic is non-significant), factor analysis may not be appropriate. If the statistic is significant, this indicates that data are suitably intercorrelated to move forward with factor analysis. To be suitable for factor analysis, it is recommended that the item intercorrelation matrix be inspected and that items should correlate at no less than .30. While variables under study should be intercorrelated, very high intercorrelations might predict a single factor structure or problematic multicollinearity. Cohen's (1988) guidelines include designations for moderate ($.30 > r < .40$), moderate-to-strong ($.40 > r > .50$), and strong ($> .50$) associations. Multicollinearity, or very high correlations among items, can compromise the validity of factor analysis but will not be

of concern here unless most correlations are very high (i.e., Cohen's "strong" designation). While it is hypothesized that separate latent CEA and CEN variables will emerge through factor analysis, high correlations among CEA and CEN items will be expected and may reflect high co-occurrence among CEM subtypes. The anti-image correlation matrix contains the degree of association between variable pairs when other variables are held constant. Low (i.e., close to 0) *off-diagonal* values, which are partial correlation among item pairs multiplied by -0.1 , provide support for factorability of data.

Model specification. Based on data characteristics, EFA model specifications in factor extraction and rotation differ. With regard to *Factor Extraction Method*, *Maximum Likelihood* (ML; Lawley, 1940) is considered the preferred extraction method (Fabrigar, Wegener, MacCallum, & Strahan, 1999; Costello & Osborne, 2005) when data are normally distributed. Maximum Likelihood is the preferred method of factor extraction as it has several indexes of goodness of fit, allows for significance testing of factor loadings, permits correlations among factors, and yields confidence intervals. Further, ML results can be generalized beyond the sample under study as, unlike principal component analysis, fails to assume that variables are measured with perfect reliability (Thompson, 2004).

Rotation. Rotation refers to shifting the factors' axes in order to reveal factors' simple structure and to maximize a group of variables' loading on a given factor; prior to rotation, variables may seem to load on more factors owing simply to the position from which they are viewed. Oblique rotation is preferred to orthogonal rotation because correlation among factors comprising data from the social sciences is expected to some extent. Orthogonal rotation, though popular (e.g., varimax), yields uncorrelated factors, and it is argued that orthogonal methods of rotation can result in loss of valuable information if factors are, in fact, correlated (Costello & Osborne, 2005). Oblique methods include Direct Quartimin (unavailable in SPSS), Direct

Oblimin, and Promax. It is reported that one is not favored among the others, and that all three produce similar results. *Direct oblimin* is used in the present investigation.

Oblique rotation considers the relationship among factors when ascertaining an item's relationship to a particular factor and therefore produces several matrices, including a *factor correlation matrix* (i.e., matrix of correlations among all factors) and a *loading matrix* comprising a *structure matrix* (i.e., both unique and shared variance among items and factors) and a *pattern matrix* (i.e., unique relationship of each item to its factor with the variance of other factors controlled; scores referred to as *loadings*). Interpretation of factors is generally based on loadings revealed in the pattern matrix because it reflects only the unique contribution an item brings to a factor (Pedhazure & Schmelkin, 1991); however, due to strong, positive correlations among maltreatment subtypes (e.g., Manly, Kim, Rogosch, & Cicchetti, 2001), and suspicion of strong, positive correlations among CEM subtypes (e.g., correlation between physical/emotional abuse and emotional neglect, $r = .58$, Bernstein et al., 1994), shared variance documented in the structure matrix may be of interest.

Evaluation of exploratory factor analysis. There are generally four methods for determining factor retention and interpretation. It is common practice to retain factors with (R1) eigenvalues greater than 1.0 (i.e., Kaiser's rule; Kaiser, 1960). An eigenvalue is the amount of variance explained by a particular factor. There is consensus, however, in the statistical literature that this method is highly inaccurate (Velicer & Jackson, 1990). Suggested tests for factor retention include Velicer's MAP criteria, parallel analysis, and (R2) scree tests (Costello & Osborne, 2005). While the first two methods are not included in most statistical packages, Cattell's scree test (Cattell, 1966; Zwick & Velicer, 1986) is accurate and included in all statistical packages. The scree test involves examination of graphed eigenvalues in order to determine the "natural bend" or "break point" in the data where the curve flattens; the number of data points above this "break" (not including the "break point") typically reflects the number of

factors to be retained. Factors constituting the flattened part of the plot (i.e., the scree at the base of the mountain) are discarded as they fail to explain a substantial proportion of common variance (DeVellis, 2003). Another approach to factor retention is (R3) to retain those factors which account for a percentage of total variance. Retaining enough factors to account for 70% of the total variability is common (Stevens, 1992). Finally, model fit is sometimes assessed, which involves comparing reproduced correlations to observed correlations and examining the number of difference scores exceeding a $|0.05|$.

Communalities, which range from 0.0 to 1.0, represent the common variance among variables (i.e., the amount of item variance accounted for by the factor structure) and can be regarded as conservative estimates of an item's reliability; however, low values are not evidence of poor fit – rather, this is evidence that an item has little in common with other items (initial) or factors (extracted). In the *initial* column of the communality table, communalities reflect all variables and there are as many factors as there are variables included; in the extracted column, communalities use only factors with Eigenvalues greater than 1. A communality value of 1.0 would indicate that the factor solution accounts for all variance of a given variable, and said variable does not have any unique variance. On the other hand, a communality value of 0.0 would indicate that a variable does not have any common variance and the factor solution accounts for none of the variable's variance (Thompson, 2004). Communalities regarded as “high” are ones that are .80 or greater (Velicer & Fava, 1998); however, data in the social sciences typically reveal communalities of .40 to .70 (Costello & Osborne, 2005). Items with communality values less than .40 may reflect lack of relatedness to other items or may reflect presence of an additional factor.

Researchers must ultimately apply empirical and theoretical knowledge to determine whether to retain or discard an item from analysis (Beavers, Lounsbury, Richards, Huck, Skolits, & Esquivel, 2013); however, some rules of thumb do exist and are generally applied. If an item's

loading (on the pattern matrix, in the current study) is .70 or higher (according to Garson, 2010) or .50 (according to Guadagnoli & Velicer, 1988), it is generally retained as long as it does not crossload onto another factor with a value of .40 or higher (Garson, 2010). Comrey and Lee's (1992) guidelines specify > .70 as excellent, > .63 as very good, > .55 as good, < .45 as fair, and > .32 to be poor. There is some debate in the literature about what constitutes a significant crossloading, with Tabachnick and Fidell (2001) suggesting that a crossloading item is one whose communality value is .32 (i.e., roughly 10% overlapping variance with factor's other items) or greater on two or more factors. Again, researchers must employ empirical and theoretical knowledge to determine whether to retain or discard the item from analysis. Dropping the item is suggested if there are several items with high (i.e., .50) communality values. Several crossloading items may reflect poorly-written items or inaccuracy in the researcher's a priori conceptualization of the factor structure (Costello & Osborne, 2005). Strong factors generally have five or more items with strong loadings. Weak factors, on the other hand, generally have fewer than three items and are considered unstable (Costello & Osborne, 2005). Finally, the factor correlation matrix shows whether the factors are independent or related.

The chi-square (χ^2) goodness-of-fit test of the model's adequacy is often used and tests the null hypothesis that the model adequately accounts for the data. One major problem with this test is that it is very sensitive to sample size, such that large sample size (such as the one in the present study) generally leads to rejection of the null hypothesis (Fabrigar & Wegener, 2012). Owing to the large sample size in the present study, the chi-square goodness-of-fit statistic will not be reported.

Confirmatory factor analysis. Confirmatory factor analysis (CFA) was conducted on Subsample 2 (n=992) to confirm model fit of the theoretically- and empirically-supported EFA two-factor solution (see Figure 2). Two latent variables, based on the two factors (CEA and CEN) extracted in EFA, were used in CFA. CFA used maximum likelihood estimation.

The chi-square (χ^2) statistic, which reflects the discrepancy between original and estimated covariance matrices, suggests adequate model fit when non-significant; however, a non-significant chi-square statistic is rarely achieved with larger samples sizes (Byrne, 2001), such as the one used in the present investigation. Due to the chi-square statistic's sensitivity to sample size, other criteria will be used to assess model fit. The relative chi-square (CMIN/DF), the chi-square fit index divided by degrees of freedom, decreases the effect of sample size on the chi-square statistics. Acceptable fit between the model and sample data is indicated when the CMIN/DF is below 3 and, in some cases, below 5 (Marsh & Hocevar, 1985); however, large sample size still exerts its influence and, therefore, the CMIN/DF should not be used by itself to determine adequate model fit.

Goodness of fit will therefore be multiply determined using relative (CFI, NNFI), parsimony-based (PCFI, likelihood-ratio (χ^2 / df), and absolute (RMSEA) fit indices. The Comparative Fit Index (CFI; Bentler, 1990) is derived from comparison of the hypothesized model to one that contains unrelated variables (i.e., independence model; Byrne, 2001) and is independent of sample size. CFI values range from 0 to 1, with values exceeding .90 indicating adequate fit and values exceeding .95 indicating superior fit (Kline, 2010; Hu & Bentler, 1998). The Non-Normed Fit Index (NNFI, also called the Tucker-Lewis Index, TLI) specifies the practical fit of the data to the hypothesized model. It is another index that compares the hypothesized model with one containing unrelated variables. It is insensitive to sample size and has been improved from its original form (Normed Fit Index, NFI) to include a correction for model complexity so that parsimony is rewarded. An NNFI value of 1.0 indicates perfect fit, while values above .90 are considered acceptable and values above .95 are considered good. A high Parsimony Comparative Fit Index (PCFI) is associated with the model of best fit (i.e., most parsimonious model). Data that fit the model tend to yield PCFI values close to 1, and studies have used a minimum PCFI value of .50 though anecdotal evidence suggests a value of at least

.80. The Root Mean Square Error of Approximation (RMSEA) is regarded as one of the most informative absolute measures of model fit and takes into account both sample size and model complexity (Byrne, 2001), expressing fit per degree of freedom. The RMSEA examines the fit of the estimated parameters to a hypothesized population covariance matrix. A RMSEA value of 0.0 indicates exact fit and values less than .05 to .08 have been considered indicative of adequate-to-good fit (Browne & Cudeck, 1993; Joreskog & Sorbom, 1996), with many following the guideline of .06 (Hu & Bentler, 1995; Hu & Bentler, 1999). The p-value for RMSEA (termed PCLOSE) tests the null hypothesis that the RMSEA does not exceed .05; thus, PCLOSE values less than .05 suggest rejecting the null hypothesis and concluding lack of adequate fit of the hypothesized model. One limitation of the RMSEA is its lack of consideration of model complexity; while the CFI value is penalized for unnecessarily complex models, the RMSEA value is improved with model complexity, whether it is accurately or unnecessarily complex.

Possible improvements to model fit will be considered via examination of standardized regression weights (i.e., factor loadings), with those below 0.6 being considered unacceptable and, ideally, factor loadings will be .70 or higher. Items with factor loadings below 0.6 will be considered for deletion. Modification Indices include inspection of covariance between errors on a single factor and, if high, they can be associated (if methodologically linked).

Reliability analysis and CEM composite scores. Cronbach's alpha (α) is a measure of internal consistency (i.e., the degree to which items measure the same underlying construct) and ranges from 0 to 1, which higher values indicating greater reliability. Here, cronbach's alpha is calculated after factor analysis to determine the cohesion of items selected for the CEA and CEN composite variables. Nunnally (1978) recommends a minimum Cronbach's alpha coefficient of .7 for items to be considered adequate in examining the same underlying construct.

Items are coded so that smaller values represent fewer maltreatment experiences and larger values represent more maltreatment experiences. Items will be summed to create composite variables.

Results (Study 1)

Exploratory Factor Analysis

EFA was performed on subsample 1 (see Table 1). In order to examine associations among items for proper model specification (A1), inspection of the correlation matrix revealed that correlations of two items (FBQ19/20, My mother/father ignored me as long as I didn't do anything to bother her/him, and FBQ31/32, My mother/father made me feel like I would not be loved anymore if I did not behave) were all under the well-recognized cut-off of .3 and over half of another item (FBQ29/30, When I was emotionally upset, I talked with my mother/father about it) were below .3 (Tabachnick & Fidell, 2007; i.e., Factorability of R , or the correlation matrix). These items were therefore removed from the analysis. One item was removed (FBQ33/34 My mother/father was emotionally _____.) owing to 33.4% missing responses.

The current study used 14 items in factor analysis on subsample 1. Conservative estimates of the (A2) size of the subsamples on which factor analysis was performed was over 125 cases per item, which far exceeds previously-identified case-per-measure rules. While mild skew and kurtosis are acceptable for data to be considered normal for FA (see A4 below), a large sample size may serve to protect against problems encountered with non-normal data. Kline (2005) suggests that researchers exceed minimum sample size recommendations when data are not normally distributed. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy ranges from 0 to 1, with values closer to 1 indicating that data are acceptable for factor analysis. The KMO for subsample 1 with 15 items was .946.

The items used in these factor analyses are measured with Likert-type scales (A3) and can be found in Table 2.

Next, all Kolmogorov-Smirnov (KS; Chakravarti et al., 1967) tests were statistically significant (D ranging from .125 to .343, $p < .001$), indicating absence of multivariate normality (A4); however, examination of item quantile-quantile plots and skewness and kurtosis statistics

revealed values within acceptable range for meeting the assumption of multivariate normality for factor analysis (i.e., skew < 3 and/or kurtosis < 8; Fabrigar et al., 1999). It is important to mention that these statistics are somewhat less relevant and more difficult to apply owing to the Likert-type scales participants used to provide responses.

Bartlett's Test of Sphericity (Bartlett, 1954) was found to be significant ($X^2(105) = 7525.382, p < .001$), and items are therefore significantly intercorrelated (A5) (See Table 3 for the Pearson product-moment bivariate correlation matrix). Upon inspection of the correlation matrix of 15 CEM items, 5 items (CATS19 As a child, did you feel disliked by either of your parents?; CATS20 How often did your parents get really angry with you?; CATS25 Did your parents ever verbally lash out at you when you did not expect it?; CATS28 Did your parents yell at you?; CATS32 Did your parents blame you for things you did not do?) have correlations below the cut-off of .3, but are retained because most (11-13 of 14 total correlations) exceed the designated cut-off of .3. Further, all anti-image correlation matrix (see Table 4) off-diagonal values are close to 0 (-.416 to .101), i.e., under .5, and all diagonal values exceed .5 (all values exceed .90), thus supporting the inclusion of all items under study. This high level of intercorrelation among items is expected given the co-occurrence of CEM subtypes.

Exploratory factor analysis comprised 14 items representing CEA and CEN. Examination of (R1) initial eigenvalues (see Table 5) greater than 1.00 show that, prior to extraction and rotation, factor 1 explained 48.4% of the variance and factor 2 explained 11.8% of the variance for a total of 60.2% of variance explained. After extraction and considering only factors with eigenvalues greater than 1.00, factor 1 explained 45.0% of the variance and factor 2 explained 8.8% of the variance, for a total of 53.7% of variance explained. After extraction and rotation, factor 1 accounted for 5.6% of the variance and factor 2 accounted for 5.1% of the variance. Next, examination of the (R2) scree plot (see Figure 1) also supported a two-factor solution. The first factor's magnitude is greater than the second, and at the third (which marks the

first eigenvalue under 1.00) begins to level off with subsequent eigenvalues smaller than 1.00. Thus, interpretation of factors beyond the second is not recommended. Additionally, examination of the reproduced correlation matrix of residuals (difference scores between reproduced correlations, i.e., correlations assuming that the model represents reality, and observed correlations) reveals only 3 (of 181) difference score exceeding .05. Thus, the two-factor solution, which explains (R3) 53.7% of the variance, is favored owing to theoretical and empirical support, interpretation of only eigenvalues greater than 1.0, and leveling off of eigenvalues after two factors on the scree plot. Though it is ideal for solutions to extract 70% - 90% of variance (Garson, 2010; Pett et al., 2003; Stevens, 1992), 50% or more is acceptable (Beavers et al., 2013).

In the present study, communalities were derived from 25 iterations. Communalities (see Table 6) ranged from .372 (CATS32 Did your parents blame you for things you didn't do?) to .748 (FBQ3/4 My mother/father would support and comfort me when I needed it) with the former just below the general 0.4 cut-off and the latter regarded as "high." All others ranged from .408 to .679, consistent with the .40 to .70 range typically observed in the social sciences (Costello & Osborne, 2005). The pattern matrix (see Table 7), which controls for shared variance between the factors, shows loadings to exceed both high designations (0.30 – 0.59; 2 of 14) and even very high designations (> 0.60; 12 of 14) and does not have any item loadings to consider removing from analyses (< 0.30). Of note, items group fairly neatly onto two factors when shared variance is controlled (see Pattern Matrix) with no crossloading between factors. The factor correlation matrix (see Table 9) reveals that the two factors are correlated ($r = .641$), with correlation coefficients exceeding .3 being regarded as closely associated. Again, theoretical and empirical sources support this as co-occurrence of CEM subtypes is high. The two-factor structure, representing CEA (7 items) and CEN (7 items), is consistent with the APSAC categories of CEA (i.e., spurning and terrorizing) and CEN (i.e., emotional non-responsiveness). Cronbach's alpha for the 7 items determined through factor analysis to represent CEA ($\alpha = .870$) and for the 7 items

determined through factor analysis to represent CEN ($\alpha = .910$) exceeds Nunnally's (1978) threshold of .7.

Confirmatory Factor Analysis

CFA was performed on subsample 2 (see Table 1). Model 1 (see Figure 2) examined the two-factor model supported by EFA comprising 14 items, with 7 items representing CEA and 7 items representing CEN. Owing to methodological considerations (e.g., reverse-coded items, similarly-worded items), error covariance was allowed between two of the CEA items and two of the CEN items. Inspection of standardized regression weights (i.e., factor loadings) ranged from .63 to .75 for CEA items and .70 to .88 for CEN items, with weights greater than 0.6 regarded as generally acceptable (Hair et al., 2006; i.e., good indicators of the latent construct under study). The squared multiple correlation coefficients (R^2) show that the latent CEA construct accounts for 39 (CATS1 Did your parents ridicule you?) to 57 (CATS8 Did your parents insult you or call you names?) percent of the variance in its items and the latent CEN construct accounts for 49 (FBQ9/10 When I was obviously sick or injured, my mother/father was caring and comforting, reverse coded) to 78 (FBQ3/4 My mother/father would support and comfort me when I needed it, reverse coded) percent of the variance in its items. As expected, the CEA and CEN latent variables are correlated ($r = .67$); however, multicollinearity is not of concern since the correlation did not exceed .85.

Owing to the large sample size in the present study, it is unsurprising that the chi-square and relative chi-square statistics were significant (suggesting that one reject the null hypothesis that the model is consistent with the pattern of covariation among the observed variables) as both are sensitive to sample size. The next reviewed fit index is CFI, which deems the model to be of superior fit with a value of .966. The NNFI (a.k.a., TLI, .958) and PCFI (.785), fit indices independent of sample size and sensitive to parsimony, also support the hypothesized model, though a larger PCFI is desirable. Finally, the RMSEA (.059) is adequate (though it would

preferably be below .05), and the RMSEA's associated PCLOSE value ($<.001$) unfortunately does not exceed .05.

Inspection of error covariance values demonstrated large values among several items on each of the factors and were therefore allowed to covary in the model. As expected, the edited model's regression weights still exceed .60 as no items were removed for falling below this criterion. The CFI, with a value of .979, as did the NNFI, with a value of .973. The PCFI, however, decreased from .785 to .753, suggesting the model is potentially overly complicated (i.e., could be more parsimonious). The RMSEA also improved, from a .054 to a .047 with a PCLOSE value of .857 (which now exceeds .05). See Table 2 for final items selected for CEA and CEN composite scores, each comprising 7 items.

Study 2: Ecological correlates of Childhood Emotional Neglect (CEN) and Childhood Emotional Abuse (CEA)

Study 2 examines associations among self-report of past family, parenting, and demographic characteristics and self-reports of childhood emotional maltreatment.

Introduction

There was growing interest among child development experts in the 1970s to integrate disparate findings related to correlates and consequences of child maltreatment into an overarching framework for understanding the process through which child maltreatment occurs and exacts deleterious effects on children's development. Belsky (1980) drew on Bronfenbrenner's (1979) ecological model and described the deleterious consequences of childhood maltreatment as the result of interactions among several nested systems (i.e., microsystem, comprising child's family environment; exosystem, comprising larger social systems in which the family is embedded; and macrosystem, comprising overarching cultural beliefs and values impacting the microsystem and exosystem). Belsky included in his model Tinbergen's description of a parent's ontogenetic development (i.e., individual differences parents bring to childrearing) as it relates to the development of a parent's use of abusive behaviors toward their children. Belsky (1993) describes risk factors at each ecological level as *potentially* causative, acknowledging both that no condition guarantees the presence of child maltreatment and that maltreatment arises from complex *interactions at multiple* ecological levels.

Cicchetti and Lynch's (1993) ecological-transactional developmental model of child maltreatment is arguably the most notable and one of the most successful efforts to delineate the patterns of multi-level interactions among potentiating (i.e., risk) and compensatory (i.e., protective) factors that influence both the occurrence of child maltreatment as well as its impact on child development. For example, Cicchetti and Lynch's (1995) testing of this model revealed

that children of low SES who lived in violent neighborhoods were more likely to have experienced physical abuse and severe neglect than their counterparts of low SES who lived in non-violent or less violent neighborhoods. Neglect severity (notably an enduring, proximal factor in the microsystem) in combination with community violence (a more distal, enduring factor) reliably predicted higher levels of internalizing disorders, traumatic stress symptoms, and low self-esteem. Cicchetti and Lynch (1995) thus provide support for their assertion that child maltreatment arises from, for example, enduring, community-level potentiating (i.e., risk) factors (e.g., violence, low levels of community resources, social isolation) interacting with family-level factors (e.g., parental stress due to economic hardship) to influence the likelihood of child maltreatment.

Ecological-transactional models have provided an important framework for empirical efforts in recent decades to target the processes and multiple pathways through which child maltreatment arises and exacts its deleterious outcomes on child development. Empirical investigations of contextual correlates abound for sexual abuse and, to a lesser extent, physical abuse and include other (non-maltreatment) factors potentially influencing child outcomes, with the influence of family environment and parenting qualities outside of maltreatment behaviors being of particular interest to investigators (for review, see Draucker, 1996; Hulseley, Sexton, & Nash, 1992) owing to the conceptualization of proximal environmental factors (i.e., microsystem) in most cases most directly influencing child outcomes (Cicchetti & Lynch, 1993, 1995).

While the current endeavor seeks to examine correlates from each ecological level as CEM has received much less attention in the empirical literature than other forms of childhood maltreatment, emphasis is placed on the family environment associated with CEM subtypes in order to better understand the direct context in which this form of maltreatment occurs. As previously mentioned, several studies show that child maltreatment tends to occur within a larger framework of existing family dysfunction (Cash & Wilke, 2003; Dong et al., 2004; Harter &

Vanecek, 2000; Myers, Berliner, Briere, Hendrix, Jenny, & Reid, 2002) and stress (Cicchetti & Lynch, 1995; Milner & Chilamkurti, 1991). In fact, debate continues regarding whether it is the deleterious outcomes associated with child maltreatment, itself, or the backdrop of parenting and family characteristics and processes that best account for these outcomes (e.g., Briere & Elliott, 1993; Finkelhor, 1979; Higgins & McCabe, 1994; Paveza, 1988). It will also be useful to use studies such as the present one to examine the ecological correlates of CEM in comparison to other forms of maltreatment and studies documenting ecological correlates associated with general (i.e., unspecified) maltreatment experiences in childhood in order to better understand how it may arise and how it may be intervened upon and ameliorated.

A robust literature documents the generally higher levels of negative expressed emotion in relationships and in general in households where child maltreatment occurs. Studies have shown that maltreating mothers are more negative and harsh with their children than non-maltreating mothers (Crittenden, 1981, 1985; Mash, Johnson, & Kovitz, 1983; Wasserman, Green, & Rhianon, 1983). Maltreating families, in general, have been found to be more likely to express anger and aggression. Further, conflict among family members (Fassler, Amodeo, Griffin, Clay, & Ellis, 2005; Glaser, Sayger, & Horne, 1993; Griffin & Amodeo, 2010; Long & Jackson, 1991; Mollerstrom, Patchner, & Milner, 1992; Straus & Gelles, 1990; Wolfe, 1985) and between parents (in two-parent households; Bolton & Bolton, 1987) tends to be significantly higher than levels of conflict in non-maltreating families.

There are several ways in which problem-solving and authentic emotional expression are thwarted in maltreating families. Parents in maltreating families are more likely to engage in ineffective parenting strategies (Hansen, Pallotta, Tishelman, Conaway, & MacMillan, 1989), especially with regard to discipline (Reid, Taplin, & Lorber, 1981; Rogosch et al., 1995). It has also been found that maltreating parents interact less with their children and, as stated above, engage in more negative interactions with their children than non-maltreating parents (Bousha &

Twentyman, 1984; Burgess & Conger, 1978; Milner & Chilamkurti, 1991; Reid et al., 1981; Schindler & Arkowitz, 1986). With regard to problem-solving, maltreating families are less verbal during conflict resolution (Cohn, Silver, Cowan, Cowan, & Pearson, 1992). Members of maltreating families are less likely to express their wants and desires (Davis & Graybill, 1983), and generally report low levels of expressing true emotions (Fassler et al., 2005; Griffin & Amodeo, 2010; Long & Jackson, 1991; Mollerstrom et al., 1992).

Studies also document lower levels of feelings of belongingness and closeness in maltreating families. Studies show that maltreating families are less adept at identifying and moving toward a common goal (Cicchetti & Howes, 1991; Rogosch et al., 1995), and lack family cohesion (Fassler et al., 2005; Glaser et al., 1993; Griffin & Amodeo, 2010; Long & Jackson, 1991; Mollerstrom et al., 1992) and a positive, supportive environment, a common basis for successful and positive family interaction (Davis & Graybill, 1983). Studies have shown that maltreating families are less oriented toward common interests that serve as sources of connection and enjoyment than families where maltreatment does not occur, such as intellectual and cultural activities, recreational experiences, and moral or religious communities (Davis & Graybill; Gracia & Musitu, 2003). Relatedly, research shows that maltreating families tend to be more socially isolated (i.e., do not choose to and/or do not have the access or resources to participate in community activities, such as a religious community, Finkelhor, 1983; Pianta, Egeland, & Erickson, 1989; Zigler & Hall, 1989).

Studies also show that maltreating mother-child dyads, in particular, demonstrate role reversal, wherein the child acts as caregiver for the parent (i.e., parentification of the child; Dean, Malik, Richards, & Stringer, 1986; Franzraich & Dunsavage, 1977; Macfie, Toth, Rogosch, Robinson, Emde, & Cicchetti, 1999; Steele & Pollak, 1968). High levels of parentification and child maltreatment have been found in the context of maternal depression and other maternal mental health problems (Bagley, 1996; Fleming, Mullen, Sibthorpe, & Bammer, 1999; Windham,

Rosenberg, Fuddy, McFarlane, Sia, & Duggan, 2004). Studies of maltreating families have also documented an environment of general “unfairness,” where children’s physical and emotional needs are not met (Jurkovic, 1997). This is also represented when children are unable to count on parents to meet their needs, when parents are untrustworthy, or when parents fail to provide adequate supervision, guidance, and care (Jurkovic & Thirkield, 1998). Studies have shown maltreating families to be hierarchically organized, more rigid with regard to rules (Davis & Graybill, 1983), and more controlled (Glaser et al., 1993).

Examining family processes associated with CEM and its subtypes might be particularly fruitful. First, CEM in many cases is described as a maltreating *relationship*, as opposed to the specified actions constituting childhood sexual and physical abuse. Therefore, family processes might help to build a more dynamic model of the emotionally maltreating parent-child relationship, leading to a better understanding of this elusive and difficult-to-define type of maltreatment. Second, examinations of factors associated with risk for maladaptive outcome based on maltreatment subtype have been scarce (with the exception of childhood sexual abuse and, to a lesser extent, childhood physical abuse). For example, studies of child sexual abuse survivors consistently reveal that adult survivors’ perceptions of their families in childhood were high in conflict and low in cohesion (e.g., Benedict & Zautra, 1993; Jackson, Calhoun, Amick, Maddever, & Habif, 1990; Ray, Jackson, & Townsley, 1991). Furthermore, these family environments have been shown to be robust predictors of psychosocial difficulties. For example, family conflict in survivors of sexual abuse uniquely predicted psychosocial adjustment, anxiety, and depression (Yama, Tovey, & Fogas, 1993) and low family cohesion uniquely predicted social isolation, depression, low self-esteem, and decreased social competence (Harter, Alexander, & Neimeyer, 1998) irrespective of the presence of maltreatment. Third, identifying preliminary data about family characteristics, although retrospectively reported and subject to related biases, are useful in developing family profiles wherein there may be greater risk for the occurrence of

CEM. Finally, further efforts to substantiate the utility of the two factors of CEM under study will demonstrate differences in family processes and characteristics associated with CEA and CEN subtypes.

Few studies of CEM and associated family or parenting characteristics have been performed. One study of emotional expressiveness failed to show expected differences in family expressiveness among families endorsing CEA versus CEN (Kapeleris, 2009). Instead, both CEA and CEN were associated with negative dominant expressiveness, which describes an environment dominated by harsh, non-instructive negative affect (e.g., anger, disgust). In a family characterized by this type of expressiveness, it is common for family members to express anger at someone else's unintentional carelessness or show contempt for another family member's actions (Bell, 1998). It was initially predicted, however, that CEN would be associated with negative submissive expressiveness, which involves a subtle but pervasive negative affective environment wherein family members might sulk about unfair treatment, are more apt to cry or experience sadness within the family context, and evince ongoing expressions of sorrow or embarrassment (Bell, 1998). At the time the current endeavor was being completed other family-level factors associated with CEM had yet to be documented.

Study 2 Hypotheses

- 1) It is hypothesized that groups high in CEN Only, CEA Only, or Combined CEN/ CEA will also have reported experiencing higher levels of adversity across ecological levels (e.g., family dysfunction, parental substance abuse) than the No CEM/ Contrast group.
- 2) It is hypothesized that the CEA Only group will be uniquely associated with increased experiences of other maltreatment types, witnessing interparental physical violence and verbal abuse, and pervasive negativity in family patterns and expressivity.

- 3) It is hypothesized that the CEN Only group will be uniquely associated with parenting deficits/ challenges (e.g., family structures comprising single parents or alternative living arrangements, such as foster care).
- 4) All other analyses are exploratory in nature and seek to document shared and unique ecological correlates associated with experiences of CEN, CEA, or both CEN and CEA.

Methods (Study 2)

Measures

Demographics. Participants were asked to complete a demographics questionnaire. Current participant-specific information requested included age, year in school, major, cumulative GPA, relationship status, living situation, and [religious orientation]. Past or fixed child-specific information requested included sex, ethnicity, country born in, age moved to US, and disability status. Past family structure information requested included childhood living situation, adoption status, primary maternal and paternal figures, and significant separation from mother or father. Past or fixed parent-specific information requested included mother's and father's highest level of education, and mother and father incarceration during upbringing.

Childhood Maltreatment. Several forms of childhood maltreatment experiences were controlled in the present investigation.

Child Maltreatment Interview Schedule-Short Form (CMIS-SF; Briere, 1992). The CMIS-SF will be used to examine history of physical abuse and exposure to inter-parental family violence. Physical abuse was defined as a caregiver doing something to the child on purpose (e.g., hitting, punching, cutting, or pushing the child) that made the child bleed, gave her or him bruises or scratches, or broke bones or teeth. Exposure to domestic violence was defined as the participant having seen or heard one parent hit or beat up the other parent. Frequency of was rated with a single item on a 8-point scale ranging from *never, 1 time, 2 times...* to *more than 50 times*.

Child Abuse and Trauma Scale (CATS; Sanders & Giolas, 1991). The CATS was used to assess childhood sexual abuse and parental substance abuse. The Sexual Abuse (SA) subscale contains 6 items (e.g., "did your relationship with your parents ever involve a sexual experience,"), each rated on a 5-point, Likert-type scale from *never* to *always*. The SA subscale has documented concurrent validity with objective childhood sexual abuse measures and strong internal consistency and reliability in college student samples (Sanders & Becker-Lausen, 1995).

In the present sample, Cronbach's alpha was .758. Parental substance abuse was assessed with a single item, and participants were asked to indicate to what extent either parent drank heavily or abused drugs (each rated on a 5-point, Likert-type scale from *never* to *always*) prior to the participant's age of 17 years.

Family characteristics. Several aspects of family life were examined in the current investigation.

Filial Responsibility Scale-Adult (FRS-A; Jurkovic & Thirkield, 1999). The FRS-A is a questionnaire consisting of 60 items assessing parent and adult child perceptions of the adult child's childhood experience. Because the focus of the present study is on experiences in childhood, participants only completed the 30 items of the FRS-A that assess their past perceptions of family experience during their own childhood. The FRS-A assesses three subscales: Past Instrumental Caregiving (e.g. "I often did the family's laundry"), Past Expressive Caregiving ("I often felt like a referee in my family"), and Unfairness ("In my family, I gave more to members of my family of origin to help them out"), with each subscale comprising 10 items (Jurkovic, Thirkield, & Morrell, 2001). Items are answered 1=Strongly Disagree to 5=Strongly Agree. Responses are summed to yield a total score for each of the three subscales; higher scores indicate higher levels of parentification (negative experience). In the present study, $\alpha=.794$ for Instrumental Caregiving, .817 for Expressive Caregiving, and .859 for Unfairness.

Family Environment Scale (FES; Moos & Moos, 1986). The FES is a true-false self-report instrument assessing the individuals' perception of their family environment as they were growing up (Moos & Moos, 1986). The instrument contains 10 subscales comprising three broad dimensions of family functioning, 1) Family Interpersonal Relationships (through the Cohesion, Expressiveness, and Conflict (3) subscales, assessing the degree of commitment, openness, and disagreement, respectively, among family members), 2) Personal Growth (through the Independence, Achievement Orientation, Intellectual-Cultural Orientation, Active Recreational

Orientation, and Moral-Religiousness Emphasis (5) subscales, assessing family concern with aspects of personality and social development), and 3) System Maintenance (through the Organization and Control (2) subscales, assessing the extent of formality and hierarchy, respectively, in family structure). The current dataset contains items for six (of the ten) subscales: *Cohesion* (the degree of commitment, help, and support family members provided for one another), *Expressiveness* (the extent to which family members were encouraged to express their feelings directly), *Conflict* (the amount of openly expressed anger and conflict among family members), *Independence* (the extent to which family members were assertive, self-sufficient, and make their own decisions), *Achievement Orientation* (how much activities, such as school and work, were cast into an achievement-oriented or competitive framework), and *Control* (how much set rules and procedures were used to run family life). Items are answered true or false; responses (False=1 True=2) are summed to yield a total score for each of the subscales; higher scores indicate a higher degree of the perceived phenomenon in the participant's family while growing up. For example, high scores on the Conflict subscale reflect higher levels of conflict (a negative experience) while high scores on the Cohesion subscale reflect higher levels of cohesion (a positive experience). Moos and Moos (1986) have reported 8-week test-retest reliabilities for each of the subscales and all are in acceptable range. Internal consistency for a college student sample in one study (Wise & King, 2008) was .78 for Cohesion, .69 for Expressiveness, .75 for Conflict, .61 for Independence, .64 for Achievement Orientation, and .78 for Control. Internal consistency coefficients in the present study are .750 (Cohesion, 9 items), .526 (Expressiveness, 8 items), .746 (Conflict, 8 items), .300 (Independence, 8 items), .406 (Achievement Orientation, 8 items), and .624 (Control, 9 items).

**Due to low Cronbach's alpha coefficients, the Expressiveness, Independence, and Achievement Orientation subscales will not be used in analyses.*

Family Expressiveness Questionnaire (FEQ; Halberstadt, 1986). The FEQ is a 40-item questionnaire designed to measure family emotional expressiveness in the home. Sample statements include “exclaiming over a beautiful day” or “crying after an unpleasant disagreement.” Participants responded to each question by rating the frequency of occurrence in their family, by making a rating on a 9-point Likert scale (1 = *not at all frequently in my family* to 9 = *very frequently in my family*). The FEQ originally yielded four composite scores: positive-dominant, positive non-dominant, negative dominant, and negative non-dominant. Internal consistencies for these original subscales are adequate, ranging from .75 to .88 (Halberstadt, 1986). Researchers have used the FEQ with college students and have reported strong internal reliability, reliability over time, and construct validity (e.g., Bell, 1998; Eisenberg, Miller, Shell, McNalley, & Shae, 1991; Halberstadt, 1986). Internal consistencies (Cronbach’s alpha) for the present study were .882 for positive dominant, .890 for positive non-dominant, .871 for negative dominant, and .747 for negative non-dominant.

Dependent Variable. Childhood emotional maltreatment experience served as the study’s dependent variable. A categorical variable for CEM experience was constructed with four categories reflecting no CEM experiences, CEN only, CEA only, or combined CEA and CEN. The variables comprising CEA include items from the CATS (Sanders & Giolas, 1991) Emotional Abuse subscale. While there is not a published cut-off for the Emotional Abuse scale of the CATS, previous work (see Goldsmith & Freyd, 2005; Kent & Waller, 1998; Sanders & Becker-Lausen, 1995) uses a mean scale score of “Sometimes” or higher (Before you were 17... 1=Never, 2=Rarely, 3=Sometimes, 4=Very Often, 5=Often) to classify participants as emotionally abused in childhood. In the present study, participants similarly had to, on average, score just above the “Sometimes” category (~ 3.33) to be included in the CEA group.

A similar method was used in the present study to determine CEN status. FBQ (Before I was 17... 1=Almost Never, 2=Once in a While, 3=Usually, 4=Almost Always) scores that were,

on average, above “Once in a While,” but less than “Usually,” (~ 2.25) served as the cut-off for participants to be included in the CEN group.

Frequency analyses of constructed categorical variables are generally commensurate to other studies with regard to prevalence of CEM in college-student samples. The prevalence of CEA and CEN in the current study was 20.2% and 17.2%, respectively. Another sample of approximately 300 college students comprised 29.9% and 24.3%, respectively, of students identified as emotionally abused and emotionally neglected in childhood (Shirley, 2012).

Analytic Strategy

Univariate (i.e., descriptive) statistics (frequencies and percentages for nominal data and means and standard deviations for continuous data) of demographic and other variables are reported by CEM group (combined CEA/CEN, CEA only, CEN only, comparison/ no CEM; see Table 11).

Bivariate analyses comprised Pearson chi-square tests of independence for categorical predictor variables and ANOVA with post-hoc comparisons for continuous predictor variables to examine associations among CEM subtypes and other forms of maltreatment, demographic characteristics, parent characteristics, child characteristics, and family environment variables were performed. Predictors with significant associations with CEM were included in multivariate analysis.

There are two assumptions that must be met for the chi-square test to be used. First, there must be independence of data. This means that each participant or item must contribute uniquely to a single cell in the contingency table. One cannot, for example, use chi-square tests for repeated-measures design. The second assumption requires that expected frequencies exceed 5 in each cell of the contingency table. Violation of this assumption results in a loss of statistical power (Howell, 2006; Field, 2009). Though not a formal assumption, it is important to recognize that proportionately small cell frequency differences can yield significant associations when the

sample size is large, as in the current study. As a result, it is important to examine row and column percentages to aid in interpreting meaningful differences. *Cramer's V* (when one or more variables has more than two categories) will be calculated to discern effect size. This statistic measures the strength of association between variables while taking sample size and degrees of freedom into account. Values of Cramer's *V* range from 0 to 1 and is evaluated similarly to effect size of correlation (i.e., small is .10 to .29, medium is .30 to .49, and large is .50 or larger).

Assumptions of ANOVA are similar to other parametric tests, and include normality, homogeneity of variances, independent observations, and an outcome measured on at least an interval scale (Field, 2009). First, values of skewness and kurtosis were acceptable. Second, ANOVA is generally robust to violation of the homogeneity of variance across subgroups on a given measure or subscale, except in the case of unequal sample sizes across group levels (i.e., CEM status), which is present here. Therefore, close examination of variances across subgroups was important here. Inspection of Levene's statistic ($p < .05$ indicates violation of homogeneity of variance) revealed several subscales with statistically different variances across CEM group; however, because Levene's statistic is sensitive to large sample size (as in the current study), variance ratios (a.k.a., Hartley's F_{Max}) were computed (divide a subscale's largest variance by its smallest variance across CEM subgroups; compare to critical value based on group sample size, using the smallest subgroup's n when there are differences in subgroup size, and number of variable levels). None of the subscales identified by the Levine statistic as problematic were found to have unequal variances using this more accurate method. Nevertheless, the Welch F statistic, rather than the F -ratio, will be used to evaluate omnibus tests as it is robust to unequal variances across groups. Post-hoc analyses using the Games-Howell procedure will be performed. Games-Howell performs well when population variances differ, when sample sizes are unequal (as in the present study), and is powerful (i.e., there is low probability of Type I error).

Four ecological levels (individual, microsystem, exosystem, and macrosystem) organized over twenty potential predictors of CEM subgroup membership (see Table 10). Multivariate analyses included backward stepwise multinomial logistic regression to explore ecological factors associated with CEM subgroup membership. An entry probability (i.e. probability the likelihood-ratio statistic will be entered into the final model, with larger values resulting in increased likelihood of variable entry) of 0.05 and removal probability (probability the likelihood-ratio will be removed from the final model, with larger values resulting in increased likelihood of variable retention) of 0.1 for the main effects were used. While predictors will be discussed by ecological level, analysis of variables associated with CEM subgroup is exploratory; thus, a stepwise procedure is appropriate. The backward approach will be used as the forward approach is more likely to erroneously exclude predictors involved in suppressor effects (i.e., predictor is significant only when another variables are held constant), therefore increasing the probability of Type II error. The backward stepwise approach excludes main effects and interaction terms that fail to make a significant contribution to the model.

Assumptions of multinomial logistic regression include case-specific data (i.e., each case has a single value for each independent variable) and, ideally, absence of multicollinearity. Multicollinearity refers to a very high correlation between two predictors and requires excluding violating predictors from study. Multicollinearity was assessed with the tolerance and VIF statistics (Field, 2009), and all VIF statistics were below 10.0 (ranged from 1.123 to 5.565) and all Tolerance statistics were above the 0.1 cut-off (ranged from .180 to .891; Bowerman & O'Connell, 1990; Myers, 1990). In the current investigation, the minimum ratio of valid cases (1129) to independent variables (15) was 75.3 to 1, which far exceeds the recommended minimum of 10 or, ideally, 20 to 1 (Hosmer & Lemeshow, 2000).

Evaluation of the omnibus test relied on the final model chi-square statistic likelihood ratio rather than the Wald statistic owing to the Wald statistic's tendency to become inflated in

the presence of a large regression coefficient (Menard, 1995; Agresti & Finlay, 1986, cited in Field, 2009). The Contrast (No CEM) group served as the reference category to which the remaining CEM groups (CEA Only, CEN Only, Combined CEN/ CEA) were compared to determine significant differences in ecological correlates based on CEM experience. Odds ratios are indicative of the expected decrease or increase in likelihood of scoring positively on the variable under study in comparison to a reference (i.e., control or contrast) group and are also indicators of effect size (small is 1.44 to 2.46, medium is 2.47 to 4.24, and large is 4.25 or greater). Odds ratios were produced for each predictor variable (see Table 13). To ease interpretation of differences between predictors, all continuous independent variables were standardized prior to multivariate analysis.

Results (Study 2)

Univariate & Bivariate Analyses

Sex, race/ ethnicity, and CEM subgroup (categorical). Table 11 documented significant sex-based differences found among CEM subtypes ($\chi^2 = 14.58$, $df = 3$, $p = .002$); however, the effect size was relatively weak (Cramer's $V = .084$, $p = .002$). Across levels of childhood emotional maltreatment, females were more likely than males to be in the Combined CEN/CEA group (female by Combined CEN/CEA, adjusted residual = 3.1). Males (male by No CEM/Contrast group, adjusted standardized residual = 3.5) were more likely to be in the No CEM/Contrast group than females. A significant but relatively weak effect was found with regard to ethnicity, such that Hispanic/Latino participants were more likely to be in the No CEM/Contrast group ($\chi^2 = 21.572$, $df = 12$, $p = .043$, Cramer's $V = .062$, $p = .043$). A nearly significant finding was detected reflecting higher numbers of participants identifying as Asian or Pacific Islander in the Combined CEN/CEA group (adjusted standardized residual = 1.9).

Childhood emotional neglect (CEN, categorical). Of the predictor variables examined with contingency table analyses (i.e., Chi-Square) and One-way Analysis of Variance (ANOVA) procedures, several were found to be significantly associated with CEM subgroup membership. Contingency table analysis revealed that participants who endorsed childhood experiences of emotional neglect (i.e, the CEN Only group, $n=152$) had higher than expected levels of fathers who had been incarcerated ($\chi^2 = 10.635$, $df = 3$, $p = .014$, Cramer's $V = .073$, $p = .014$); fathers who were absent for at least 6 months during a participant's upbringing ($\chi^2 = 28.262$, $df = 3$, $p < .001$, Cramer's $V = .118$, $p < .001$); a substance-abusing parent (or parents) ($\chi^2 = 21.645$, $df = 3$, $p < .001$, Cramer's $V = .103$, $p < .001$); absence of a mother figure ($\chi^2 = 37.044$, $df = 3$, $p < .001$, Cramer's $V = .135$, $p < .001$) and/or father figure ($\chi^2 = 43.656$, $df=3$, $p < .001$, Cramer's $V = .146$, $p < .001$), and growing up with a single parent (adjusted standardized residual = 4.2) or other

relatives without a parent present (adjusted standardized residual = 2.4; $\chi^2 = 55.783$, $df = 9$, $p < .001$, Cramer's $V = .095$, $p < .001$).

Childhood emotional neglect (CEN, continuous). ANOVA (see Table 11) with Games-Howell post hoc comparisons revealed that individuals endorsing CEN endorsed significantly higher levels of perceived unfairness in their family (Welch's $F = 320.41$, $df = 3$, $df2 = 280.23$, $p < .001$), lower levels of family cohesion (Welch's $F = 191.75$, $df = 3$, $df2 = 348.25$, $p < .001$), higher levels of conflict (Welch's $F = 221.00$, $df = 3$, $df2 = 377.37$, $p < .001$), lower levels of positive expression (Welch's $F = 94.79$, $df = 3$, $df2 = 274.63$, $p < .001$) and higher levels of negative expression (Welch's $F = 142.74$, $df = 3$, $df2 = 282.36$, $p < .001$) within the family than participants endorsing lower levels of, or no experiences with, CEM.

Furthermore, when compared to the CEA Only group, the CEN only group endorsed significantly lower levels of family cohesion ($p = .044$).

Childhood emotional abuse (CEA, categorical). Participants who endorsed childhood experiences of emotional abuse (i.e., the CEA Only group, $n=215$) had higher than expected levels of witnessing interparental physical violence ($\chi^2 = 99.124$, $df = 3$, $p < .001$, Cramer's $V = .221$, $p < .001$) and verbal abuse ($\chi^2 = 290.964$, $df = 3$, $p < .001$, Cramer's $V = .378$, $p < .001$); experienced physical abuse ($\chi^2 = 242.212$, $df = 3$, $p < .001$, Cramer's $V = .370$, $p < .001$) and non-familial sexual abuse ($\chi^2 = 44.728$, $df = 62$, $p < .001$, Cramer's $V = .105$, $p < .001$); and mothers with some high school as their highest level of education ($\chi^2 = 39.722$, $df = 18$, $p = .002$, Cramer's $V = .083$, $p = .002$).

Childhood emotional abuse (CEA, continuous). ANOVA (see Table 11) with Games-Howell post hoc comparisons revealed that individuals endorsing CEA endorsed significantly higher levels of instrumental caregiving within their families (Welch's $F = 19.89$, $df = 3$, $df2 = 263.13$, $p < .001$), higher levels of expressive caregiving (Welch's $F = 48.84$, $df = 3$, $df2 = 276.05$, $p < .001$), higher levels of perceived unfairness (Welch's $F = 320.41$, $df = 3$, $df2 =$

280.23, $p < .001$), lower levels of family cohesion (Welch's $F = 191.75$, $df = 3$, $df2 = 348.25$, $p < .001$), higher levels of conflict (Welch's $F = 221.00$, $df=3$, $df2=377.37$, $p < .001$), higher levels of controlling behavior (Welch's $F = 34.31$, $df = 3$, $df2 = 363.58$, $p < .001$), and lower levels of positive expression (Welch's $F = 94.79$, $df = 3$, $df2 = 274.63$, $p < .001$) and higher levels of negative expression (Welch's $F = 142.74$, $df = 3$, $df2 = 282.36$, $p < .001$) within the family than participants endorsing lower levels of or no experiences of CEM.

Furthermore, when compared to the CEN only group, the CEA only group endorsed significantly higher levels of instrumental caregiving ($p = .041$), expressive caregiving ($p < .001$), family conflict ($p < .001$), and control ($p = .005$).

Combined CEN/ CEA (categorical). Finally, participants who reported experiencing both emotional abuse and emotional neglect in childhood (Combined CEN/ CEA group, $n=200$) endorsed higher than expected levels of being female ($\chi^2 = 14.580$, $df = 3$, $p = .002$, Cramer's $V = .084$, $p = .002$), mothers with a history of incarceration ($\chi^2 = 8.858$, $df = 3$, $p = .031$, Cramer's $V = .066$, $p = .031$); a substance-abusing parents (or parents) ($\chi^2 = 21.645$, $df = 3$, $p < .001$, Cramer's $V = .103$, $p < .001$); absence of a mother figure ($\chi^2 = 37.044$, $df = 3$, $p < .001$, Cramer's $V = .135$, $p < .001$) and/or father figure ($\chi^2 = 43.656$, $df = 3$, $p < .001$, Cramer's $V = .146$, $p < .001$); growing up with a parent and step-parent/ partner or another arrangement (e.g., relatives, foster care; $\chi^2 = 55.753$, $df = 9$, $p < .001$, Cramer's $V = .095$, $p < .001$); absence of a mother figure ($\chi^2 = 37.044$, $df = 3$, $p < .001$, Cramer's $V = .135$, $p < .001$) and/or father figure ($\chi^2 = 43.656$, $df = 3$, $p < .001$, Cramer's $V = .146$, $p < .001$) for 6 months or more while growing up; witnessing interparental physical violence ($\chi^2 = 99.124$, $df = 3$, $p < .001$, Cramer's $V = .221$, $p < .001$) and verbal abuse ($\chi^2 = 290.964$, $df = 3$, $p < .001$, Cramer's $V = .378$, $p < .001$); experienced physical abuse ($\chi^2 = 242.212$, $df = 3$, $p < .001$, Cramer's $V = .370$, $p < .001$) and non-familial and familial sexual abuse ($\chi^2 = 44.728$, $df = 62$, $p < .001$, Cramer's $V = .105$, $p < .001$); and mothers with grade school only or a 2-year degree as their highest level of education ($\chi^2 = 39.722$, $df = 18$, $p =$

.002, Cramer's $V = .083$, $p = .002$). Interestingly, participants endorsing childhood experiences of emotional abuse and neglect (Combined CEN/ CEA group) were significantly less likely describe their ethnicity as Hispanic or Latino ($\chi^2 = 17.311$, $df = 9$, $p = .044$, Cramer's $V = .055$, $p = .044$). A trend was found for higher levels of Asian participants in the Combined CEN/ CEA group, though this association did not reach significance (adjusted standardized residual = 1.9).

Combined CEN/ CEA (continuous). ANOVAs (see Table 11) with Games-Howell post hoc comparisons revealed that individuals endorsing high levels of combined CEN and CEA endorsed significantly higher levels of instrumental caregiving within their families (Welch's $F = 19.89$, $df = 3$, $df2 = 263.13$, $p < .001$), higher levels of expressive caregiving (Welch's $F = 48.84$, $df = 3$, $df2 = 276.05$, $p < .001$), higher levels of perceived unfairness (Welch's $F = 320.41$, $df = 3$, $df2 = 280.23$, $p < .001$), lower levels of family cohesion (Welch's $F = 191.75$, $df = 3$, $df2 = 348.25$, $p < .001$), higher levels of conflict (Welch's $F = 221.00$, $df = 3$, $df2 = 377.37$, $p < .001$), higher levels of controlling behavior (Welch's $F = 34.31$, $df = 3$, $df2 = 363.58$, $p < .001$), and lower levels of positive expression (Welch's $F = 94.79$, $df = 3$, $df2 = 274.63$, $p < .001$) and higher levels of negative expression (Welch's $F = 142.74$, $df = 3$, $df2 = 282.36$, $p < .001$) within the family than participants endorsing lower levels of or no experiences of CEM.

Furthermore, when compared to the CEN Only and CEA Only groups, the combined CEN/ CEA group endorsed significantly higher levels of instrumental caregiving in their families (CEN Only, $p = .002$), higher levels of expressive caregiving (CEN Only, $p < .001$), higher levels of perceived unfairness (CEN, $p < .001$; CEA, $p < .001$), lower levels of family cohesion (CEN, $p < .001$; CEA, $p < .001$), and higher levels of family conflict (CEN Only, $p < .001$).

Ecological correlates not retained for multivariate analysis. Bivariate examination of associations between CEM subtype and ecological factors yielded several non-significant findings, which were therefore not included in subsequent multivariate analyses. Ecological factors not retained include *individual child* (disability, adoption status) and *exosystem* (highest

level of education among parents, father's highest level of education) factors. All other ecological correlates were examined via multinomial logistic regression (see below).

Multivariate Analyses

Assumptions. To examine multicollinearity, linear regression was performed with all continuous independent variables (dependent variable does not matter – here, was the continuous CEA variable) and collinearity statistics were assessed. Inspection of the Tolerance (amount of variance in each independent variable not explained by other independent variables) and VIF statistics revealed two variables with values below the recommended Tolerance score cut-off of .3 (FEQ positive-dominant and FEQ positive non-dominant) and exceeding the VIF cut-off of 5, indicating likelihood of distorted regression coefficients. Multicollinearity may be a problem here owing to redundancy as, presumably, one is the inverse of the other. Therefore, FEQ positive non-dominant will be removed from analyses. Multicollinearity can also be examined via standard error values of the beta coefficients exceeding 2.0. This may indicate multicollinearity among independent variables; it may also be indicative of unpopulated dummy-coded cells or complete separation, wherein two levels of the dependent variable can be separated fully by scores on one of the independent variables. In all of these cases, regression coefficients are distorted and cannot be interpreted.

Multinomial logistic regression (MLR): Omnibus tests. Multinomial logistic regression was used to model the relationship between independent variables and four groups, which included No CEM/Contrast, CEN Only, CEA Only, and Combined CEN/ CEA groups. Both Pearson ($\chi^2 = 2527.93$, $df = 3321$, $p = 1.00$) and Deviance ($\chi^2 = 1225.640$, $df = 3321$, $p = 1.00$) statistics test the null hypothesis that the model's predicted values differ significantly from the observed values, indicating goodness of fit when non-significant (as seen here). The difference in log-likelihood, also regarded as a measure of amount of unexplained variability in data, reflects the decrease in unexplained variance from the baseline model (1959.75) to the final

model (1351.64); addition of the predictors to the baseline model containing the intercept only (i.e., the null model) significantly improved the data's fit to the model ($\chi^2 = 728.11$, $df = 60$, $p < .001$). A Nagelkerke R^2 value of .578 indicates a strong improvement in model fit over the baseline null model (0 to .1 indicating poor improvement in fit, .1 to .3 modest improvement, .3 to .5 moderate improvement, and above .5 strong improvement).

Inspection of likelihood ratio tests revealed significant effects (see Table 12) for variables in all ecological levels examined, including *individual child* (sex) and *parent* (father having ever been incarcerated), *microsystem* (primary living situation growing up; witnessing interparental verbal abuse; expressive caregiving, i.e., parentification; perceived unfairness, i.e., parentification; family cohesion; family conflict; and both positive and negative expressiveness within the family), *exosystem* (mother's highest level of education), and *macrosystem* (ethnicity).

Multinomial logistic regression (MLR): Model parameters. The reference group comprised individuals endorsing neither childhood emotional abuse nor neglect (i.e., the No CEM/ Contrast group). Each predictor therefore determined the likelihood of membership in the CEN Only, CEA Only, or Combined CEN/CEA group (see Table 13).

CEN Only group compared to No CEM/ Contrast group. Participant's sex significantly predicted whether they were in the CEN Only group as opposed to the No CEM/ Contrast group, $b = .915$, Wald $\chi^2 = 9.441$, $df = 1$, $p = .002$. The odds of CEN group membership for females was 2.5 (95% CI, 1.393 to 4.487) times greater than for males. Significant findings were also revealed for maternal figure, $b = -1.584$, Wald $\chi^2 = 4.699$, $df = 1$, $p = .030$, such that emotionally neglected participants were almost five times more likely not to have a maternal figure while growing up. CEN was also predicted by living arrangements growing up, $b = .856$, Wald $\chi^2 = 4.217$, $df = 1$, $p = .040$; individuals in the CEN Only group were over twice as likely to live in single parent households as opposed to living with both parents. Additionally, participants endorsing significantly lower levels of expressive caregiving ($b = -.495$, Wald $\chi^2 = 7.447$, $df = 1$, $p = .006$),

higher levels of perceived unfairness ($b = 1.175$, Wald $\chi^2 = 28.935$, $df = 1$, $p < .001$), lower levels of cohesion ($b = -.446$, Wald $\chi^2 = 6.787$, $df = 1$, $p = .009$), and lower levels of positive expressivity ($b = -.466$, Wald $\chi^2 = 6.875$, $df = 1$, $p = .009$) in their families predicted CEN Only group membership when compared to the No CEM/ Contrast group.

CEA Only group compared to No CEM/ Contrast group. Female participants were almost three times more likely than males to be in the CEA Only group compared to the No CEM/ Contrast group ($b = .736$, Wald $\chi^2 = 7.869$, $df = 1$, $p = .005$). Witnessing interparental verbal aggression ($b = 1.160$, Wald $\chi^2 = 15.800$, $df = 1$, $p < .001$) and experiencing childhood physical abuse ($b = .751$, Wald $\chi^2 = 5.503$, $df = 1$, $p = .019$) significantly increased the likelihood of CEA Only group membership over membership in the No CEM/ Contrast group by factors of 3 and 2, respectively. With regard to family climate, significantly higher levels of perceived unfairness ($b = 1.278$, Wald $\chi^2 = 41.879$, $df = 1$, $p < .001$), higher levels of conflict ($b = .701$, Wald $\chi^2 = 15.202$, $df = 1$, $p < .001$), lower levels of positive expressiveness ($b = -.330$, Wald $\chi^2 = 4.131$, $df = 1$, $p = .042$), and higher levels of negative expressiveness ($b = .594$, Wald $\chi^2 = 11.252$, $df = 1$, $p = .001$) predicted CEA Only group membership over the No CEM/ Contrast group membership.

Combined CEN/ CEA group compared to No CEM/ Contrast group. Females were almost four times as likely as males to be in the Combined CEA/ CEN group than males ($b = 1.340$, Wald $\chi^2 = 15.287$, $df = 1$, $p < .001$). Participants in the Combined CEN/ CEA group were less likely to have a maternal figure while growing up ($b = -1.854$, Wald $\chi^2 = 3.920$, $df = 1$, $p = .048$), four times more likely to live with a parent and step-parent/ partner while growing up ($b = 1.439$, Wald $\chi^2 = 5.659$, $df = 1$, $p = .017$) than both parents, more likely to witness interparental verbal abuse ($b = .930$, Wald $\chi^2 = 4.747$, $df = 1$, $p = .010$), and more likely to have endorsed experiences of childhood physical abuse ($b = .823$, Wald $\chi^2 = 4.747$, $df = 1$, $p = .029$). Participants who identified as Hispanic/ Latino were significantly less likely to be in the Combined CEN/

CEA group ($b = -1.603$, Wald $\chi^2 = 8.857$, $df = 1$, $p = .003$) when compared to white participants.

With regard to family characteristics, participants in the Combined CEN/ CEA group endorsed significantly lower levels of expressive caregiving ($b = -.617$, Wald $\chi^2 = 10.206$, $df = 1$, $p = .001$), higher levels of perceived unfairness (by a 7 fold increase, $b = 1.983$, Wald $\chi^2 = 60.458$, $df = 1$, $p < .001$), higher levels of conflict ($b = .846$, Wald $\chi^2 = 13.095$, $df = 1$, $p < .001$), and lower levels of positive expressiveness ($b = -.610$, Wald $\chi^2 = 10.211$, $df = 1$, $p < .001$) when compared to individuals in the No CEM/ Contrast group.

Study 3: CEM and Stage-Salient Tasks of Emerging Adulthood

Study 3 examines theoretically- and empirically-expected associations among CEM experiences and three stage-salient tasks of emerging adulthood in a college environment (Self-perception of academic and intellectual functioning, Conduct, and Social competence and friendship).

Introduction

Conceptualization of the unique developmental period of emerging adulthood emanated from observations of generational changes in developmental trends (e.g., delays in parenting and partnering/cohabitating) and growing documentation of fundamental developmental tasks (e.g., identity exploration, instability, focus on the self, exploration of possibilities; Arnett, 2000, 2001, 2006, 2007a, 2007b, 2007c) to be undertaken and successfully navigated. Emerging adulthood, ranging from approximately 18 to 25 years of age, essentially represents a more protracted and focused period between adolescence and the tasks of adulthood (i.e., settling into long-term plans regarding work and intimate relationships; Arnett & Taber, 1994; Schwartz et al., 2005; Arnett, 2007a, 2007b, 2007c). The developmental stress associated with this period is significant. Traditionally-aged college students are generally considered to inhabit emerging adulthood and face additional stressors, including adjustment to a more academically rigorous environment, increasing opportunities to engage in risky behavior due to lack of parental supervision, and navigating new and different types of relationships with roommates, peers, and figures of authority (e.g., professors).

The impact of developmental consequences of childhood maltreatment on stage-salient tasks of emerging adulthood are of primary interest here. Navigation of stage-salient tasks of emerging adulthood, similar to other periods of transition, places increasing demands on individuals' socio-emotional resources as the natural consequence of navigating such

fundamental questions is often accompanied by increased intensity and frequency of negative emotion. In fact, Arnett (2004, 2005) identifies this period as one that leaves individuals more vulnerable to relational difficulties, emotion dysregulation, and other problems. Add to this the unique psychosocial and other demands placed on college students as well as increased feelings of instability inherent in this developmental period, and it becomes critical to examine the potential impact of child maltreatment on individuals' abilities to navigate the tasks of this developmental period and transition successfully to adulthood.

Studies documenting the associations among childhood experiences of maltreatment and outcomes in emerging adulthood are troubling. Childhood maltreatment is associated with higher levels of physical health problems (including chronic medical conditions) and healthcare utilization (Chartier et al., 2010; Sprinter et al., 2007; Thompson, Arias, Basile, & Desai, 2002). Studies have documented associations between childhood maltreatment and interpersonal difficulties (e.g., difficulties in finding and maintaining romantic relationships, lower levels of relationship satisfaction, increased levels of problematic relational behaviors, such as not being assertive, being emotionally distant, and sacrificing one's own needs for her/his partner's; Davis, Petretic-Jackson, & Ting, 2001; Paradis & Boucher, 2010) and higher levels of anxiety, depression, and somatization (Kaplow & Spatz-Widom, 2007; Mersky & Topitzes, 2009; Springer, Sheridan, Kuo, & Carnes, 2007) in emerging adulthood.

Childhood maltreatment has been associated with difficulties in affect regulation, identity, and relatedness (i.e., self-capacities, Briere & Rickards, 2007; Briere & Runtz, 2002), all of which are crucial for successful navigation of developmental tasks of emerging adulthood. Roisman, Masten, Coatsworth, and Tellegen (2004) identified five stage-salient developmental tasks of emerging adulthood, three of which are particularly relevant to a college environment: academic achievement, conduct, and social competence and friendship; thus, the current endeavor focuses on the potential unique contribution of CEA and CEN to three areas of functioning for

traditionally-aged college students: academic achievement (i.e., perception of scholastic competence and intellectual ability), conduct (i.e., crime involvement and inappropriate levels of expressed anger in social situations), and social competence and friendship (i.e., experience of close friendships and peer alienation or communication and trust).

Studies show that displays of regulated positive and negative emotion in families contribute to a child's social competence, development of empathy, and increased prosocial behavior (Jones, Abbey, & Cumberland, 1998). Positive affect, particularly in parents, is associated with higher levels of emotion knowledge, positive affect, and prosocial sibling behavior (Jones et al., 1998). On the other hand – and particularly relevant to childhood maltreatment – negative and unpredictable emotional displays within families are associated with low self-esteem, emotion dysregulation, and relational problems in children (Morris et al., 2007). As previously discussed, the consequences of childhood maltreatment are not confined to childhood, but have been shown to negatively impact functioning well into adulthood. The current section aims to elucidate potential processes through which CEM disrupts successful navigation of stage-specific tasks of emerging adulthood.

Cicchetti and Lynch's (1993) ecological-transactional model improves upon previous models by specifying the cumulative deleterious effects of adverse experiences (e.g., childhood maltreatment), as missed developmental milestones confer greater risk for negatively impacting acquisition of subsequent milestones (Cicchetti, 1991; Sroufe & Rutter, 1984). This is consistent with the notion of developmental cascades discussed previously. Unsurprisingly, theoretical and empirical support for the lasting socio-emotional consequences of childhood maltreatment is abundant (see Introduction). The most influential theories of socio-emotional development (i.e., object relations and other psychodynamic approaches; attachment; and social-cognitive) hold that early caregiving experiences in the context of family and parenting are internalized (i.e., internal working models, representational worlds, and schemas, respectively; Bretherton & Munholland,

1999; Sandler & Rosenblatt, 1962; Baldwin, 1992) and make significant contributions to future socio-emotional functioning (Allen, Moore, Kumerminc, & Bell, 1998; Bowlby, 1982; Bretherton, 1990; Burrowes & Halberstadt, 1987; Greenberg & Mitchell, 1983; Stern, 1985).

Inherent to a developmental psychopathology perspective is the importance of understanding normative developmental processes in order to understand maladaptation (and vice versa). CEA and CEN describe relationships between child and caregiver that are chronically emotionally hostile (the former) and/or chronically unresponsive to a child's emotional needs (the latter). This naturally focuses examination of the developmental impacts of CEM on developmental processes reliant on the child-caregiver relationship that emotionally hostile and/or unresponsive parenting might disrupt. Child socialization is a main function of the parent-child relationship, and attachment theory provides an important unifying framework for examining the processes through which CEM potentially leads to maladaptation. According to attachment theory, a child develops internal working models (i.e., representations) of self, other, and self-in-relation-to-other through early interactions with primary caregivers (Bowlby, 1982, 1988). When caregivers are consistently sensitive and responsive to infant's/ children's needs, children internalize a representation of *others* as reliable and supportive and the *self* as capable of getting needs met and worthy of care and assistance.

Experiences of CEM might therefore affect the maltreated child's view of others as helpful and reliable and of the self as worthy of love and support (Rogosch, Cicchetti, Shields, & Toth, 1995). Instead, internal working models might conceptualize the self as inadequate, powerless, and unworthy and others as untrustworthy and unable/unwilling to be sources of support. Further, a secure parent-child relationship provides a safe context for a child's increasing capacity and need for autonomy. Sensitivity to a child's increasing need for autonomy may be absent for maltreating parents, and the consequences for the child may include increasing sense of self as powerless and incapable. In fact, one study showed that toddlers evinced negative or

neutral affect in response to their mirrored reflections (while non-maltreated toddlers tended to display positive affect in response to their reflections, Cicchetti & Lynch, 1993).

In addition to conceptualization of self and other, attachment theory has important implications for a child's ability to regulate emotion. The thwarting of autonomy maltreated children face appears to lead to limitations in describing their own and others' emotions (Cicchetti, 1993; Toth et al., 1997). This may reflect an underdeveloped ability to know and understand the maltreated child's own authentic emotional experience. In fact, studies show that maltreated children evince deficits in emotion recognition and regulation (for a review, see Camras et al., 1996; Cicchetti & Lynch, 1993). A secure child-caregiver relationship provides a safe context for recognizing and managing both positive and negative expressions of emotion - critical practice for understanding one's own and others' emotions that maltreated children may not get. For maltreated children, on the other hand, the child-parent relationship fails to provide a safe environment for emotional signaling and authentic expression of emotion. Studies have shown that some maltreated children amplify distress in an effort to get their needs met (Calkins & Hill, 2007). When these bids for attention are unsuccessful, not only are there potential consequences to a child's self-esteem (i.e., undeserving of love and assistance), but these children also appear to attempt to regulate their distress by inhibiting emotional experience and expression - a maladaptive emotional regulation strategy that serves only to heighten physiological arousal.

As previously mentioned, emerging adulthood is marked by high demands for autonomy and competence in the context of instability. An individual's response to stress and new demands depends heavily on one's expectations of the self as capable and the ability to successfully weather and work with strong emotion. The focus of these follow-up analyses will examine self-esteem, emotion understanding and regulation, and parent attachment (alienation, more specifically) as potential mediators for the relationship between CEM and perceptions of

academic achievement and ability, conduct, and social competence and friendship, respectively (see Figure []).

Study 3 Hypotheses

- 1) *Academic & Intellectual Competence*: With individuals with CEN histories being at increased-risk for maladaptive overall (e.g., Egeland & Erickson, 1987), it is hypothesized that students with CEN histories will evince poorer performance in academic achievement potentially associated with poor problem-solving in response to increased academic demands typically found in the college setting. At the same time, CEA may confer risk in this domain as well. The constant, overt hostility and criticism directed at emotionally-abused children may be associated with negative perceptions of self (i.e., low self-esteem and self-efficacy). It is, therefore, also hypothesized that individuals endorsing histories of CEA will evince poorer academic performance, perhaps related to negative beliefs about the self and his/her ability. Therefore, it is hypothesized that students with either type of CEM history are at increased risk for poorer academic performance.
- 2) *Conduct*: Based on theoretical and empirical evidence suggesting that individuals with CEN histories are at greater risk for emotion dysregulation, it is hypothesized that CEN (coupled with assumed lack of parental supervision) will be related to increased problems in the areas of criminal behavior and disruptive and aggressive behavior.
- 3) *Social Competence & Friendship*: It is hypothesized that students reporting a history of CEN will be associated with the greatest impairments in social competence and friendships. It is also hypothesized that students with CEA histories will evince impairments in social competence and friendship, however, it is expected that these problems will be less pronounced and will include higher levels of conflict reported in the early family environment.

- 4) Given that differences in GPA were not found across CEM subgroups, it is hypothesized that self-esteem will mediate the relationship between CEM and perceptions of scholastic achievement. It is hypothesized that this relationship will be stronger for CEA owing to the potential impact of overt hostility on children's self-esteem.
- 5) It is hypothesized that the relationship between CEM and conduct will be mediated by emotion recognition and regulation (particularly for individuals who report high levels of inappropriate expressions of anger in social contexts). It is also hypothesized that emotion regulation difficulties will impact the relationship between CEM and crime, particularly owing to inclusion of crimes related to interpersonal aggression (e.g., assault and battery). While CEA is marked by hostile interactions, similar to other forms of maltreatment it may be more likely that normative emotional exchanges occur whereas emotional neglect seems to suggest a chronicity of unresponsiveness. Therefore, it is expected that the proposed relationship among CEM, conduct, and emotion regulation will be especially pronounced for participants endorsing high levels of CEN. Further, if total emotion regulation is found to mediate the relationship between CEM and stage-salient developmental task, follow-up mediation analyses will include several aspects of emotion regulation (e.g., emotion recognition) to identify specific aspects of emotion regulation that may impact the relationship between CEM and, for example, conduct.
- 6) When CEM is associated with participants' reports of alienation from parents (an aspect of the study's attachment measure), it is expected that these participants will have been less likely to develop lasting and supportive close friendships. It is hypothesized that parent alienation will mediate the relationship between CEM and quality of peer relationships/friendships. It is hypothesized that the influence of parent alienation on the relationship between CEM and social competence and friendships will be more pronounced for participants endorsing high levels of CEN owing to expectations that

CEN will confer greater impairments in mastering skills for development of lasting and close friendships.

Methods (Study 3)

Measures

Harter Self Perception Profile for College Students (SPPCS; Neeman & Harter, 1986), subscales: Self-Perception of Scholastic Competence, Self-Perception of Intellectual Ability, and Self-Perception of Close Friendships. The SPPCS was designed for use with traditional-aged, full-time college students. The SPPCS, a 54-item survey, evaluates self-perceptions in 13 areas, including creativity, intellectual ability, scholastic competence, job competence, athletic competence, appearance, romantic relationships, social acceptance, close friendships, parent relationships, humor, morality, and global self-worth. Each item asks the student to indicate which side of a two-part statement they identify with the most in reference to their feelings about themselves. The items are scored 1 to 4 in the direction of higher self-esteem. To assess internal consistency, Brooks and DuBois (1995) administered the SPPCS to 56 first-year students enrolled full-time at a large, public Midwestern university in an investigation of individual and environmental predictors of adjustment during the 1st year of college. They found the SPPCS to yield a high level of internal consistency ($\alpha = .82$). In a study of 154 undergraduates, Onwuegbuzie and Daley (1998) investigated the study skills of undergraduates as a function of academic locus of control, self-perception, and social interdependence. The alpha coefficients for various subscales ranged from .77 to .86. Subscales of interest in the current analyses are Intellectual Ability (general intellectual competence and global intelligence, e.g., whether one feels “just as smart, or smarter, than other students”) and Scholastic Competence (whether one feels “competent that s/he is mastering the coursework). Alpha coefficients for these scales in the present study are .81 and .76, respectively. Examples for Self-Perception of Close Friendships include “whether one gets lonely because one doesn’t have a close friend to share things with” and “whether one has the ability to make close friends.” Internal consistency for Self-Perception of Close Friendships is .80.

Adolescent Health Survey, subscales: Criminal Activity. This measure was adapted for the present study from an unpublished survey of adolescent health. The Criminal Activity section includes 14 items and asks participants (1) if they have ever engaged in certain criminal behaviors (e.g., shoplifting, vandalism, domestic violence, selling drugs, homicide). Participants are then asked whether they were (2) arrested and (3) convicted for each type of criminal behavior. All responses were yes/no format. The present study uses number of types of crimes (e.g., shoplifting and vandalism would reflect two types of crime committed).

State-Trait Anger Inventory-2 (STAXI-2; Spielberger, 1996), subscale: Anger Expression-Outward. The STAXI-2 distinguishes between two components of anger: anger experience and anger expression. Anger experience consists of two components: anger as an emotional state, or state anger, and anger as a more stable personality trait, or trait anger. Trait anger is further deconstructed into two subscales: Angry Temperament and Angry Reaction. Anger expression is measured on four subscales: AX/In (anger directed inwardly), AX/Out (anger expressed outwardly), Ax/Con-I (attempts to control the expression of anger inwardly) and Ax/Con-O (attempts to control the expression of anger outwardly). The STAXI is widely used in research settings (Mayne & Ambrose, 1999) and has strong psychometric properties (Deffenbacher, Lynch, Oetting, & Kemper, 1996) regarding convergent and divergent validity; Fuqua, Leonard, Masters, Smith, Campbell, & Fischer, 1991 and Spielberger, 1996 regarding internal consistency; Jacobs, Latham, & Brown, 1988 regarding test-retest reliability; and Forgays, Forgays, & Spielberger, 1997 regarding consistency of the factor structure). Research on response styles on the STAXI-2 has identified several different approaches individuals tend to take when completing the questionnaire. Gollwitzer, Eid, and Jurgensen (2005) suggest that validity is maximized when response style is taken into consideration. The outward expression of anger is associated with violent behavior and this subscale will be of primary interest in these analyses. Items are prompted with “When I am angry or furious, I...” and response options on a

4-point Likert-type scale range from Almost Never to Almost Always. This subscale includes 8 items (e.g., I make sarcastic remarks to others, I do things like slam doors, I strike out at whatever infuriates me, I say nasty things). Internal consistency of the AX/Out subscale in the present study is .76

Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987, 1989), subscales: Peer Alienation, Peer Trust, Peer Communication, and Parent Alienation. The IPPA was designed to assess cognitive-affective dimensions of attachment, conceptualized as quality of affect toward parents and peers. Three dimensions, including feeling of mutual trust, quality of communication, and feelings of isolation and anxiety with regard to relationships are assessed separately for parents and peers. This self-report questionnaire is rated by respondents on a 5-point, Likert-type scale and consists of 25 items. The IPPA has strong internal consistency (.86-.93) for parent and peer attachment and test-retest reliability of .93 for parents and .86 for peer subscales over a 3-week period of time. Concurrent validity is also strong (Armsden & Greenberg, 1994).

Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004), subscales: all. The DERS is a 36-item self-report measure developed to comprehensively assess individuals' levels of emotion regulation across six domains, including (1) ZERAWA, lack of emotional awareness, (2) ZERCLA, lack of emotional clarity, (3) ZERNON, non-acceptance of negative emotions, (4) ZERSTR, limited access to emotion regulation strategies perceived to be effective, (5) ZERIMP, difficulties controlling impulsive behavior when experiencing negative emotions, and (6) ZERGO, inability to engage in goal-directed behavior when experiencing negative emotions. Participants are asked to rate each item on a five-point Likert scale ranging from "almost never" to "almost always." The DERS has demonstrated high internal consistency ($\alpha = .93$), as well as good test-retest reliability over a period ranging from four to eight weeks with subscale coefficients ranging from .57 to .89 (Gratz & Roemer, 2004). The DERS has also shown

adequate construct and predictive validity, as it has been shown to be correlated with frequency of deliberate self-harm and frequency of intimate partner abuse, two clinically important behavioral outcomes thought to be associated with emotion dysregulation (Gratz & Roemer, 2004).

Furthermore, the DERS has been shown to be strongly correlated with an experiential measure of emotion regulation among patients with borderline personality disorder ($r = -.63$; see Gratz, Rosenthal, Tull, Lejuez, & Gunderson, 2006). Internal consistency in the current sample is excellent ($\alpha = .91$).

Analytic Strategy

Bivariate analyses. Bivariate correlations between all Study 3 variables were examined for associations in expected directions. To examine whether there was a significance difference between what are referred to in the statistical literature as ‘correlated correlations’ (i.e., two correlations, from the same sample, which share one variable, e.g., difference in the strength and magnitude of the association between CEN and conduct and CEA and conduct) of interest, Steiger’s Z-test was used (Steiger, 1980). This involved first employing Fisher’s transformation (i.e., changing r to a Z-score) and using the two resulting Z-scores in the significance testing equation (used online computer, FZT, at: <http://psych.unl.edu/psycrs/statpage/comp.html>).

The association among demographic (sex, race/ethnicity) variables revealed by the literature to yield group differences on effects of childhood maltreatment were examined via chi-square tests of independence and ANOVA for group differences on key Study 3 variables (e.g., parental substance abuse, childhood sexual abuse, childhood physical abuse, CEA, CEN, variables related to academic achievement, conduct, and social competence and friendship). Owing to significant differences on several key variables for participants identifying as Asian, separate hierarchical regression analyses were run for Asian versus non-Asian participants. Despite sex differences detected in the models (see Results: Study 3), exploration of sex as a

moderator of the association between CEM experience and developmental functioning in emerging adulthood were not significant and therefore not reported.

Multivariate analyses. Two independent variables, standardized sums of CEA items and CEN items, were used in the following regression analyses.

Hierarchical multiple regression (HMR). Separate hierarchical multiple regression analyses were performed for each CEM subtype (i.e., CEN vs. CEN). Hierarchical multiple regression was used to examine the predictive value of CEM experience (independent variable, continuous) on stage-salient developmental tasks (dependent variables) of emerging adulthood, which included (1) academic achievement (i.e., perceptions of one's academic competence and intellectual ability irrespective of GPA), (2) conduct (i.e., the degree to which one is generally rule- and law-abiding as well as follows generally-accepted guidelines in relationships, such as the way in which one expresses anger), and (3) social competence and friendship (i.e., one's perceptions of their close friendships as well as levels of peer trust and communication).

Hierarchical multiple regression allows independent variables to be entered in a fixed order in order to control for the effects of covariates. Hierarchical models controlled for demographic and childhood maltreatment-related variables, including (step 1) sex and race/ethnicity (black, Hispanic/ Latino) and (step 2) parental substance abuse, childhood physical abuse, childhood sexual abuse, witnessing interparental physical violence, and the CEM subtype not under study with regard to its unique predictive power (i.e., when examining unique predictive value of CEA, CEN was controlled and vice versa).

HMR: Assumptions. Assumptions of multiple regression (and statistics to evaluate them) include (1) quantitative or categorical (with two categories) predictors and quantitative, and a continuous, and unbounded outcome variable; (2) predictors should have non-zero variance; (3) absence of perfect multicollinearity (VIF and Tolerance statistics); (4) predictors uncorrelated with variables not included in the model; (5) homoscedasticity (i.e., variance should be constant

at each level of the predictor variables); (6) independent errors (Durbin-Watson test); (7) normally distributed errors; (8) independence (all values/levels of the outcome variable are independent); and (9) linearity (i.e., outcome variable values lie on a straight line). Assumptions of homoscedasticity, linearity, and normally distributed errors were examined for each model via visual inspection of histogram and normal probability plots of residuals. There are also sample size requirements for linear regression; to test the overall model, Green (1991) recommends a minimum sample size of $50+8k$ (where k = number of predictors) and to test individual predictors, a sample size of $104+k$ is recommended. To achieve a high level of power (Cohen's $d = .8$, Cohen, 1988) when detecting a predicted effect size that is small, a minimum sample size of 600 with up to 6 predictors is required (Field, 2013; Miles & Shevlin, 2001). The current investigation's sample size and number of predictors used suggest it is well-powered.

Evaluation of HMR. Hierarchical multiple regression (HMR) was evaluated via the model summary's R^2 statistic (i.e., the amount of variability in the outcome that is accounted for by the predictors) and the change in R^2 from the first model (with only covariates) to the fully specified model (including CEM subtype under study), if significant. The ANOVA table's F -ratio (i.e., ratio of improvement in predictive power with, versus without, all predictors), the coefficients table's unstandardized b -values (reflecting individual contribution of each predictor to the model when all other predictors are held constant), and standardized beta (β) values were also inspected. Continuous predictor variables were centered (CEA, CEN), which involved subtracting the sample mean from each participant's score on a given variable, thereby yielding deviation scores with a sample mean of zero. This procedure does not affect correlations between variables and allows for meaningful interpretation of the relationship between independent and dependent variables (Cohen, Cohen, West, & Aiken, 2003). Standard scores of dependent variables were calculated and used in HMR analyses.

Mediation

To test hypothesized mediation models, hierarchical multiple regression will be used. Mediation will be tested using Baron and Kenny's (1986) four-step approach. For example, to test the mediating effect of alexithymia on the relation between CEN and social competence:

Step 1: Perform regression with social CEA predicting social competence.

Step 2: Perform regression with CEA predicting the proposed mediator, alexithymia.

Step 3: Perform regression with alexithymia predicting social competence.

Step 4: Finally, perform multiple regression analyses with CEA and alexithymia predicting social competence.

Steps one through three establish significant associations among variables under study. Steps 1 through 3 should be significant if mediation is present. In step four, mediation effects are supported if emotion regulation (mediator) remains significant after controlling CEM experience (predictor). If CEM fails to retain significance when emotion regulation (mediator) is controlled, full mediation is supported. If CEA and alexithymia are significant, partial mediation is present.

In multiple regression analyses to examine hypotheses specifying different mediators of the association between CEM and specific stage-salient tasks of emerging adulthood, sex, ethnicity (in models including participants identifying as white, black, or Hispanic/ Latino), parental substance abuse, child physical abuse, child sexual abuse, witnessing interparental physical violence, and the CEM subtype not under direct investigation in a particular model (e.g., if examining CEA, CEN will be controlled).

Results (Study 3)

In order to render parametric statistics valid, data were examined for nonnormality (i.e., skewness > 2, kurtosis > 7; Curran, West, & Finch, 1996). No transformations were required because all variables' skewness and kurtosis values fell within these limits.

Correlations between Childhood Maltreatment & Outcome Variables

Table 14 displays descriptive statistics and bivariate correlations for variables for total sample and by sex.

CEM (continuous) & other maltreatment experiences. Associations between participant reports of childhood emotional maltreatment (childhood emotional neglect and childhood emotional abuse) and other childhood maltreatment experiences were in expected directions, including childhood physical abuse (CEA, $r = .336, p < .001$; CEN, $r = .188, p < .001$), childhood sexual abuse (CEA, $r = .227, p < .001$; CEN, $r = .191, p < .001$), and witnessing interparental physical violence (CEA, $r = .209, p < .001$; CEN, $r = .194, p < .001$) and witnessing interparental verbal abuse (CEA, $r = .561, p < .001$; CEN, $r = .346, p < .001$).

CEM (continuous) & outcome variables. CEM was also related to academic achievement (GPA: CEA, $r = -.043, p = .237$, CEN, $r = -.043, p = .237$; self-perception of academic competence: CEA, $r = -.184, p < .001$, CEN, $r = -.174, p < .001$; self-perception of intellectual ability: CEA, $r = -.175, p < .001$, CEN, $r = -.205, p < .001$), conduct (criminal acts: CEA, $r = .090, p = .013$, CEN, $r = .133, p < .001$, expressed anger: CEA, $r = .261, p < .001$, CEN, $r = .139, p < .001$), and social competence and friendship (self-perception of close friendships: CEA, $r = -.168, p < .001$, CEN, $r = -.199, p < .001$, peer alienation: CEA, $r = -.169, p < .001$, CEN, $r = -.076, p = .038$, peer trust: CEA, $r = -.161, p < .001$, CEN, $r = -.149, p < .001$, and peer communication: CEA, $r = -.140, p < .001$, CEN, $r = -.193, p < .001$) in expected directions.

Other maltreatment experiences & outcome variables. Correlations between childhood physical abuse (CPA) and childhood sexual abuse (CSA) and outcome variables were

generally similar in direction to associations between CEM and GPA as well as perceptions of academic achievement (GPA, CPA, $r = -.063$, $p = .084$, CSA, $r = -.051$, $p = .163$; perceptions of academic competence, CPA, $r = -.029$, $p = .425$, CSA, $r = -.105$, $p = .004$; perceptions of intellectual ability, CPA, $r = .001$, $p = .986$, CSA, $r = -.112$, $p = .002$), with notable differences regarding the lack of significant findings between CPA and academic functioning.

With regard to conduct, correlations were significant for CPA ($r = .192$, $p < .001$) but not for CSA ($r = .066$, $p = .071$) and criminal activity, and with both CPA and CSA being significantly associated with problematic expressions of anger (CPA, $r = .084$, $p = .020$, CSA, $r = .112$, $p = .002$).

With regard to social functioning and friendship, CPA again stood out in that it was not significantly associated with perceptions of close friendships ($r = -.010$, $p = .779$) while CSA was significantly correlated with perceptions of close friendships ($r = -.089$, $p = .014$). With regard to peer attachment variables, both CPA and CSA generally failed to produce significant correlations (peer alienation, CPA, $r = -.003$, $p = .925$, CSA, $r = -.092$, $p = .397$; peer trust, CPA, $r = .013$, $p = .724$, CSA, $r = -.059$, $p = .107$; peer communication, CPA, $r = -.008$, $p = .829$, CSA, $r = -.050$, $p = .165$) despite CEM variables having been significantly correlated to all peer attachment variables.

An interesting pattern of correlations emerged with regard to witnessing interparental physical violence versus witnessing interparental verbal abuse on outcome variables across the three domains under study. While CEN and CEA were both significantly correlated with all domains under study, witnessing interparental verbal abuse (but not witnessing interparental physical violence) was significantly associated with academic functioning (perceptions of academic competence, physical, $r = .015$, $p = .683$, verbal, $r = -.140$, $p < .001$; perceptions of intellectual ability, physical, $r = -.017$, $p = .639$, verbal, $r = -.090$, $p = .013$); conduct (crime, physical, $r = .045$, $p = .218$, verbal, $r = .128$, $p < .001$; problematic expressions of anger, physical,

$r = .034, p = .346$, verbal, $r = .187, p < .001$); and social functioning and friendship (perceptions of close friendships, physical, $r = -.087, p = .017$, verbal, $r = -.131, p < .001$; peer alienation, physical, $r = -.031, p = .397$, verbal, $r = -.117, p < .001$; peer trust, physical, $r = -.028, p = .434$, verbal, $r = -.099, p = .007$; peer communication, physical, $r = -.067, p = .066$, verbal, $r = -.127, p < .001$).

Correlations between Sex, Maltreatment Experiences, & Outcomes Variables

Table 14 displays descriptive statistics and bivariate correlations for variables for total sample and by sex.

CEM (continuous CEN and CEA). For females, the magnitude of association between CEA and peer trust ($r = -.126, p < .001$) was greater than for males ($r = -.221, p < .05$). This was also found for females, with stronger associations between CEN and criminal acts ($r = .196, p < .001$; males: $r = .095, p < .05$), expressed anger ($r = .111, p < .001$; males: $r = .085, p < .05$), and peer alienation ($r = -.126, p < .001$; males: $r = -.110, p < .01$).

Physical Abuse. With regard to associations between other forms of maltreatment and outcome variables of interest, females who were physically abused endorsed more expressed anger than males.

Sexual Abuse. With regard to associations with sexual abuse, males endorsed more problems with close friendships, greater peer alienation, more difficulties with peer trust, and more difficulty with peer communication than females who were sexually abused. Females who were sexually abused endorsed more criminal acts than males who were sexually abused. For females who witnessed domestic violence, associations were stronger on several variables, including increased criminal acts, more expressed anger, more problems with close friendships, and greater peer alienation.

Sex, Race/ Ethnicity, & CEM (continuous)

CEM (continuous CEN and CEA). A two-way multivariate analysis of variance (MANOVA) revealed significant main effects of sex, $F(1, 1872) = 4.80, p = .029$, and ethnicity, $F(3, 1872) = 13.32, p < .001$, and their interaction (sex X ethnicity), $F(3, 1872) = 2.75, p = .041$, for CEA. Significant main effects of sex, $F(1, 1875) = 7.57, p = .006$, and ethnicity, $F(3, 1872) = 10.78, p < .001$, were found for CEN, but no sex by ethnicity interaction effect. Women endorsed significantly higher levels of CEA ($M = 13.55, SD = .17$) and CEN ($M = 8.53, SD = .11$) than men. Bonferroni corrected post-hoc comparisons revealed that participants identifying as Asian reported significantly more CEA ($M = 13.95, SD = .16$) and CEN ($M = 8.84, SD = .10$) than participants identifying as white (CEA: $p = .002$, CEN: $p < .001$) or Hispanic/Latino –a (CEA: $p < .001$, CEN: $p = .001$). Further, male participants identifying as black ($M = 14.04, SD = .97$) or Asian ($M = 13.81, SD = .23$) endorsed higher levels of CEA than male participants identifying as white ($M = 11.49, SD = .50$) or Hispanic/Latino –a ($M = 11.88, SD = .37$), whereas females endorsed fairly similar levels of CEA across categories of ethnicity.

Sexual abuse, physical abuse, and witnessing interparental (physical) violence.

Inspection of adjusted residuals of chi-square analyses examining sex and ethnicity against dichotomized maltreatment variables revealed that more females reported witnessing interparental domestic violence (physical) than expected, witnessed more interparental verbal abuse than expected, and experienced more physical and sexual abuse in childhood than expected. Participants identifying as Asian/Pacific Islander or Hispanic/Latino –a endorsed higher levels of witnessing interparental (physical) domestic violence than expected. Hispanic/Latino –a participants endorsed higher levels of sexual abuse, while Asian/Pacific Islander participants endorsed significantly lower levels of sexual abuse in childhood than expected. Groups did not differ over ethnicity for witnessing interparental verbal abuse or child physical abuse.

Sex & Outcome Variables

With regard to academic achievement, females endorsed significantly lower levels of perceived academic competence ($p < .001$) and perceived intellectual ability ($p < .001$) than males. With regard to conduct, females committed significantly fewer crimes than males ($\chi^2 = 28.23$, $df=1$, $p < .001$). With regard to social competence and friendship, females endorsed significantly higher levels of close friendship ($p = .011$), peer trust ($p < .001$), and peer communication ($p < .001$) than males. No significant main effects for sex were found for expressed anger ($p = .602$), and peer alienation ($p = .396$).

Race/ Ethnicity & Outcome Variables

With regard to academic achievement and race/ethnicity, Bonferroni corrected post-hoc comparisons revealed that participants identifying as Asian/Pacific Islander endorsed significantly lower levels of perceived academic competence than participants identifying as white ($p < .001$), black ($p = .012$), or Hispanic/Latino ($p = .004$). With regard to social competence and friendship, participants identifying as Asian endorsed lower levels of peer trust (compared to white, $p < .001$, and Hispanic/Latino, $p < .001$, participants), lower levels of peer communication (compared to all other participants: white, $p < .001$, black, $p = .046$, Hispanic/Latino –a, $p < .001$), and higher levels of peer alienation (compared to white, $p < .001$, and Hispanic/Latino, $p < .001$, participants). No significant main effects of race/ethnicity were found for conduct, i.e., committed crimes ($\chi^2 = 6.85$, $df=3$, $p = .077$) or expressed anger ($p = .602$). No differences across ethnic groups were found on number of crimes committed and ratings of expressed anger.

Sex, Race/ Ethnicity, & Outcome Variables

While no main effects of sex or ethnicity were detected for anger expression, a significant sex by race/ ethnicity interaction effect ($p = .024$) revealed that Hispanic/Latino men ($M = 15.18$, $SD = .31$) reported lower levels of anger expression than Hispanic/Latina females ($M = 16.09$, $SD = .20$).

Multivariate Models

Hierarchical multiple regression (HMR) analyses were performed to investigate the ability of CEA and CEN to predict levels of self-perceptions of academic competence, conduct (crime and problematic anger), and perceived social competence and friendship after controlling for (step 1) sex, race/ethnicity, (step 2) parental substance abuse, childhood physical abuse, childhood sexual abuse, witnessing (physical) domestic violence, and childhood emotional maltreatment type not under study (i.e., CEA or CEN). Owing to consistent differences between Asian and non-Asian participants on study variables, remaining analyses compare Asians to non-Asians. Preliminary analyses ensured absence of violation of assumptions of normality, linearity, independent errors, homoscedasticity, and absence of multicollinearity. Correlations among predictor variables (see Table 14) generally ranged from weak (0.1 to 0.3) to moderate (0.4 to 0.6), indicating unlikely problematic multicollinearity (Tabachnick & Fidell, 2007). Most predictor variables were significantly associated with the dependent variables, supporting the use of multiple linear regression on the present data. Correlations between predictor and dependent variables were generally weak to moderate.

Main Associations

Self-perceptions of academic competence and intellectual ability. The first set of analyses examined the association between CEM experiences and self-perceptions of academic and intellectual functioning. Zero-order correlations support relationships between (see Table 14) two of the three indicators of academic achievement examined (scholastic competence and intellectual ability) and CEM (separate CEA and CEN variables); however, no association was found between the CEM variables and GPA, perhaps owing to a large amount of missing data for GPA (56.5%). GPA was therefore not examined in hierarchical regression analyses, but GPA across maltreatment categories (No CEM, CEN only, CEA only, and combined CEA/CEN) was examined and found to be similar across CEM subgroups, $F(3, 886) = 1.476, p = .220$, and

proportion of missing GPA data did not differ across CEM subgroups ($\chi^2 = 7.369$, $df=3$, $p = .061$). Therefore, differences in perceived scholastic competence and intellectual ability across CEM subgroups are unlikely to be influenced by actual GPA. Thus, differences in perceptions of academic competence and intellectual ability likely owe more to how students see themselves rather than objective measures of scholastic competence or intellectual ability potentially reflected in GPA.

Self-perceptions of academic competence: White, black, and Hispanic/Latin-o/a participants. With regard to self-perceptions of scholastic competence, predictors in the second model, including (step 1) sex and ethnicity, and (step 2) parental substance abuse, child physical abuse, child sexual abuse, witnessing interparental physical violence, and CEN better accounted for variance in self-perceptions of academic competence (i.e., yielding significant change in R^2 statistic from model 1 to model 2, but not from models 1 or 2 to 3), R^2 change = .026, $F(5, 808) = 4.335$, $p = .001$. The second model better predicted self-perception of academic competence than the first model, which included only sex and ethnicity R^2 change = .005, $F(3, 813) = 1.388$, $p = .245$, and the third and final model, which included steps 1 and 2 as well as a third step comprising CEN, R^2 change = .001, $F(1, 807) = 1.009$, $p = .315$. Thus, CEA did not exert an impact above and beyond CEN and other types of maltreatment; CEN, $t(808) = -4.435$, $p < .001$, however, uniquely predicted lower scores on self-perception of academic competence when sex, ethnicity, and other childhood maltreatment types and parental substance abuse were held constant. This finding persisted when CEA was controlled, R^2 change = .012, $F(1, 807) = 9.600$, $p = .002$.

Self-perceptions of academic competence: Asian participants. For the final model including only participants identifying as Asian, R^2 change = .008, $F(1, 765) = 7.072$, $p = .010$, both CEN, $t(765) = -2.659$, $p = .008$, and CEA, $t(765) = -2.583$, $p = .010$, were found to make

statistically-significant impacts on perceptions of academic competence, particularly for emotionally-maltreated Asian females, $t(765) = -3.408, p = .001$.

Self-perceptions of intellectual ability: White, black, and Hispanic/ Latin-o/-a participants. Final models examining the impact of CEM on self-perceptions of intellectual ability reveal similar findings for participants identifying as white, black, or Hispanic/Latino –a (i.e., that CEA does not uniquely predict self-perceptions of intellectual ability, R^2 change = .002, $F(1, 805) = 1.544, p = .214$). Again, the data best fit the penultimate model, R^2 change = .045, $F(5, 806) = 7.682, p < .001$, with CEN, $t(806) = -5.909, p = .009$, significantly and negatively impacting perceptions of intellectual ability, particularly for participants identifying as black, $t(806) = 3.435, p = .001$. CEN's, $t(805) = -4.175, p < .001$, predictive power holds even when CEA was controlled in the model, R^2 change = .020, $F(1, 805) = 17.430, p < .001$.

Self-perceptions of intellectual ability: Asian participants. For participants identifying as Asian, a similar pattern to self-perception of academic competence was found for self-perception of intellectual ability. Both CEN, $t(764) = -3.141, p = .002$, and CEA, $t(764) = -2.371, p = .018$, continued to make statistically-significant impacts on perceptions of intellectual ability when the other was held constant, particularly for emotionally-maltreated Asian females, $t(764) = -4.867, p < .001$.

Types of crimes committed: White, black, and Hispanic/ Latin-o/-a participants. For participants identifying as white, black, or Hispanic/ Latino –a, the full model (controlling CEN), R^2 change = .011, $F(1, 769) = 8.923, p = .003$, better accounted for variance in number of types of crime committed than the null model. It was found that CEN did not contribute to variation in number of types of crime committed in the absence of CEA or when CEA was controlled. CEA, $t(769) = 2.987, p = .003$, on the other hand, significantly predicted number of types of crime committed even when CEN was controlled, R^2 change = .011, $F(1, 769) = 8.923, p = .003$.

Further, being male, $t(769) = -4.307, p < .001$, and having a substance-abusing parent, $t(769) = 2.199, p = .028$, predicts increases in number of types of crime committed.

Types of crimes committed: Asian participants. For participants identifying as Asian, CEA did not impact number of types of crime committed whether CEN was or was not controlled; however, CEN, R^2 change = .008, $F(1, 729) = 6.477, p = .011$, influenced the number of types of crimes committed even when CEA was controlled. Further, this effect was intensified for Asian males, $t(729) = -4.905, p < .001$ with a history of physical abuse, $t(729) = 3.543, p < .001$, and/or sexual abuse, $t(729) = 1.983, p = .048$.

Problematic expressions of anger: White, black, and Hispanic/ Latin-o/-a participants. With regard to outwardly expressed anger, another measure of conduct, CEA, $t(812) = 5.077, p < .001$, uniquely and significantly predicted higher levels of outwardly expressed anger for participants identifying as white, black, or Hispanic/ Latino –a, $R^2 = .053, F(9, 812) = 5.073, p < .001$. All other effects were non-significant in the final model. CEN failed to have an impact on outwardly expressed anger when CEA was and was not controlled.

Problematic expressions of anger: Asian participants. The same pattern of outwardly expressed anger and CEM experiences was observed for Asian participants.

Self-perceptions of close friendships: White, black, and Hispanic/ Latin-o/-a participants. With regard to social competence and friendship, CEN, $t(806) = -5.097, p < .001$, exerted unique and significant effects on self-perceptions of close friendship with CEA controlled and found to be noncontributory to the model, $R^2 = .059, F(9, 806) = 5.650, p < .001$, particularly for males, $t(806) = 2.554, p = .011$, while CEA did not uniquely predict perception of close friendships for participants identifying as white, black, or Hispanic/ Latino –a.

Self-perceptions of close friendships: Asian participants. For Asian-identified participants, CEA (with CEN held constant), $t(764) = -2.383, p = .017$, and CEN (with CEA held constant), $t(764) = -4.595, p < .001$, both exerted unique and significant effects on perceptions of

close friendships, $R^2 = .082$, $F(7, 764) = 5.650$, $p < .001$. Scores on perception of close friendships decreased more dramatically for Asian males, $t(764) = 2.000$, $p = .046$.

Peer alienation: White, black, and Hispanic/ Latin-o/-a participants. CEA, with, $t(737) = -2.816$, $p = .005$, and without CEN held constant, but not CEN was found to exert significant influence on ratings of peer alienation (reverse coded, so subscale ranging from more peer alienation at the low end and less peer alienation at the high end), $R^2 = .066$, $F(9, 737) = 5.788$, for participants identifying as white, black, or Hispanic/ Latino –a. Ratings of peer alienation increased faster for males, $t(737) = 2.096$, $p = .036$.

Peer alienation: Asian participants. A similar pattern, albeit without significant sex differences, was revealed for Asian students, $R^2 = .047$, $F(7, 720) = 5.088$, $p < .001$, with higher levels of CEA experiences, $t(727) = -4.523$, $p < .001$, predicting higher levels of peer alienation.

Peer trust: White, black, and Hispanic/ Latin-o/-a participants. CEN, $t(738) = -5.012$, $p < .001$, but not CEA, uniquely predicted peer trust for students identifying as white, black, or Hispanic/ Latino –a, $R^2 = .109$, $F(9, 738) = 9.988$, $p < .001$. Further, higher levels of CEA predicted lower levels of peer trust, particularly when male, $t(738) = 5.463$, $p < .001$, and/or black, $t(738) = -2.023$, $p < .043$, or Hispanic/Latino –a, $t(738) = -2.491$, $p = .013$, when compared to white students.

Peer trust: Asian participants. For students identifying as Asian, peer trust was uniquely predicted by CEA, $t(719) = -1.989$, $p = .047$, and CEN, $t(719) = -2.016$, $p = .044$, experiences, even with the other held constant, $R^2 = .056$, $F(7, 719) = 6.068$, $p < .001$. This association was intensified for Asian males, $t(738) = 2.404$, $p = .016$, with a history of physical abuse, $t(719) = -2.192$, $p = .029$.

Peer communication: White, black, and Hispanic/ Latin-o/-a participants. CEA, $t(740) = 1.998$, $p = .046$, and CEN, $t(740) = -5.411$, $p < .001$, (reciprocally controlled in separate analyses) uniquely and significantly predicted peer communication, $R^2 = .119$, $F(9, 740) =$

11.094, $p < .001$, for participants identifying as white, black, or Hispanic/ Latino –a. Poorer scores on peer communication were predicted by identifying as male, $t(740) = 7.218$, $p < .001$, and/or Hispanic/Latino –a, $t(740) = -3.637$, $p < .001$.

Peer communication: Asian participants. For students identifying as Asian, only CEN, $t(718) = -3.299$, $p = .001$, uniquely predicted peer communication, $R^2 = .055$, $F(7, 718) = 5.980$, $p < .001$. Poorer ratings of peer communication were predicted when participants were male, $t(718) = 3.134$, $p = .002$, and/or had a history of physical abuse, $t(718) = -2.031$, $p = .043$.

Mediation

Separate regression analyses to test for mediation were run first for participants identifying as white, black, or Hispanic/ Latino -o /-a and then for participants identifying as Asian. Sex, ethnicity (for the non-Asian sample), parental substance abuse, childhood physical abuse, childhood sexual abuse, witnessing interparental (physical) domestic violence, and the CEM subtype not under study were controlled.

Self-perceptions of academic competence. The first series of regression analyses were run in order to test the proposed model that low self-esteem mediates the relationship between CEM and perceptions of academic and intellectual functioning (i.e., self-perception of scholastic competence and self-perception of intellectual ability).

Participants identifying as white/Caucasian, black/African American, or Latino, -a/Hispanic. First, CEA was not found to predict self-perception of scholastic competence when sex, ethnicity, childhood experiences of physical and sexual abuse, parental substance abuse, witnessing interparental (physical) violence, and CEN were controlled, $b = -.021$, $t(801) = -.424$, $p = .671$. Mediation analyses were therefore not pursued.

When CEA was controlled, the relationship between CEN and self-perception of scholastic competence (step 1) was significant, $b = -.113$, $t(801) = -2.367$, $p = .018$. In step 2, the proposed mediator (self-esteem) was regressed on CEN and was found to be significant, $b = -$

.201, $t(801) = -3.952, p < .001$. Step 3 revealed that the mediator (self-esteem), when CEN was controlled, significantly predicted self-perception of scholastic competence, $b = .393, t(798) = 9.436, p < .001$. In step 4, CEN did not significantly predict self-perception of scholastic competence when the mediator (self-esteem) was controlled. This suggests that self-esteem fully mediates the relationship between CEN and self-perceptions of scholastic competence. A Sobel test confirmed these findings, verifying the significant indirect effect of CEN on perceptions of scholastic competence through low self-esteem ($z = -3.628, p < .001$).

In this model examining mediators of the relationship between CEN and self-perception of scholastic competence, CEN was also found to significantly predict emotion regulation, $b = -.249, t(801) = 5.232, p < .001$, and parent alienation, $b = -.435, t(801) = -11.114, p < .001$ in step 2. When CEN was controlled in step 3, emotion regulation, $b = -.152, t(798) = -3.547, p < .001$ but not parent alienation, $b = -.032, t(798) = -.716, p = .474$, significantly predicted self-perception of scholastic competence. Therefore, parent alienation was not examined in step 4. When the mediator (emotion regulation) was controlled in step 4, the relationship between CEN and self-perception of scholastic competence no longer retained significance, $b = -.010, t(798) = -.208, p = .835$. This suggests that emotion regulation fully mediates the relationship between CEN and self-perception of scholastic competence. A Sobel test verified this finding, demonstrating the significant indirect effect of CEN on perceptions of scholastic competence through emotion regulation ($z = -2.900, p = .004$). Additionally, ethnicity for students identifying as black, $b = -.307, t(798) = -2.774, p = .006$, or Hispanic/Latino –a, $b = -.313, t(798) = -4.446, p < .001$.

Follow-up analyses examining the specific aspects of emotion regulation mediating the relationship between CEN and self-perception of scholastic competence revealed that CEN significantly predicted ZERNON, $b = .144, t(801) = 2.852, p = .004$, ZERIMP, $b = .117, t(801) = 2.451, p = .014$, ZERAWA, $b = .303, t(801) = 5.677, p < .001$, ZERSTR, $b = .207, t(801) = 4.239,$

$p < .001$, and ZERCLA, $b = .231$, $t(801) = 4.782$, $p < .001$ but not ZERGO, $b = .086$, $t(801) = 1.662$, $p = .097$. When CEN was controlled in step 3, only ZERAWA, $b = -.082$, $t(793) = -2.187$, $p = .029$, was found to be a significant predictor of scholastic competence. Step 4 failed to reveal a statistically-significant relationship between CEN and self-perception of scholastic competence when all aspects of emotion regulation tested as mediators were controlled, $b = -.004$, $t(793) = -.093$, $p = .926$, suggesting that ZERAWA fully mediates the relationship between CEN and self-perceptions of scholastic competence. Sobel tests confirmed the indirect effect of CEN on self-perceptions of scholastic competence through ZERAWA ($z = -2.03$, $p = .044$). Additionally, ethnicity for students identifying as black, $b = -.280$, $t(793) = -2.547$, $p = .011$, or Hispanic/Latino –a, $b = -.314$, $t(793) = -4.395$, $p < .001$.

Participants identifying as Asian. CEA significantly predicted self-perception of scholastic competence, $b = -.126$, $t(760) = -2.491$, $p = .013$ (step 1). In step 2, CEA predicted self-esteem, $b = -.191$, $t(760) = -4.015$, $p < .001$, parent alienation, $b = -.395$, $t(760) = -10.219$, $p < .001$, and emotion regulation, $b = .197$, $t(760) = 4.056$, $p < .001$. When CEA was controlled in step 3, only self-esteem retained its significance in predicting self-perception of scholastic competence, $b = .491$, $t(757) = 11.633$, $p < .001$. Sex also retained significance in the final model, $b = -.129$, $t(757) = -3.506$, $p < .001$.

CEN also significantly predicted self-perception of scholastic competence, $b = -.105$, $t(760) = -2.583$, $p = .010$. In step 2, CEN predicted self-esteem, $b = -.187$, $t(760) = -4.587$, $p < .001$, parental alienation, $b = -.355$, $t(760) = -9.415$, $p < .001$, and emotion regulation, $b = .144$, $t(760) = 3.748$, $p < .001$. When controlling for CEN in step 3, only self-esteem retained its significance, $b = .491$, $t(757) = 11.633$, $p < .001$. When self-esteem was controlled, CEN did not retain its significance in predicting self-perception of scholastic competence, suggesting that self-esteem fully mediates the relationship between CEN and self-perception of scholastic competence. Sobel's test support the indirect effect of CEN on self-perception of scholastic

competence through self-esteem ($z = -4.254, p < .001$). Sex also retained its significance in the final model, $b = -.212, t(757) = -3.506, p < .001$.

Self-perceptions of intellectual ability. The first series of regression analyses were run in order to test the proposed model that low self-esteem mediates the relationship between CEM and perceptions of academic and intellectual functioning (i.e., self-perception of scholastic competence and self-perception of intellectual ability).

Participants identifying as white/Caucasian, black/African American, or Latino, -a/Hispanic. In step 1, the relationship between CEA and self-perception of intellectual ability was not significant, $b = -.032, t(801) = -.670, p = .503$. Therefore, mediation of the relationship between CEA and self-perception of intellectual ability was not pursued further.

For CEN, step 1 supported a significant relationship between CEN and self-perception of intellectual ability. In step 2, CEN significantly predicted all tested mediators (see above). When CEN was controlled in step 3, emotion regulation, $b = -.175, t(798) = -4.484, p < .001$, and self-esteem, $b = .451, t(798) = 11.273, p < .001$, significantly predicted self-perception of intellectual ability, but not parent alienation, $b = -.028, t(798) = -.680, p = .496$. In step 4, the relationship between CEN, $b = -.038, t(798) = -.793, p = .428$, and self-perception of intellectual ability failed to retain its significance when emotion regulation and self-esteem were controlled. This suggests that both emotion regulation and self-esteem fully mediate the relationship between CEN and self-perception of intellectual ability. Sobel tests confirmed the indirect effect of CEN through emotion regulation ($z = -.044, p = .001$) and self-esteem ($z = -3.716, p < .001$) – a similar pattern to self-perception of scholastic competence. Additionally, sex, $b = -.221, t(798) = -3.534, p < .001$, ethnicity (for participants identifying as Hispanic/ Latino –a), $b = -.199, t(798) = -3.014, p = .003$, and CEA, $b = .085, t(798) = 1.985, p = .047$ retained their significance in the final model.

Previous analyses examining the mediating effects of emotion regulation on the relationship between CEM and self-perception of scholastic competence (above) show that all

emotion regulation subcategories are significantly predicted by CEN with the exception of ZERGO (step 2). When CEN is controlled in step 3, only ZERAWA, $b = -.126$, $t(793) = -3.639$, $p < .001$ emerges, again, as a significant predictor of self-perception of intellectual ability. CEN fails to retain its significance, $b = -.022$, $t(793) = -.457$, $p = .648$ when ZERAWA is controlled, suggesting that ZERAWA fully mediates the relationship between CEN and self-perception of intellectual ability. The Sobel test supports this finding, ($z = -3.030$, $p = .002$). Additionally, sex, $b = -.245$, $t(793) = -3.931$, $p < .001$, and ethnicity (for participants identifying as Hispanic/Latino –a), $b = -.185$, $t(793) = -2.760$, $p = .006$.

Participants identifying as Asian. First, CEA, $b = -.112$, $t(760) = -2.452$, $p = .014$, predicted self-perception of intellectual ability. In step 2, CEA predicted self-esteem, parent alienation, and emotion regulation (see above). When CEA was controlled in step 3, self-esteem, $b = .429$, $t(757) = 11.630$, $p < .001$, and emotion regulation, $b = -.181$, $t(757) = -4.695$, $p < .001$, continued to predict self-perception of intellectual ability. When self-esteem and emotion regulation were controlled, CEA, $b = .009$, $t(757) = .219$, $p = .827$, failed to predict outcomes, suggesting that self-esteem and emotion regulation fully mediate the relationship between CEA and self-perception of intellectual ability for students identifying as Asian. Sobel tests confirmed the indirect effect of CEA on outcomes through self-esteem ($z = -4.032$, $p < .001$) and emotion regulation ($z = -3.246$, $p = .001$). Additionally, sex, $b = -.270$, $t(757) = -4.529$, $p < .001$, continued to predict self-perception of intellectual ability in the final model.

CEN, $b = -.126$, $t(760) = -3.110$, $p = .002$, predicted self-perception of intellectual ability. In step 2, CEN predicted self-esteem, parental alienation, and emotion regulation (see above). When controlling for CEN in step 3, self-esteem, $b = .429$, $t(757) = 11.630$, $p < .001$, and emotion regulation, $b = -.181$, $t(757) = -4.695$, $p < .001$, predicted self-perception of intellectual ability. When mediators were controlled in step 3, CEN failed to exert its influence on outcome, $b = -.016$, $t(757) = -.426$, $p = .670$, suggesting that self-esteem and emotion regulation fully mediate

the relationship between CEN and outcome. Sobel tests confirm the indirect effects of CEN on outcome through self-esteem ($z = -4.408, p < .001$) and emotion regulation ($z = -2.906, p = .004$). Additionally, sex, $b = -.202, t(760) = -2.911, p = .004$, and CEA, $b = -.112, t(760) = -2.452, p = .014$, retain their predictive power of outcome in the final model.

Crime. The first series of regression analyses were run in order to test the proposed model that emotion dysregulation mediates the relationship between CEM and conduct (i.e., number of types of crime committed and outwardly expressed anger).

Participants identifying as white/Caucasian, black/African American, or Latino, -a/Hispanic. Further examination of the relationship between CEA and number of types of crime committed reveals a significant relationship between CEA and crime, $b = .138, t(757) = 3.169, p = .002$. In step 2, CEA significantly predicts self-esteem, $b = -.179, t(757) = -3.688, p < .001$, parental alienation, $b = -.266, t(757) = -6.748, p < .001$, and emotion regulation, $b = .267, t(757) = 5.554, p < .001$. When CEA is controlled in step 3, only parent alienation, $b = .094, t(754) = 2.181, p = .030$, predicts crime. In the final step (4), CEA retains its significance, $b = .150, t(754) = 3.330, p = .001$ when parent alienation is controlled, suggesting that parent alienation partially mediates the relationship between CEA and crime. The Sobel test confirms the indirect effect of CEA on crime through parent alienation, $z = -2.055, p = .040$. Additionally, sex, $b = -.376, t(754) = -5.418, p < .001$, ethnicity (for participants identifying as black), $b = -.254, t(754) = -2.476, p = .014$, and CEN, $b = .108, t(754) = 2.324, p = .020$. CEN failed to predict number of types of crime committed, $b = .077, t(757) = 1.803, p = .072$.

Participants identifying as Asian. For students identifying as Asian, CEA, $b = .038, t(720) = .735, p = .46$, failed to predict crime. CEN, $b = .129, t(720) = 2.800, p = .005$, however, did predict crime. In step 2, CEN predicted self-esteem, parental alienation, and emotion regulation (see above). When controlling for CEN in step 3, the mediators failed to retain

significance and were therefore not tested further for mediating the relationship between CEN and crime.

Problematic expressed anger. The first series of regression analyses were run in order to test the proposed model that emotion dysregulation mediates the relationship between CEM and conduct (i.e., number of types of crime committed and outwardly expressed anger).

Outwardly expressed anger refers to a level and intensity of expressed anger that surpasses social norms regarding anger expression, and has the potential to lead to social and other consequences for an individual endorsing high levels of outwardly expressed anger.

Participants identifying as white/Caucasian, black/African American, or Latino, -a/Hispanic. CEA significantly predicts expressed anger, $b = .240$, $t(801) = 4.662$, $p < .001$ (step 1). In step 2, CEA significantly predicts self-esteem, parental alienation, and emotion regulation (see above). When CEA is controlled in step 3, only emotion regulation, $b = .411$, $t(798) = 9.212$, $p < .001$, retains its significance as a predictor of outwardly expressed anger. In step 4, with emotion regulation controlled, CEA retains its significance, $b = .142$, $t(798) = 2.845$, $p = .005$, suggesting that emotion regulation partially mediates the relationship between CEA and outwardly expressed anger. The Sobel test verifies the indirect relationship between CEA and outwardly expressed anger ($z = 4.603$, $p < .001$). In the final model, CEN retains its significance, $b = -.141$, $t(798) = -2.781$, $p = .006$.

Closer inspection of emotion regulation subcomponents reveals that CEA significantly predicts ZERNON, $b = .212$, $t(801) = 4.339$, $p < .001$, ZERGO, $b = .210$, $t(801) = 4.032$, $p < .001$, ZERIMP, $b = .231$, $t(801) = 5.136$, $p < .001$, ZERSTR, $b = .248$, $t(801) = 5.337$, $p < .001$, and ZERCLA, $b = .160$, $t(801) = 3.375$, $p = .001$, but not ZERAWA, $b = -.016$, $t(801) = -.318$, $p = .750$. With CEA controlled in step 3, only ZERIMP, $b = .569$, $t(793) = 10.891$, $p < .001$, predicts expressed anger. In step 4, CEA, $b = .104$, $t(793) = 2.198$, $p < .028$, retains its significance, suggesting that the relationship between CEA outwardly expressed anger is partially

mediated by ZERIMP. The Sobel test confirms the indirect effect of CEA on outwardly expressed anger through ZERIMP ($z = 4.630, p < .028$). In the final model, CEN, $b = -.112, t(793) = -2.327, p = .020$. Parent substance abuse, $b = .191, t(793) = 2.012, p = .045$, is also shown to be a significant predictor of outwardly expressed anger. CEN failed to predict expressed anger, $b = -.045, t(801) = -.889, p = .374$.

Participants identifying as Asian. In step 1, CEA, $b = .218, t(759) = 4.870, p < .001$, predicted expressed anger. In step 2, CEA predicted self-esteem, parent alienation, and emotion regulation (see above). When CEA was controlled in step 3, emotion regulation, $b = .340, t(756) = 8.095, p < .001$, continued to predict expressed anger. When emotion regulation was controlled in step 4, CEA, $b = .152, t(756) = 3.297, p = .001$, continued to exert an impact on expressed anger, suggesting that emotion regulation partially mediates the relationship between CEA and expressed anger. This was confirmed by Sobel tests ($z = 3.975, p < .001$). Additionally, CEN, $b = -.103, t(756) = -2.511, p = .012$, significantly impacted anger as well in the final model. CEN, $b = -.056, t(759) = .650, p = .518$, failed to predict expressed anger.

Self-perceptions of close friendships. The first series of regression analyses were run in order to test the proposed model that ratings of current quality of attachment to parents mediates the relationship between CEM and social competence and friendships (i.e., self-perception of close friendships, peer alienation, peer trust, peer communication).

Participants identifying as white/Caucasian, black/African American, or Latino, -a/Hispanic. CEA failed to predict perception of close friendships, $b = .015, t(801) = .314, p = .754$. CEN significantly predicted perception of close friendships, $b = -.240, t(801) = -5.024, p < .001$ (step 1). In step 2, CEN significantly predicted all tested mediators (see above). When CEN was controlled in step 3, only self-esteem, $b = .384, t(798) = 9.622, p < .001$, was found to significantly predict perception of close friendships. When self-esteem was controlled, CEN, $b = -.147, t(798) = -3.112, p = .002$, retained its significance (step 4), suggesting that the relationship

between CEN and perception of close friendships is partially mediated by self-esteem. The Sobel test confirmed this finding ($z = -3.923, p < .001$). Sex, $b = .224, t(798) = 3.136, p = .034$, and CEA, $b = .099, t(798) = 2.128, p = .034$, retained their significance in the model.

Participants identifying as Asian. CEA, $b = -.124, t(760) = -2.664, p = .001$, predicted perception of close friendships in step 1. In step 2, CEA predicted self-esteem, parent alienation, and emotion regulation (see above). When CEA was controlled in step 3, self-esteem, $b = .309, t(757) = 7.644, p < .001$, parent alienation, $b = .100, t(757) = 2.127, p = .034$, and emotion regulation, $b = -.119, t(757) = -2.829, p = .005$, continued to influence perceptions of close friendships. When mediators were controlled (step 4), CEA, $b = -.002, t(757) = -.037, p = .971$, failed to exert influence on outcome, therefore suggesting that mediators fully mediate the relationship between CEA and perceptions of close friendships for Asian students. Sobel tests support the indirect effect of CEA through self-esteem ($z = -3.733, p < .001$), parent alienation ($z = -2.083, p = .037$), and emotion regulation ($z = -2.368, p = .018$). Additionally, sex, $b = .271, t(760) = 3.853, p < .001$, and CEN, $b = -.193, t(760) = -4.678, p < .001$ significantly predict perception of close friendships in the final model.

CEN, $b = -.193, t(760) = -4.678, p < .001$, predicted perception of close friendships. In step 2, CEA predicted self-esteem, parent alienation, and emotion regulation (see above). When CEA was controlled in step 3, all mediators retained significance, as did CEN in step 4, suggesting that self-esteem, parent alienation, and emotion regulation partially mediate the relationship between CEN and perceptions of close friendships. Sobel tests confirmed these findings. Additionally, sex, $b = .214, t(757) = 3.278, p = .001$, retained its predictive power in the final model.

Peer alienation. The first series of regression analyses were run in order to test the proposed model that ratings of current quality of attachment to parents mediates the relationship

between CEM and social competence and friendships (i.e., self-perception of close friendships, peer alienation, peer trust, peer communication).

Participants identifying as white/Caucasian, black/African American, or Latino, -a/Hispanic. CEA predicted peer alienation, $b = -.125$, $t(725) = -2.504$, $p = .012$ (step 1). In step 2, CEA significantly predicted all tested mediators (see above). When CEA was controlled in step 3, self-esteem, $b = .198$, $t(722) = 5.140$, $p < .001$, parental alienation, $b = .143$, $t(722) = 3.318$, $p = .001$, and emotion regulation, $b = -.322$, $t(722) = -8.148$, significantly predicted peer alienation. In step 4, CEA failed to retain its significance, $b = .025$, $t(722) = .569$, $p = .569$ when mediators were controlled, suggesting that all three mediators under investigation fully mediate the relationship between CEA and peer alienation. Additionally, sex, $b = .195$, $t(722) = 2.817$, $p = .005$, and CEN, $b = .140$, $t(722) = 3.004$, $p = .003$.

Closer inspection of emotion regulation subcomponents revealed that, of the emotion regulation subcomponents predicted by CEA (see above, all but ZERAWA), peer alienation was predicted by ZERNON, $b = -.112$, $t(717) = -2.804$, $p = .005$, and ZERCLA, $b = -.131$, $t(717) = -3.086$, $p = .002$ when CEA was controlled (step 3). When the mediators were controlled, CEA failed to retain its significance in predicting peer alienation, $b = .026$, $t(717) = .587$, $p = .557$, suggesting that ZERNON and ZERCLA fully mediate the relationship between CEA and peer alienation. Sobel tests support the indirect effect of CEA on peer alienation via ZERNON ($z = -2.320$, $p = .020$), and ZERCLA ($z = -2.066$, $p = .039$). Additionally, sex, $b = .211$, $t(717) = 3.037$, $p = .002$, and CEN, $b = .138$, $t(171) = 2.952$, $p = .003$ retained significance in the final model. CEN failed to predict peer alienation, $b = -.060$, $t(725) = -1.217$, $p = .224$.

Participants identifying as Asian. CEA, $b = -.149$, $t(712) = -4.383$, $p < .001$, predicted peer alienation in step 1. In step 2, CEA predicted self-esteem, parent alienation, and emotion regulation (see above). When CEA was controlled in step 3, all mediators again retained their significance; however, CEA failed to continue to exert an influence on outcome when mediators

were controlled, suggesting mediators fully mediate the relationship between CEA and peer alienation. Sobel tests support these findings. CEN also retains predictive power in the final model. CEN failed to predict peer alienation, $b = -.013$, $t(712) = -.320$, $p = .749$.

Peer trust. The first series of regression analyses were run in order to test the proposed model that ratings of current quality of attachment to parents mediates the relationship between CEM and social competence and friendships (i.e., self-perception of close friendships, peer alienation, peer trust, peer communication).

Participants identifying as white/Caucasian, black/African American, or Latino, -a/Hispanic. CEA failed to predict peer trust, $b = .023$, $t(726) = .491$, $p = .623$. CEN significantly predicted peer trust, $b = -.238$, $t(726) = -5.041$, $p < .001$ (step 1). In step 2, CEN significantly predicted all tested mediators (see above). When CEN was controlled in step 3, self-esteem, $b = .264$, $t(723) = 6.626$, $p < .001$, and emotion regulation, $b = -.154$, $t(723) = -3.775$, $p < .001$, retained significance in predicting peer trust. CEN, in step 4, retained its significance, $b = -.134$, $t(723) = -2.812$, $p = .005$, suggesting that self-esteem and emotion regulation partially mediate the relationship between CEN and peer trust. Sobel tests support the indirect effect of CEN on peer trust through self-esteem ($z = -3.807$, $p < .001$) and emotion regulation ($z = -3.083$, $p = .002$). Additionally, ethnicity (participants identifying as black), $b = -.278$, $t(723) = -2.663$, $p = .009$, and sex, $b = .431$, $t(723) = 6.045$, $p < .001$, and CEA, $b = .106$, $t(723) = 2.321$, $p = .021$, retained significance in predicting peer trust.

Previous analyses examining the mediating effects of emotion regulation on the relationship between CEM and self-perception of scholastic competence (above) show that all emotion regulation subcategories are significantly predicted by CEN with the exception of ZERGO (step 2). When CEN is controlled in step 3, only ZERAWA, $b = -.123$, $t(718) = -3.502$, $p < .001$, and ZERCLA, $b = -.108$, $t(718) = -2.498$, $p = .013$, significantly predict peer trust. In step 4, CEN continues to significantly predict peer trust, $b = -.109$, $t(718) = -2.290$, $p = .022$,

suggesting that ZERAWA and ZERCLA partially mediate the relationship between CEN and peer trust. Sobel tests support the indirect effect of CEN on peer trust through ZERAWA ($z = -2.792, p = .005$) and ZERCLA ($z = -2.112, p = .035$). Additionally, ethnicity (for participants identifying as black), $b = -.262, t(718) = -2.512, p = .012$, and sex, $b = .418, t(718) = 5.885, p < .001$, continue to be significant predictors of peer trust in the final model.

Participants identifying as Asian. CEA, $b = -.121, t(712) = -2.940, p < .001$, predicted peer trust in step 1. In step 2, CEA predicted self-esteem, parent alienation, and emotion regulation (see above). When CEA was controlled in step 3, all mediators retained their predictive power; however, CEA failed to retain its predictive power, suggesting that the mediators fully mediate the relationship between CEA and peer trust. Sobel tests confirm these findings (self-esteem: $z = -2.397, p = .017$; parent alienation: $z = -2.173, p = .030$; emotion regulation: $z = -2.930, p = .003$).

CEN, $b = -.097, t(712) = -2.229, p = .026$, also significantly predicted peer trust for Asian students. In step 2, CEN predicted self-esteem, parent alienation, and emotion regulation (see above). When CEA was controlled in step 3, all mediators retained significance; however, CEN failed to predict peer trust when mediators were controlled, suggesting that mediators fully mediate the relationship between CEN and peer trust. Sobel tests supported these findings (self-esteem: $z = -2.533, p = .011$; parent alienation: $z = -2.172, p = .030$; emotion regulation: $z = -2.687, p = .007$). Additionally, sex, $b = .393, t(709) = 5.474, p < .001$, retained its predictive power over peer trust.

Peer communication. The first series of regression analyses were run in order to test the proposed model that ratings of current quality of attachment to parents mediates the relationship between CEM and social competence and friendships (i.e., self-perception of close friendships, peer alienation, peer trust, peer communication).

Participants identifying as white/Caucasian, black/African American, or Latino, -a/Hispanic. CEA failed to predict peer communication, $b = .094$, $t(728) = 1.899$, $p = .058$. CEN significantly predicted peer communication, $b = -.275$, $t(728) = -5.649$, $p < .001$. In step 2, CEN significantly predicted all tested mediators (see above). When CEN was controlled in step 3, self-esteem, $b = .243$, $t(725) = 5.758$, $p < .001$, and parent alienation, $b = .092$, $t(725) = 1.959$, $p = .050$ predicted peer communication. When mediators were controlled, CEN retained its significance, $b = -.154$, $t(725) = -3.055$, $p = .002$, suggesting that self-esteem and parent alienation partially mediate the relationship between CEN and peer communication. Sobel tests support the indirect of CEN on peer communication via self-esteem ($z = -3.315$, $p = .001$) but not parent alienation ($z = -3.631$, $p < .001$). Additionally, sex, $b = .601$, $t(725) = 3.665$, $p < .001$, and CEA, $b = .178$, $t(725) = 3.665$, $p < .001$, retained significance in predicting peer communication.

Participants identifying as Asian. For Asian-identified students, CEA, $b = -.043$, $t(711) = -.902$, $p = .367$, failed to predict peer communication. CEN, $b = -.148$, $t(711) = -3.482$, $p = .001$, did predict peer communication. CEN predicted self-esteem, parent alienation, and emotion regulation (see above). When CEA was controlled in step 3, mediators continued to influence outcome while, in step 4, CEN lost its predictive power, $b = -.054$, $t(708) = -1.214$, $p = .225$, suggesting that mediators fully mediate the relationship between CEN and peer communication. Sobel tests confirmed this findings for self-esteem ($z = -2.594$, $p = .009$) and parent alienation ($z = -2.875$, $p = .004$). Further, sex, $b = .412$, $t(708) = 5.834$, $p < .001$, retained its predictive power in the final model.

Discussion

Overview of Results

The present sequence of studies achieved the following goals: 1) examined and confirmed the discriminant validity of CEA and CEN, two proposed subtypes of CEM, 2) examined and identified unique ecological correlates of CEA, CEN, and combined CEA/CEN, with particular emphasis on family characteristics and processes, and 3) examined the associations between CEA and CEN on stage-salient tasks of emerging adulthood, including students' perceptions of their academic achievement and intellectual functioning, conduct (crime and aggressive, socially-inappropriate or ineffective expressions of anger), and self-perceptions of social functioning (ratings of relationship quality and interactions with close friends and peers).

Since causal relationships cannot be inferred from cross-sectional, retrospective self-report data, a developmental psychopathology perspective is used to guide discussion of theory-driven hypotheses regarding the unique correlates of CEM subtypes under examination in all studies. Within a developmental psychopathology perspective, attachment theory is heavily drawn upon (particularly in follow-up analyses in Study 3). Study 3 examined the potential mediating roles of self-esteem on the relationship between CEM and self-perceptions of academic competence, emotion regulation on conduct, and parent alienation on close friendships and peer interactions. For Study 3, differences were consistently detected for Asian-identified participants when compared to white, black, and Hispanic/Latino-identified participants; therefore, separate analyses were conducted for Asian-identifying versus students identifying as white, black, or Hispanic/Latino students in Study 3.

Study 1. Items from the CATS (Sanders & Giolas, 1991) Emotional Abuse subscale and the FBQ-B (Melchert & Kalemeera, 2009) Parental Responsiveness subscale (reverse-coded to reflect emotional neglect) were used to examine the factorability of items reflecting APSAC (1995) and others' conceptualization of CEN and CEA (see Table 2 for items). In this study, CEN

was defined by chronic unavailability and high levels of unresponsive parenting. CEA was defined by acts related to spurning (e.g., name-calling, ridiculing). Exploratory factor analysis yielded two factors comprising items reflecting CEN on one factor and items reflecting CEA on the second. Confirmatory factor analysis examined the fit of the data to a two-factor solution, allowing error terms on each factor to covary in order to control for shared method variance due to CEN items coming from one established scale (i.e., FBQ-B) and CEA items coming from another established scale (i.e., CATS). CFA supported EFA, providing evidence for discriminant validity of latent CEN and CEA constructs.

Study 2. In Study 2, *individual* (child's sex, disability status, and adoption status; parent's incarceration history, absence of 6 or more months during participant's upbringing, and substance abuse), *microsystem* (presence of and/or who served as maternal and paternal figures; family structure growing up; interparental physical violence and verbal abuse; experiences of childhood physical and/or sexual abuse; instrumental caregiving, expressive caregiving, and perceived unfairness; family cohesion, conflict, and control; positive and negative expressiveness), *exosystem* (parents' highest levels of education), and *macrosystem* (ethnicity) ecological factors associated with CEM subgroup membership were examined in order to begin to document the contexts in which CEA and CEN occur. CEM subgroup membership was first examined through preliminary bivariate analyses with significant findings for *individual child* (sex) and *parent* (incarceration, absence, and substance abuse), *microsystem* (maternal and paternal figure, family structure, witnessing interparental physical violence and verbal aggression, childhood physical and sexual abuse, and several aspects of family functioning, including parentification, i.e., instrumental and expressive caregiving as well as perceived unfairness; family cohesion, conflict, and control; and positive and negative expressiveness), *exosystem* (maternal education level), and *macrosystem* (ethnicity) ecological factors (see Table 11).

Participants endorsing significant experiences of *CEN Only*, in comparison to the No CEM/ Contrast group, tended to be female, not to have a maternal figure (in contrast to all other CEM subgroups as well as the No CEM/Contrast group), to have been raised by a single parent (in contrast to all other CEM subgroups as well as the No CEM/Contrast group), to endorse high levels of expressive caregiving, high levels of perceived unfairness, low levels of family cohesion (in comparison to all other CEM subgroups as well as the No CEM Contrast group), and low levels of positive dominant expression. Participants endorsing significant experiences of *CEA Only*, in comparison to the No CEM/Contrast group, tended to be female, to witness interparental verbal abuse (in contrast to all other CEM subgroups as well as the No CEM/Contrast group), to endorse high levels of perceived unfairness in the family, high levels of conflict, and high levels of negative dominant expressiveness. When compared to the No CEM/Contrast group, participants endorsing significant experiences of *Combined CEN/ CEA* were more likely to be female, to be raised by a parent and a step-parent, to witness interparental verbal abuse, to report high levels of expressive caregiving, perceived unfairness, and family conflict, and to be white, black, or Asian (but not Hispanic/ Latino).

While there is considerable overlap among subgroups positive for CEM, differences do stand out. First, participants in the *CEN Only* group, unlike any other group, were more likely not to have a mother figure (e.g., step-parent or other close female family member, such as an aunt), to be raised by a single parent, and/or to endorse low levels of family cohesion. These particular risk factors reflect situations in which parenting rests on one (as opposed to two) parents or another individual who perhaps was not expecting to raise a child. While current data do not allow for causal claims to be made, stress models of childhood maltreatment illuminate the path from these types of family environments to emotionally neglecting parenting behavior. For example, single parents often must work for socioeconomic survival, which often takes them out of the home and potentially unable to be present physically (let alone emotionally) for children. In

other scenarios, such as children who are raised in the foster care system, the under-resourced social services system in the U.S. struggles to match children with long(er)-term families, struggles to provide necessary services for traumatized children and foster parents to create lasting and positive relationships, and has high levels of all forms of childhood maltreatment occurring even within the very settings to which children are moved after removal from their own homes owing to experiences of abuse and neglect. In the two examples discussed briefly here, it is not surprising that family cohesion suffers. Unfortunately, the psychological literature lends support to family cohesion as one significant protective factor for children in maltreating families, and it is potentially through this unique aspect of family environment in which CEN occurs that gives rise to the plethora of difficulties observed in individuals with histories of CEN (see Study 3). In the current endeavor, the only difference unique to the *CEA Only* group was endorsement of high levels of negative dominant expression. The only difference unique to the *Combined CEN/CEA* subgroup was the likelihood of *not* identifying as Hispanic/Latino –a.

Study 3. Study 3 examined associations among reports of CEM experiences and current functioning in several areas of competence important for emerging adults in a college setting: self-perception of academic and intellectual functioning, conduct, and perceptions of close friendships and peer interactions when controlling for sex, race/ethnicity, parental substance abuse, witnessing interparental domestic violence, childhood physical abuse, childhood sexual abuse, and the CEM subtype not directly under investigation. Bivariate analyses for Study 3 revealed interesting findings with regard to what types of childhood maltreatment experiences were significantly correlated with functioning in each of the three domains under review. While correlations between CEA, CEN, and childhood sexual abuse were generally significant across academic functioning, conduct, and social functioning, physical abuse was generally *not* significantly associated with functioning across domains. Interesting findings with regard to witnessing domestic violence were also detected, such that having witnessing interparental verbal

abuse was significantly correlated with functioning across all three domains under study while witnessing interparental physical violence was generally not significantly associated with functioning. The domestic violence literature has documented the effects of witness domestic violence on children, finding that interparental CEM is particularly devastating to the parent-child relationship when the victimized parent is demoralized (e.g., Clarke, Koenen, Taft, Street, King, & King, 2007).

In Study 3, preliminary findings revealed differences among racial/ ethnic groups, and separate analyses were therefore run for Asian and non-Asian participants. That there are potential differences in childhood maltreatment experiences, its consequences, and navigation of developmental tasks (e.g., Arnett, 2003) across racial/ ethnic groups is not surprising. This will be discussed in detail below in light of the large subsample of Asian participants in the present sample.

In the present study, participants identifying as white, black, or Hispanic/Latino (i.e., non-Asian) and endorsing *higher levels of CEA* also endorsed higher levels of committed crime (especially when male and when males have at least one substance abusing parent), expressed anger, peer alienation (especially for males), and peer communication. These trends were similar for Asian students, with the exception of both measures of academic functioning; CEA did impact perceptions of performance in these domains for Asian females, in particular. Also, CEA did not predict crime for Asian participants but did predict perceptions of close friendships, peer alienation equally across sex, and peer trust (particularly for Asian males).

White, black, and Hispanic/Latino students endorsing *higher levels of CEN* also endorsed lower levels of self-perception of academic functioning, and this was found to be especially true for black males. These students also endorsed lower levels of satisfaction with close friendships and lower levels of peer trust (especially for males). Similar patterns were found for Asian students with the exception that CEN did significantly predict crime (especially for Asians who

had been sexually and/or physically abused), and peer communication (especially for Asian males with a history of physical abuse).

White, black, and Hispanic/Latino participants endorsing high levels of *both CEA and CEN* also endorsed lower levels of peer communication while Asian students endorsing high levels of both CEM subtypes reported lower levels across both measures of academic functioning (particularly for Asian females) as well as lower levels of satisfaction with close friendships and lower levels of peer trust (especially for Asian males).

The mediating roles of self-esteem, emotion regulation, and current parent attachment.

In follow-up analyses, it was hypothesized that self-esteem would mediate the relationship between CEA (in particular) and self-perceptions of scholastic and intellectual functioning (particularly given that GPAs across CEM subtype groups were comparable). While this was found for Asian participants (in fact, both CEA and CEN were significant predictors of scholastic performance for Asian participants), it was not found for any other ethnicity. Second, it was hypothesized that emotion regulation would mediate the relationship between CEM and conduct. It was, in fact, found that impulse control, in particular, partially mediated the relationship between CEA and anger across ethnicities. Finally, it was hypothesized that current ratings of parent alienation would mediate the relationship between CEM and qualities of peer relationships and friendships. It was also found that the relationship between CEA and peer alienation was fully mediated by parent alienation across all participants. However, the relationship between CEM and perceptions of close friendships, peer trust, and peer communication were mediated by ratings of parent alienation only for students identifying as Asian.

Summary of findings. Overall, promising findings regarding the validity of the CEA and CEN subtypes of CEM were revealed in the present studies. Further, while families seem to share similar qualities across CEM subtypes, unique aspects emerged for all groups – for example, CEN occurred more frequently for females raised in single-parent households while combined

CEA and CEN tended to occur more frequently for females raised by a parent and step-parent. Findings such as these can help target efforts to prevent and intervene on families where CEM is occurring. Finally, study 3 demonstrated that, individually and when co-occurring, CEA and CEN are associated with less confidence in academics despite minimal differences in reported performance, higher levels of participation in crime and expressions of inappropriate anger in social and other situations, and difficulties in relationships with close friends and peers. Further, self-esteem, emotion regulation, and (current) ratings of parent alienation mediate these relationships, suggesting that the systems which depend on the parent-child relationship to develop successfully are derailed.

Findings for Asian and Pacific Island-Identifying Participants

The current investigation detected significantly different findings for Asian versus non-Asian (i.e., white, black, or Hispanic/ Latino) participants in several domains (see Study 3). Despite rapid increases in the Asian American population in the U.S. in recent decades, childhood maltreatment among Asian Americans is a largely understudied phenomenon (U.S. Census Bureau, 2013). Unlike other racial/ ethnic minorities groups (black/ African American and Native American) who are overrepresented in child maltreatment statistics relative to the size of their populations, Asian Americans consistently have lower rates of child abuse and neglect per national agency documentation mechanisms (National Child Abuse and Neglect Data System Children's Bureau, 2006) and empirical investigations (e.g., Futa, Hsu, & Hansen, 2001; Kenny & McEachern, 2000). When examining child maltreatment characteristics across ethnic groups represented in Asian samples, however, Vietnamese and Cambodian children are overrepresented in studies of child maltreatment whereas Filipinos, Koreans, and Hmong are underrepresented. With regard to types of child maltreatment reported in Asian American communities, rates tend to be low for neglect and high for physical abuse when compared to the national average and other racial and ethnic groups. Further, rates of sexual abuse in Asian American communities was

lowest by far when compared to the national average as well white, black, and Hispanic/Latino groups (Child Welfare Information Gateway, 2006). Studies of immigrant Asian American families show similar patterns of relatively higher levels of physical abuse and lower levels of sexual abuse and neglect (e.g., Chang, Rhee, & Weater, 2006; Pelczarski & Kemp, 2006). Relevant to the current endeavor, studies of Asian American college students found higher levels of physical abuse and lower levels of sexual abuse and neglect (Maker, Shah, & Agha, 2005; Meston, Heiman, Trapnell, & Carlin, 1999).

Studies examining childrearing practices and maltreatment in Asian countries may provide important context for observed levels of childhood maltreatment types in Asian American families. Studies documenting physical punishment in Korea have indicated that 97% of children experience some form of physical punishment; in a more recent study, 73% of a sample nearing 500 reported having been beaten at some point during the month prior to the study (Hahm & Guterman, 2001). Despite the ubiquity of physical abuse in these countries, evidence shows that physically abused children in Asian countries (i.e., China, Hong Kong, Singapore) suffer from higher levels of psychiatric problems, such as depression, low self-esteem, drug use, self-injurious behavior, and suicidal ideation, than children who are not abused (Chen et al., 2004; Tang, 2006). Similar trends have been detected in Hong Kong Chinese families (Samuda, 1988; Tang, 2006).

Extant literature documents differing attitudes regarding childhood maltreatment among Asian Americans and other racial and ethnic groups. Not surprisingly (given the above statistics), several Asian American groups (e.g., Chinese) are more tolerant of physical punishment when compared to white and Hispanic/Latino families (Hong & Hong, 1991). With regard to sexual abuse, Asian American mothers have been found to be less likely to believe children's reports of sexual abuse and less likely to report abuse to law enforcement than other racial and ethnic groups identifying as white, black, or Hispanic/ Latino (Futa et al., 2001; Kenny & McEachern,

2000). With regard to impact, studies show that Asian Americans are more likely to internalize (rather than externalize) deleterious consequences of childhood maltreatment. Further, Asian American males studied in emerging adulthood were shown to exhibit more distress than their nonabused counterparts whereas psychological distress among abused Asian American females was undistinguishable from their nonabused counterparts (McKelvey & Webb, 1995).

Similar to other types of child maltreatment, rates of CEM among Asian Americans is relatively low when compared to the general population, with more girls experiencing emotional abuse than boys (Ima & Hohm, 1991). Similar to the study of CEM across racial and ethnic groups in the U.S., studies of CEM lag behind studies of other forms of maltreatment in Asian American families. In the present study, when comparing Asians to non-Asians (i.e., white, black, or Hispanic/ Latino), significant differences were found with regard to proportion of students populating CEM subgroups, such that more Asian students were in the CEN Only and Combined CEN/ CEA groups than expected (see Table 31). This is in contrast to the few studies (reported above) which document lower levels of CEM in Asian and Asian American families when compared to other racial and ethnic groups in the U.S. Further, several significant differences (see Study 3) were detected between Asian and non-Asian participants on domains of competence foregrounded in emerging adulthood. As a result, closer inspection of demographic characteristics between Asian participants and non-Asian participants as well as differences within Asian participants were explored (see Table 31).

In the current sample, there were no significant differences in age across race/ ethnicity; however, Asian students who participated in the present study tended to be more advanced in their studies (i.e., higher proportion of seniors) than non-Asian students (i.e., black, white, or Hispanic/Latino). Differences in whether one was born in the U.S. or another country were significant across Asians and non-Asians, with higher rates of being born outside of the U.S. for Asian students. Highest education level among parents also differed significantly across Asians

and non-Asians, with Asian students tending to have a higher proportion of parents with college or other advanced degrees and lower proportions of parents who left formal schooling immediately after or anytime before high school graduation. Asian participants were also significantly less likely to grow up in single-parent households or with a parent and step-parent / partner. They had a higher proportion than white, black, and Hispanic/Latino students of growing up with both parents, but similar levels of growing up in atypical arrangements (e.g., foster care, relatives other than parents).

While studies reviewed above on immigrant versus non-immigrant Asian American families failed to detect differences in rates of child maltreatment, the higher proportion of Asian participants born outside of the U.S. when compared to non-Asian participants warranted further exploration. Almost 30% of Asian participants in the current sample were born outside of the U.S.: 25.0% were born in China, 25.9% were born in Korea, 23.1% were born in Vietnam, 12.3% were born in the Philippines, and 2.4% were born in other Asian/ Pacific Island countries (e.g., Burma, Japan, Thailand).

Further examination of parental substance abuse and other childhood maltreatment revealed that Asian participants were more likely to have a substance-abusing parent than non-Asian participants ($\chi^2 = 58.520$, $df=1$, $p < .001$, *Cramer's V* = .176, $p < .001$), more likely to witness interparental physical violence ($\chi^2 = 9.048$, $df=1$, $p = .003$, *Cramer's V* = .070, $p = .003$), equally likely to witness interparental verbal abuse ($\chi^2 = .037$, $df=1$, $p = .081$), less likely to experience childhood physical abuse ($\chi^2 = 12.392$, $df=1$, $p < .001$, *Cramer's V* = .087, $p < .001$), and more likely to experience sexual abuse perpetrated by non-familial or familial perpetrators ($\chi^2 = 58.345$, $df=2$, $p < .001$, *Cramer's V* = .177, $p < .001$). These findings suggest that the present sample's maltreatment characteristics for Asian participants is more severe than previous studies. It is unknown whether there are unique factors to the U.S. region where these data were gathered that could illuminate potential explanations for such a marked departure from past literature.

Despite these inconsistencies, certain consistencies were elucidated in Study 3. As mentioned above, while CEA predicted crime and problematic expressions of anger for non-Asian participants, this was not found for Asian students. This potentially supports findings above suggesting that Asian individuals are more likely to internalize, rather than externalize, negative emotional experiences. Unlike non-Asian students, CEA predicted perceptions of academic competence for Asian students. Finally, Asian students who experienced CEN were more likely to commit crime, especially when they also reported histories of childhood sexual and/or physical abuse. Given findings above suggesting that externalizing symptomatology is less common in Asian communities, engaging in criminal behavior might represent a clear signal of distress and maladaptation for Asian participants given that this association is strengthened by reports of past physical and/or sexual abuse (a finding not present for non-Asian participants who reported CEM).

Developmental Psychopathology, CEM, and the Future

CEA. With regard to the self-system, it was previously mentioned that CEA, in particular, is associated with low self-esteem. One possible pathway from CEA to low self-esteem suggests that repeated, negative messages conveyed by caregivers are internalized, accepted as true by virtue of the importance of the source from which they came, and eventually become the basis for the child's self-perception. A scale developed for use with maltreated individuals found that CEA histories, in particular, were associated with low self-evaluations (Briere & Runtz, 1990; Finzi-Dottan & Karu, 2006; Mullen et al., 1995). In turn, low self-esteem is associated with a wide range of psychosocial difficulties (e.g., depression and anxiety – for a review, see Sowislo & Orth, 2013).

CEN. When children are required to manage overwhelming emotion on their own, disruptions to the emotion regulation system are expected. Studies of normative development show that impaired emotion understanding in children is associated with decreased caregiver

responsiveness to child emotion and fewer caregiver-initiated discussions about emotions (Edwards, Shipman, & Brown, 2005). Studies corroborating this finding show that individuals with emotion regulation problems (alexithymia, in particular) also tend to report histories of CEN (e.g., Frewen, Lanius, Dozois, Neufeld, Pain, Hopper, & Densmore, 2008; Zlotnick, Mattia, & Zimmerman, 2001).

While not examined in the current project, children in emotionally-neglecting environments, in particular, may be at increased risk for developing maladaptive coping strategies, such as dissociation and other tension-reducing behaviors (e.g., substance abuse, self-harm) due to general lack of caregiver responsiveness in times of heightened distress. While these maladaptive strategies temporarily distance the child from feelings of extreme helplessness and terror in the context of persistently unavailable caregivers, dissociation (Egeland & Susman-Stillman, 1996) and other tension-reducing behaviors (e.g., non-suicidal self-injury, Gratz et al. 2002) preclude coping effectively with the problem at hand. Since such maladaptive strategies may provide temporary relief, the likelihood of the child using these strategies again is increased and may develop into the individual's general strategy for emotion management. This leaves an individual at increased risk for developing along a trajectory wherein maladaptive coping strategies replace healthy strategies that not only decrease negative emotion but also include effective problem-solving.

CEM. The unique, wide-ranging, and pervasive symptom presentation associated with Complex Post-Traumatic Stress Disorder (Complex PTSD; Herman, 1992) often results from early, enduring interpersonal trauma. Complex PTSD emerged in recent decades in an effort to capture the unique correlates associated with certain traumatic experiences that the PTSD diagnosis failed to capture (Briere & Spinazzola, 2005). Childhood maltreatment is considered to be the prototype trauma for Complex PTSD (Courtois, 2008). Despite its exclusion from DSM-IV and, now, DSM-V, Complex PTSD is a useful organizing framework for understanding the

symptom patterns associated with CEM. By definition, CEM either directly targets the child's sense of worth through overt acts of hostility and criticism, or through lack of responsive presence and availability, nurturance, and love. Parental emotionally maltreating behaviors act directly on the psychological well-being of the child while simultaneously increasing the likelihood of atypical development in areas that heavily rely on in-tact parent-child relationships (e.g., emotion regulation, the self-system). Yet again, attachment theory (Bowlby, 1973; Ainsworth et al., 1978) provides unique insight into the pervasive effect of emotionally maltreating behaviors. The theory of attachment holds that humans are born with an innate motivation to seek proximity to important caregivers in response to danger, stress, or novelty. This has particular salience for the neglected child, whose caregiver(s) are unresponsive and emotionally unavailable. Recent work has in fact demonstrated that parental loss (both threatened and actual) contributes significantly to PTSD symptomatology (Charuvastra & Cloitre, 2008).

The developmental psychopathology perspective has the ability to guide understanding of the complexity of outcomes associated with experiences of CEM. It provides an adequate holding space, absent of reductionism often resulting from theoretical limits, methodological limits, or reaching the edge of one's discipline-specific knowledge (e.g., the psychologist encountering intricate physiology of stress), for documenting and understanding ecological risk and protective factors as well as mechanisms of change at multiple levels of analysis (Cicchetti, 2008) associated with CEM. Like many areas of inquiry within the field of psychology, research on CEM has focused primarily on behavioral and psychological outcomes and mechanisms to the exclusion of biological processes; however, developing literatures on the biology of stress and trauma, for example, reflect another level of analysis where there is much promise for understanding the impact of CEM and the potential mechanisms responsible for the widespread psychosocial consequences associated with its subtypes (e.g., see Yates, 2007, for review pertaining to CEA).

Finally, the current investigation illuminated differences across sex and ethnicity on outcomes, even when other forms of abuse, parental substance abuse, and witnessing interparental abuse or violence were controlled. This suggests that more attention should be focused on elucidating differences based on gender and ethnicity in order to improve understanding of CEM across these groups who were simultaneously found to be at increased risk for experiencing CEM and to suffer the outcomes theoretically associated with CEM. Understanding unique presentations of, and ecological correlates associated with, CEM in these subgroups will help social service agencies to detect CEM across sex and race/ ethnicity, and will help to target prevention and intervention efforts appropriately.

Strengths & Limitations

Due to the use of a retrospective design with correlational data (paper-and-pencil, self-report measures of past and current experiences), causal or temporal relationships cannot be tested or derived. Reliance on retrospective self-reports is problematic in that it introduces increased likelihood of significant (false positive) findings among variables (e.g. emotionally-maltreating behaviors in childhood and current ratings of emotional health) that are actually due to inflation effects related to common method variance.

Several studies have examined the association between emotional maltreatment and psychosocial development in youth in prospective and cross-sectional designs using outside reports of maltreatment (e.g., teachers, Gracia, 1995; parents, Vissing, Straus, Gelles, & Harrop, 1991; child protective services records, Crittenden, Claussen, & Sugarman, 1994, Kim & Cicchetti, 2006; Manly, Kim, Rogosch, & Cicchetti, 2001; and observational methods, e.g., Linder & Collins, 2005), finding that CEM was associated with internalizing and externalizing symptoms, low self-esteem, and interpersonal problems (for review see Taussig & Culhane, 2010). Cross-sectional and longitudinal studies using youth self-report methods for maltreatment assessment found CEM to be associated with atypical developmental trajectories, such as

delinquency and depression (Gibb & Abela, 2008; Solomon & Serres, 1999; Stuewig & McCloskey, 2005). Another study examined self-reported severity ratings of CEM from a random sample of child protection cases, finding that self-report ratings were positively associated with self-reported internalizing and externalizing symptoms (even after controlling other maltreatment forms; McGee et al., 1997). Taken together, evidence from prospective and longitudinal studies employing observer or self-reports of emotional maltreatment are adequate in demonstrating the robust association between CEM and maladaptation. Despite these findings, adult retrospective self-report ratings introduce such subjective biases as memory difficulties (i.e., recall error) or lack of self-disclosure (i.e., social desirability).

Retrospective self-reports might be particularly problematic in assessments of childhood experiences (such as maltreatment experiences, which are subject to reprocessing and subsequent reconstruction) and concurrent psychological functioning. A review of issues applicable to these types of studies highlights the likelihood that participants who endorse compromised functioning (e.g., depression, anxiety, life dissatisfaction) are more likely to endorse higher levels of childhood adversity due to several factors, such as cognitive distortions associated with depression or a desire to make sense of current circumstances (Baker, 2009). On the other hand, a recent review of the literature on retrospective reports of adverse childhood experiences indicates that errors of omission (i.e., failure to report negative events) are more common than false positive reporting. It was concluded that, unless detailed information is necessary, the use of retrospective self-reports are appropriate in a research context (Hardt & Rutter, 2004).

Despite the unavoidable limitations of retrospective, self-report measures, there are also benefits to this methodology. While prospective, longitudinal work is undeniably necessary to understand relations among variables in CEM samples, retrospective self-reports allow for immediate study of long-term associations without the hassles of tracking participants, conducting multiple data collection waves or sessions, and obtaining informed consent and assent

from families who may be reticent to share family experiences (Baker, 2009). Additionally, adult recall of child maltreatment allows for reflection on maltreatment experiences from a different perspective, and may provide insights to researchers about the meaning of these experiences and how they have been integrated into one's life over several years (Widom, Raphael, & DuMont, 2004). A number of longitudinal studies have found discrepancies relating to recall of maltreatment experiences and actual maltreatment experiences (e.g., White, Widom, & Chen, 2007); however, arguments have been made that despite potential recall error and response bias, self-reports reflect the individual's perception of events (Baker, 2009). This is meaningful in the sense that by endorsing experiences suggests that one also endorses and adopts the consequences of such experiences.

Generalizability of the current endeavor is constrained by sample characteristics. Participants comprising the sample were college-enrolled undergraduate students who may represent milder forms of maltreatment since they have, in fact, achieved college acceptance. Alternatively, college students might reflect a unique group who demonstrate high levels of resilience regardless of CEM severity. Regardless, college student samples are typically regarded as higher-functioning groups than, for example, clinical samples endorsing multiple trauma exposures (e.g., Tull, Barrett, McMillan, & Roemer, 2007).

Despite these limitations, the current investigation comprises several methodological strengths related to the benefits of a large, ethnically-diverse sample. This allowed for important investigations of the subtypes thought to underlie CEM. Finally, to the author's knowledge, associations among CEM and stage-salient developmental tasks have not previously been evaluated. While proposed mechanisms must be regarded as speculative, results may indicate pathways to maladaptation that could be examined in studies that are more illuminating with regard directional effects, including prospective longitudinal and intervention designs.

For many, the transition to college may provide the first opportunity to safely explore traumatic family experiences (Banyard & Cantor, 2004). In fact, tasks relating to identity formation and consolidation suggest that consideration of the impact of traumatic family experiences on one's life is particularly relevant to this point in development. Though relatively few studies have examined CEM in undergraduate samples, statistics suggest that as many as 1 in 4 students carry a history of CEM. This underscores the necessity of empirical efforts to document functioning in college students with a history of CEM, and speaks to the need for the development and implementation of effective interventions and supports targeting areas of vulnerability elucidated from empirical study. College students also provide a unique opportunity to examine CEM experiences in relatively high-functioning individuals whose maltreatment experiences, due to gross underreporting of CEM (e.g., Barnett et al., 2005) as well as persistent beliefs that CEM is not as common or as devastating as other types of childhood maltreatment, have likely not been evaluated or intervened upon by outside agencies.

Prevention, Intervention, & Treatment

The implications for prevention, intervention, and treatment for individuals affected by CEM are in some ways no different from other types of maltreatment and comprise such efforts as widespread education and parent guidance (e.g., Simmel & Shpiegel, 2013), relief from economic and other stresses for parents (particularly vulnerable parents, such as those from lower SES backgrounds, young parents, single parents), and early intervention. Baker and colleagues (2011) reviewed ten evidence-based, manualized parenting programs through SAMHSA for content related to 18 categories of CEM (see Bingelli, Hart, & Brassard, 2001; Hart & Brassard, 1995), with most curricula lacking any CEM-related content (especially teaching about acts of commission to avoid) and no program covering all types of CEM (Baker, Brassard, Schneiderman, Donnelly, & Bahl, 2011).

Specific to CEM, it first must be recognized as a common and devastating form of maltreatment. This requires that scientists and lawmakers to bring the problem to the fore, and will require social services agencies to significantly improve their process for screening in cases of CEM requiring assessment and possible intervention (see Trickett et al., 2009). Awareness of CEM has another benefit that could potentially make more parents aware of the importance of sensitive and responsive caregiving given the types of parenting behaviors reflective of CEM are also related to parenting behaviors observed in parent-child dyads assessed to be insecure in their attachment relationship. One could argue that these very parenting behaviors (associated with insecure attachment formation) constitute CEM as the consequences associated with insecure attachment are well-documented, significant, and not inconsistent with outcomes associated with CEM and have been shown to worsen the consequences of other forms of maltreatment, exact unique consequences, and potentially be associated with maladaptation in fundamental systems of self and emotion regulation necessary for healthy psychosocial functioning. With regard to treatment strategies for sequelae potentially associated with CEM, evidence from the current endeavor suggests that self-esteem and emotion regulation will likely be fruitful points of departure.

Figure 1
Scree Plot for CEM Items in Exploratory Factor Analysis

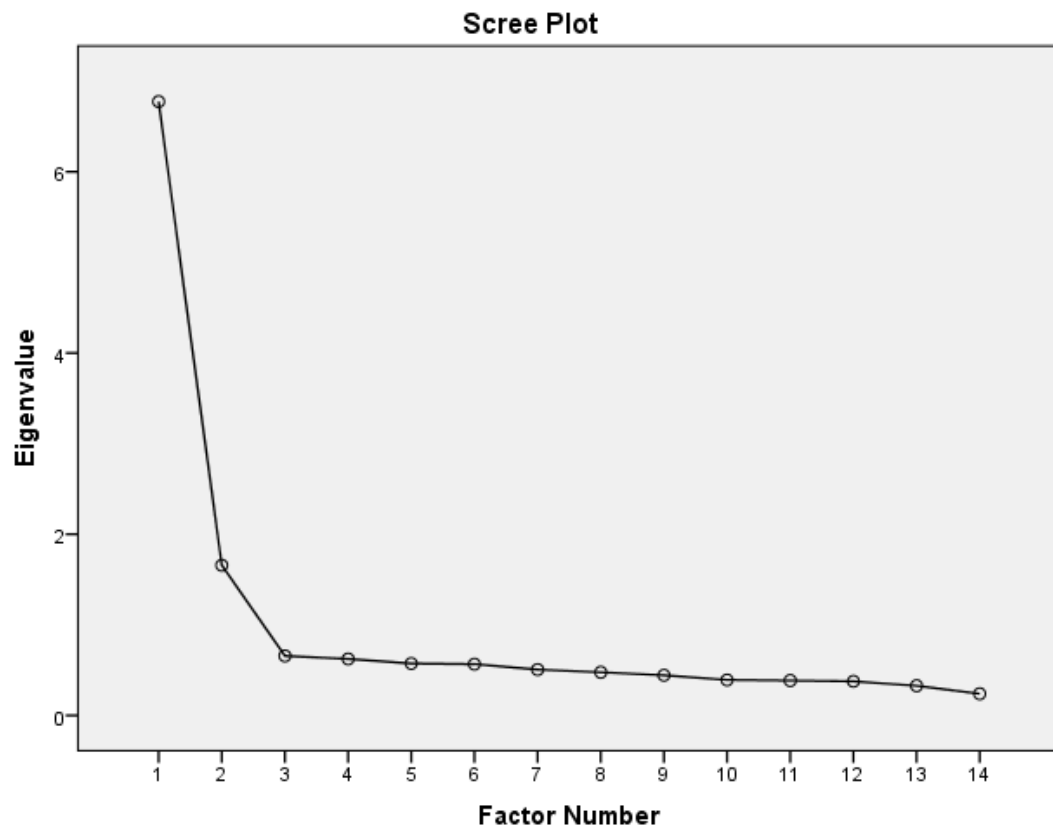


Figure 2

Proposed Two-Factor Structure of CEM

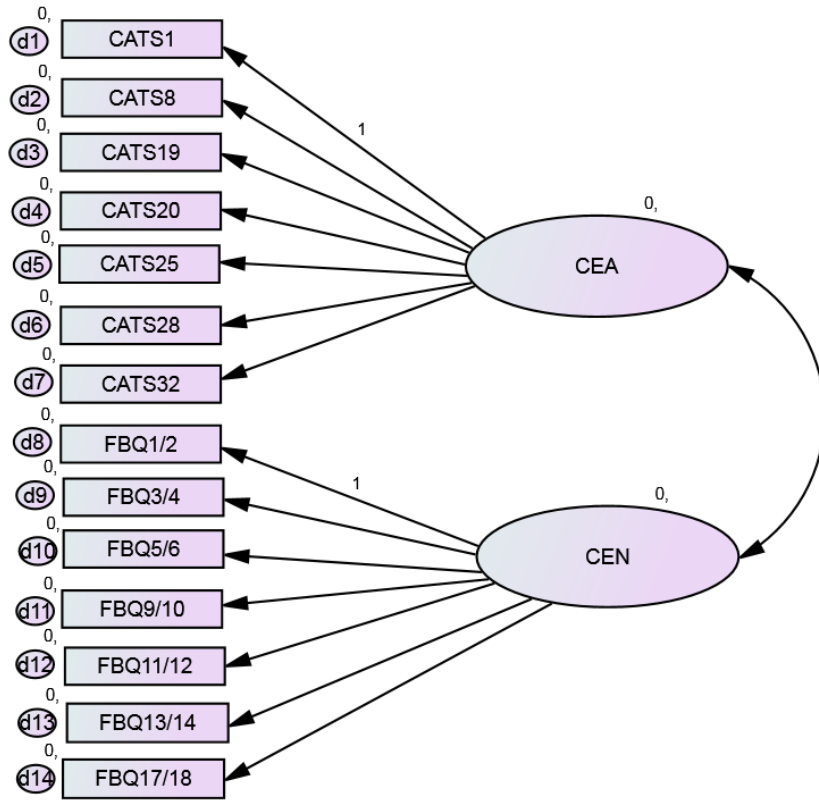


Table 1

Demographic Characteristics and Difference Tests for Subsamples and Total Sample

		Subsample 1 (n = 960)	Subsample 2 (n = 992)		Total Sample (N=2052)
Age		<i>M (SD)</i>	<i>M (SD)</i>	$t(1950) = .150, p = .881$	<i>M (SD)</i>
		19.12 (1.48)	19.11 (1.45)		19.12 (1.48)
Race/ Ethnicity		%	%	$X^2(4) = 2.685, p = .612$	%
	White	15.5	14.3		13.6
	Black	5.8	6.4		5.7
	Hispanic	28.4	30.6		27.0
	Asian	49.1	48.0		44.7
	American Indian/Alaskan Native	1.2	0.7		.9
Current Living Arrangement		%	%	$X^2(2) = .095, p = .953$	%
	On-Campus	53.4	52.8		53.1
	Off-Campus	27.7	27.9		27.8
	Off-Campus (with family)	18.9	19.3		19.1
Current Year in School		%	%	$X^2(3) = .257, p = .968$	%
	First-year	56.3	56.4		56.4
	Sophomore	23.5	22.8		23.1
	Junior	14.1	14.7		14.4
	Senior	6.2	6.0		6.1
Highest Parental Education		%	%	$X^2(6) = 3.375, p = .761$	%
	Grade school	7.0	6.4		6.7
	Some high school	5.7	6.1		5.9
	HS graduate	14.2	13.4		13.8

	Some college	13.4	15.5		14.5
	2 year degree	6.1	6.1		6.1
	4 year degree	31.5	32.4		32.0
	Postgraduate work	22.1	19.9		21.0
Primary living situation growing up		%	%	$X^2(3) = 6.073, p = .108$	%
	Both parents	82.8	81.6		82.2
	Single parent	10.9	10.5		10.7
	Parent and step-parent/partner	4.1	6.3		5.2
	other	2.2	1.6		1.9
CEM (continuous)		<i>M (SD)</i>	<i>M (SD)</i>		<i>M (SD)</i>
	CEA	13.56 (4.79)	13.38 (4.98)	$t(2029) = .806, p = .211$	13.48 (4.88)
	CEN	8.43 (3.08)	8.53 (3.23)	$t(2032) = -.694, p = .098$	8.49 (3.15)
CEM (categorical)		%	%	$X^2(3) = 1.845, p = .605$	%
	No CEM (Contrast Group)	72.9	71.9		72.4
	CEN Only	6.7	8.1		7.4
	CEA Only	10.9	10.0		10.4
	Combined CEN/ CEA	9.6	10.0		9.8

Table 2

Items Selected for Factor Analysis to Represent Latent CEA and CEN Constructs

CEA Items	CATS: Before you were 17... 1=Never 2=Rarely 3=Sometimes 4=Very Often 5=Always	Cronbach's alpha (α) for 7 CEA items = .87
	Did your parents ridicule you?	
	Did your parents insult you or call you names?	
	As a child or teenager, did you feel disliked by either of your parents?	
	How often did your parents get really angry with you?	
	Did your parents ever verbally lash out at you when you did not expect it?	
	Did your parents yell at you?	
	Did your parents blame you for things you didn't do?	
CEN Items	FBQ: Before I was 17... 1=Almost Never 2=Once in a While 3=Usually 4=Almost Always	Cronbach's alpha (α) for 7 CEN items = .91
	When I approached my mother/father, s/he listened carefully to what I had to say. R	
	My mother/father would support and comfort me when I needed it. R	
	If I got in some kind of trouble, I knew I could count on my mother/father for help. R	
	When I was obviously sick or injured, my mother/father was caring and comforting. R	
	My mother/father showed affection toward me without me beginning it; s/he just came up and was affectionate toward me. R	
	I felt that my mother/father approved of me, just the way I was. R	
	I felt close to my mother/father. R	
	REMOVED: My mother/father ignored me as long as I didn't do anything to bother him/her.	
	REMOVED: When I was emotionally upset, I talked with my mother/father about it. R	
	REMOVED: My mother/father made me feel like I would not be loved anymore if I did not behave.	
	REMOVED: My mother/father was emotionally _____.	

Note: CATS = *Child Abuse and Trauma Scale*. FBQ = *Family Background Questionnaire*. R indicates reverse-coded item.

Table 3

Zero-Order Correlation Matrix of CEM Items

Items	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. Parents ridiculed you	1	.554	.427	.411	.432	.430	.414	.403	.419	.332	.322	.366	.481	.369
2. Parents insulted you		1	.519	.489	.563	.522	.460	.425	.428	.379	.374	.354	.469	.403
3. Disliked by parents			1	.449	.459	.416	.439	.433	.455	.384	.375	.378	.469	.474
4. Parents angry with you				1	.505	.580	.436	.336	.349	.310	.288	.283	.423	.368
5. Parents verbally lashed out					1	.535	.505	.381	.363	.346	.344	.280	.373	.333
6. Parents yell at you						1	.460	.350	.354	.315	.239	.285	.394	.351
7. Parents wrongly blamed you							1	.369	.353	.322	.281	.307	.373	.349
8. Parents listened carefully								1	.744	.573	.552	.542	.568	.626
9. Parents supported me									1	.610	.583	.632	.614	.660
10. Parents helped me										1	.524	.513	.578	.576
11. Parents cared for me											1	.534	.496	.532
12. Parents were affectionate												1	.530	.580
13. Parents approved of me													1	.643
14. Close to parents														1

Table 4

Anti-image Correlation Matrix of CEM Items

Items	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. Parents ridiculed you	.950	-.257	-.048	-.040	-.051	-.065	-.092	-.028	-.037	.053	.018	-.059	-.157	-.003
2. Parents insulted you		.940	-.169	-.073	-.212	-.145	-.056	-.027	-.007	-.019	-.059	.000	-.061	.025
3. Disliked by parents			.966	-.109	-.094	-.013	-.120	-.012	-.049	.004	-.026	-.014	-.056	-.123
4. Parents angry with you				.932	-.142	-.318	-.082	.028	.004	.020	-.020	.021	-.098	-.041
5. Parents verbally lashed out					.931	-.192	-.202	-.047	.011	-.054	-.101	.047	.037	.050
6. Parents yell at you						.921	-.116	-.018	-.023	-.019	.106	-.012	-.027	-.026
7. Parents wrongly blamed you							.956	-.056	.016	-.024	.024	-.038	-.007	-.013
8. Parents listened carefully								.933	-.421	-.101	-.114	-.011	-.037	-.148
9. Parents supported me									.923	-.137	-.116	-.229	-.097	-.140
10. Parents helped me										.961	-.139	-.077	-.188	-.119
11. Parents cared for me											.956	-.180	-.048	-.083
12. Parents were affectionate												.953	-.073	-.153
13. Parents approved of me													.954	-.244
14. Close to parents														.951

Note: All correlations were significant at the $p < 0.001$ level.

Table 5

Factor Eigenvalues and Percentages of Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	Percent of Variance	Cumulative Percent	Total	Percent of Variance	Cumulative Percent	
1	6.775	48.390	48.390	6.298	44.988	44.988	5.643
2	1.658	11.840	60.230	1.225	8.751	53.739	5.137
3	.657	4.694	64.924				
4	.624	4.455	69.379				
5	.573	4.093	73.472				
6	.567	4.047	77.520				
7	.507	3.619	81.138				
8	.476	3.402	84.541				
9	.443	3.167	87.708				
10	.392	2.800	90.508				
11	.385	2.753	93.261				
12	.376	2.687	95.948				
13	.328	2.341	98.289				
14	.240	1.711	100.000				

Table 6

Communalities

Item	Initial	Extracted
1. Parents ridiculed you	.408	.419
2. Parents insulted you	.515	.566
3. Disliked by parents	.418	.445
4. Parents angry with you	.443	.496
5. Parents verbally lashed out	.473	.537
6. Parents yell at you	.468	.531
7. Parents wrongly blamed you	.372	.414
8. Parents listened carefully	.613	.652
9. Parents supported me	.679	.748
10. Parents helped me	.490	.522
11. Parents cared for me	.451	.474
12. Parents were affectionate	.485	.521
13. Parents approved of me	.562	.575
14. Close to parents	.585	.623

Table 7

Pattern Matrix of Item Factor Loadings for the Two-Factor Solution

Item	Factor	
	1	2
1. Parents ridiculed you		.533
2. Parents insulted you		.709
3. Disliked by parents		.495
4. Parents angry with you		.731
5. Parents verbally lashed out		.765
6. Parents yell at you		.779
7. Parents wrongly blamed you		.622
8. Parents listened carefully	.798	
9. Parents supported me	.891	
10. Parents helped me	.709	
11. Parents cared for me	.695	
12. Parents were affectionate	.751	
13. Parents approved of me	.619	
14. Close to parents	.767	

Table 8

Structure Matrix of Item Factor Loadings for the Two-Factor Solution

Item	Factor	
	1	2
1. Parents ridiculed you	.501	.635
2. Parents insulted you	.519	.751
3. Disliked by parents	.548	.643
4. Parents angry with you	.425	.704
5. Parents verbally lashed out	.439	.732
6. Parents yell at you	.416	.726
7. Parents wrongly blamed you	.431	.643
8. Parents listened carefully	.807	.526
9. Parents supported me	.864	.528
10. Parents helped me	.722	.475
11. Parents cared for me	.689	.435
12. Parents were affectionate	.721	.435
13. Parents approved of me	.743	.590
14. Close to parents	.789	.525

Table 9

Factor Correlation Matrix

Factor	1	2
1	1.000	.641
2		1.000

Table 10

Name and Description of Selected Variables by Ecological Level

Ecological Level	Description
Individual-Child Factors	
Sex	
	What is your sex? Female/ Male
Disability	
	Did you have a disability that limited your activity or experiences when you were growing up? Yes/ No
Adopted	
	To the best of your knowledge, were you adopted? Yes/ No
Individual-Parent Factors	
Substance Abuse	Before you were 17, did either of your parents drink heavily or abuse drugs? Yes/ No
Maternal Incarceration	Has your mother/ mother figure ever been incarcerated? Yes/ No
Paternal Incarceration	Has your father/ father figure ever been incarcerated? Yes/ No
Microsystem-Family Factors	
Maternal Figure	Who was the adult female mother figure (or woman) you lived with most when you were growing up?
Paternal Figure	Who was the adult male father figure (or man) you lived with most when you were growing up?
Parent-Mother Absence	Prior to age 17, did you live apart from your biological (birth) mother without seeing her for 6 months or more?
Parent-Father Absence	Prior to age 17, did you live apart from your biological (birth) father without seeing her for 6 months or more?
Family Structure	What was the primary living situation for you while you were growing up?
Child-Physical Abuse	Before you were 17, did a parent, step-parent, foster-parent, or other adult in charge of you ever do something to you on purpose (e.g., hitting, punching, cutting, or pushing) that made you bleed, gave you bruises or scratches, or broke bones or teeth? Yes/ No
Child-Sexual Abuse	Before you were 17, did anyone ever kiss you in a sexual way, or touch your body in a sexual way, or make you touch their sexual parts? Yes/ No
Domestic Violence	Before age 17, did you ever see or hear one of your parents hit or beat up on your other parent? Yes/ No
FRS-Instrumental Caregiving	Familial caregiving and unfairness in the family of origin. e.g., "I often did the laundry."
FRS-Expressive Caregiving	Familial caregiving and unfairness in the family of origin. e.g., "I often felt like a referee in my family."
FRS-Perceived Unfairness	Familial caregiving and unfairness in the family of origin. e.g., "In my family, I gave more to members of my family of origin to help them out."
FES-Cohesion	Degree of commitment, help, and support family members provided for one another.
FES-Conflict	Amount of openly expressed anger and conflict among family members.
FES-Control	How much set rules and procedures were used to run family life.

	FEQ-Positive Dominant	Perceptions of family expressiveness on a variety of positive and negative issues and events during one's upbringing. e.g., Showing forgiveness to someone who broke a favorite possession.
	FEQ-Positive Non-dominant	Perceptions of family expressiveness on a variety of positive and negative issues and events during one's upbringing. e.g., Thanking family members for something they have done.
	FEQ-Negative Dominant	Perceptions of family expressiveness on a variety of positive and negative issues and events during one's upbringing. e.g., Showing contempt for another's actions.
	FEQ-Negative Non-dominant	Perceptions of family expressiveness on a variety of positive and negative issues and events during one's upbringing. e.g., Sulking over unfair treatment by a family member.
Exosystem-Social Factors		
	Parent-Education	What was your mother/mother figure's/ father or father figure's highest level of education?
	Mother-Education	What was your mother/mother figure's highest level of education?
	Father-Education	What was your father/ father figure's highest level of education?
Macrosystem-Cultural Beliefs and Attitudes		
	Ethnicity	How do you describe your ethnicity?
	Country of Origin	What country were you born in?

Table 11

Statistical Associations (ANOVA and Chi-Square) among Ecological Correlates and Childhood Emotional Maltreatment Subtype

Ecological Level		Contrast/ No CEM (n=1491)		CEN Only (n=136)		CEA Only (n=230)		Both CEN/ CEA (n=185)		Pearson chi-square statistic (χ^2) or Welch F-ratio
Individual-Child										
	Sex	n	%	n	%	n	%	n	%	$\chi^2=14.580$, $df=3$, $p = .002^{**}$
	Female	897	-61.0***	102	ns	157	ns	138	+73.8**	
	Male	573	+39.0	51	ns	76	ns	49	-26.2**	
	Disability	--	--	--	--	--	--	--	--	$\chi^2=7.576$, $df=3$, $p = .152$, ns
	Adopted	--	--	--	--	--	--	--	--	$\chi^2=8.581$, $df=3$, $p = .056$, ns
Individual-Parent										
	Incarceration (M)	n	%	n	%	n	%	n	%	$\chi^2=8.858$, $df=3$, $p = .031^*$
	Yes	17	ns	<5	--	<5	--	7	+3.8**	
	No	1493	ns	151	ns	225	ns	178	-96.2**	
	Incarceration (P)	n	%	n	%	n	%	n	%	$\chi^2=10.635$, $df=3$, $p = .014^*$
	Yes	63	-4.4*	15	+10.5**	14	ns	9	ns	
	No	1369	+95.6	128	-89.5**	209	ns	166	ns	
	Maternal Absence	n	%	n	%	n	%	n	%	$\chi^2=16.706$, $df=3$, $p = .001$, **
	Yes	132	-9.0***	18	ns	28	ns	34	+18.3***	
	No	1342	+91.0***	135	ns	205	ns	152	-81.7***	
	Paternal Absence	n	%	n	%	n	%	n	%	$\chi^2=28.262$, $df=3$, $p < .001$ ***
	Yes	301	-20.5***	49	+32.5**	57	ns	65	+35.1***	
	No	1167	+79.5***	102	-67.5**	176	ns	120	-64.9***	
	Substance Abuse	n	%	n	%	n	%	n	%	$\chi^2=21.645$, $df=3$, $p < .001$ ***
	Yes	128	-8.7***	27	+17.5**	32	ns	30	+16.0*	
	No	1343	+91.3***	127	-82.5**	201	ns	157	-84.0*	
Microsystem-Family										
	Maternal Figure	n	%	n	%	n	%	n	%	$\chi^2=37.044$, $df=3$, $p < .001$ ***

	Yes	1445	+98.1***	142	-92.2**	220	ns	168	-91.3***	
	No	28	-1.9***	12	+7.8**	10	ns	16	+8.7***	
	Paternal Figure	n	%	n	%	n	%	n	%	$\chi^2=43.656, df=3, p < .001***$
	Yes	1394	+94.7***	128	-83.7***	219	ns	160	-85.6***	
	No	78	-5.3***	25	+16.3***	13	ns	27	+14.4***	
	Family Structure	n	%	n	%	n	%	n	%	$\chi^2=55.783, df=9, p < .001***$
	Both Birth/ Adoptive parents	1242	+84.6***	104	-68.4***	195	ns	132	-71.0***	
	Single Parent	140	-9.5**	32	+21.1***	21	ns	27	ns	
	Parent and Step- Parent/ Partner	69	ns	9	ns	11	ns	17	+9.1	
	Other	17	-1.2	7	+4.6	6	ns	10	+5.4	
	Witness Interparental Physical Violence	n	%	n	%	n	%	n	%	$\chi^2=99.124, df=3, p < .001***$
	Yes	227	-15.4***	31	ns	74	+32.5***	78	+42.6***	
	No	1243	+84.6***	122	ns	154	-67.5***	105	-57.4***	
	Witness Interparental Verbal Abuse	n	%	n	%	n	%	n	%	$\chi^2=290.964, df=3, p < .001***$
	Yes	451	-30.8***	69	ns	176	+75.5***	148	+79.1***	
	No	1015	+69.2***	84	ns	57	-24.5***	39	-20.9***	
	Physical Abuse	n	%	n	%	n	%	n	%	$\chi^2=155.374, df=3, p < .001***$
	Yes	117	-7.9***	23	ns	68	+29.4***	62	+33.5***	
	No	1355	+92.1***	130	ns	163	-70.6***	123	-66.5***	
	Sexual Abuse	n	%	n	%	n	%	n	%	$\chi^2=44.728, df=6, p < .001***$
	Non-family	110	-7.5***	16	ns	34	+14.8**	30	+16.2***	
	Family	88	-6.0	8	ns	21	ns	25	+13.5**	
	No	1267	+86.5***	128	ns	174	-76.0**	130	-70.3***	
		mean(sd)								
	FRS-Instrumental Caregiving	22.26(7.03)		23.29(7.02)		25.67(7.55)***		26.92(8.59)***		$F = 19.89, df=3, df2=263.13***$
	FRS-Expressive	26.00(7.14)		27.39(7.53)		31.75(7.70)***		32.16(8.33)***		$F = 48.84, df=3, df2=276.05***$

	Caregiving									
	FRS-Perceived Unfairness	20.47(6.71)		28.77(7.66)***		30.03(6.87)***		35.32(6.33)***		$F = 320.41, df=3, df2=280.23$ ***
	FES-Cohesion	15.87(1.94)		13.51(2.51)***		14.17(2.18)***		12.27(2.33)***		$F = 191.75, df=3, df2=348.25$ ***
	FES-Conflict	11.19(2.06)		12.22(2.15)***		13.65(1.79)***		14.01(1.77)***		$F = 221.00, df=3, df2=377.37$ ***
	FES-Control	14.10(2.09)		14.58(2.23)		15.33(2.04)***		15.19(2.21)***		$F = 34.31, df=3, df2=363.58$ ***
	FEQ-Positive Dominant	63.14(13.45)		49.12(15.05)***		54.93(14.37)***		44.93(15.42)***		$F = 94.79, df=3, df2=274.63$ ***
	FEQ-Positive Non-dominant	62.54(13.67)		49.45(15.85)***		54.09(15.30)***		44.11(16.46)***		$F = 84.36, df=3, df2=271.84$ ***
	FEQ-Negative Dominant	44.75(13.70)		50.22(13.77)**		61.06(12.96)***		64.24(14.34)***		$F = 142.74, df=3, df2=282.36$ ***
	FEQ-Negative Non-dominant	50.15(12.77)		47.10(12.43)		55.81(12.64)***		52.58(13.16)		$F = 14.31, df=3, df2=282.68$ ***
Exosystem-Social Factors										
	Parental Education	--	--	--	--	--	--	--	--	$\chi^2=26.151, df=18, p = .096, ns$
	Education (M)	n	%	n	%	n	%	n	%	$\chi^2=39.722, df=18, p = .002$ **
	Grade school	162	ns	18	ns	20	ns	29	+17.0*	
	Some high school	91	-6.4***	12	ns	31	+14.5***	16	ns	
	HS diploma	269	ns	31	ns	33	ns	37	ns	
	Some college	234	ns	22	ns	32	ns	20	ns	
	2-year degree	81	ns	5	ns	12	ns	16	+9.4*	
	4-year degree	414	ns	37	ns	62	ns	44	ns	
	Post-graduate degree	162	+11.5*	10	ns	24	ns	9	-5.3*	
	Education (P)	--	--	--	--	--	--	--	--	$\chi^2=23.617, df=18, p = .168, ns$
Macrosystem-Cultural Beliefs and Attitudes										
	Ethnicity	n	%	n	%	n	%	n	%	$\chi^2=16.486, df=12, p = .043$ *
	White or American Indian/ Alaskan	207	ns	17	ns	30	ns	25	ns	

	Native									
	Black	83	ns	6	ns	15	ns	11	ns	
	Hispanic or Latino	427	+31.4**	42	ns	50	ns	35	-20.7**	
	Asian/ Pacific Islander	629	-46.3***	80	ns	113	ns	94	ns	
	[‡] Country of Origin	--	--	--	--	--	--	--	--	$\chi^2=10.548, df=21, p = .971, ns$

Notes. Values are means \pm SD for continuous variables and n and percentages for categorical variables. (M)=Maternal. (P)=Paternal. ANOVA for continuous variables and χ^2 tests for categorical variables with No CEM/Comparison group as reference group. + or – in % column indicates direction of sample size (i.e., larger or smaller than expected). *** $p < .001$. ** $p < .01$. * $p < .05$. [‡]Missing data exceed threshold for use in parametric analyses

Table 12

Predictors' Contributions to the Multinomial Logistic Regression

Predictor	χ^2	<i>df</i>	<i>p</i>
Individual-Child Factors			
Sex	23.450	3	< .001***
Individual-Parent Factors			
Parental Substance Abuse	7.019	3	.071, <i>ns</i>
Maternal Absence (6+ months)	2.402	3	.493, <i>ns</i>
Paternal Absence (6+ months)	.530	3	.912, <i>ns</i>
Maternal Incarceration	1.169	3	.760, <i>ns</i>
Paternal Incarceration	4.465	3	.215, <i>ns</i>
Microsystem-Family Factors			
Maternal Figure	8.457	3	.037*
Paternal Figure	3.435	3	.329, <i>ns</i>
Family Structure	19.785	9	.019*
Witnessing Interparental Physical Violence	4.459	3	.216, <i>ns</i>
Witnessing Interparental Verbal Abuse	18.942	3	< .001***
Childhood Physical Abuse	7.400	3	.060, <i>ns</i>
Childhood Sexual Abuse	6.523	3	.367, <i>ns</i>
Instrumental Caregiving	2.331	3	.507, <i>ns</i>
Expressive Caregiving	14.506	3	.002**
Perceived Unfairness	100.936	3	< .001***
Family Cohesion	17.186	3	.001**
Family Conflict	27.155	3	< .001***
Family Control	5.146	3	.161, <i>ns</i>
Positive Dominant Expressiveness	13.888	3	.003**
Negative Dominant Expressiveness	12.372	3	.006**
Exosystem-Social Factors			
Mother's Highest Level of Education	15.912	9	.069, <i>ns</i>
Macrosystem-Cultural Beliefs and Attitudes			
Ethnicity	17.879	9	.037*

Table 13

Parameter Estimates from Multinomial Logistic Regression Contrasting the No CEM (Contrast) Group to the CEM Groups: CEN Only, CEA Only, and Combined CEA/ CEN

Predictor	No CEM vs.	<i>B (SE)</i>	95% CI for Odds Ratio			<i>p</i>
			Lower	Odds Ratio	Upper	
Intercept	CEN only	-1.770 (.857)				.039*
	CEA only	-4.516 (1.370)				.001**
	Combined CEA/CEN	-2.170 (1.084)				<.001***
Individual-Child Factors						
Sex (female)	CEN only	.915 (.298)	1.393	2.497	4.478	.002**
	CEA only	.716 (.385)	1.247	2.087	3.492	.005
	Combined CEA/CEN	1.332 (.343)	1.934	3.788	7.421	<.001***
Individual-Parent Factors						
Parental Substance Abuse (yes)	CEN only	.690 (.385)	.961	2.046	4.241	.073
	CEA only	.053 (.392)	.489	1.055	2.275	.892
	Combined CEA/CEN	-.588 (.487)	.214	.555	1.443	.227
Microsystem						
Maternal Figure (yes)	CEN only	-1.576 (.736)	.049	.207	.875	.032*
	CEA only	.517 (1.280)	.137	1.667	20.593	.686
	Combined CEA/CEN	-1.841 (.941)	.025	.159	1.003	.050
Family Structure (both parents)	CEN only					
	Single Parent	.843 (.416)	1.028	2.324	5.252	.043*
	Parent and Step-Parent	.880 (.582)	.771	2.411	7.543	.130
	Other	.745 (.887)	.370	2.107	11.986	.401
	CEA only					
	Single Parent	.409 (.881)	.268	1.505	8.459	.643
	Parent and Step-Parent	.090 (.594)	.341	1.094	3.505	.880

		Other	-1.029 (.565)	.118	.357	1.081	.069
		Combined CEA/CEN					
		Single Parent	-.579 (.617)	.167	.560	1.876	.348
		Parent and Step-Parent	1.424 (.605)	1.268	4.153	13.601	.019*
		Other	-.552 (1.215)	.053	.576	1.003	.050
	Witnessing Interparental Verbal Abuse (yes)	CEN only	.310 (.315)	.736	1.363	2.526	.325
		CEA only	1.163 (.292)	1.805	3.199	5.669	<.001***
		Combined CEA/CEN	.923 (.362)	1.238	2.517	5.116	.011*
	Expressive Caregiving	CEN only	-.503 (.181)	.424	.605	.863	.006**
		CEA only	-.256 (.158)	.568	.774	1.055	.105
		Combined CEA/CEN	-.624 (.193)	.367	.536	.782	.001**
	Perceived Unfairness	CEN only	1.186 (.218)	2.133	3.273	5.022	<.001***
		CEA only	1.278 (.198)	2.435	3.588	5.289	<.001***
		Combined CEA/CEN	1.994 (.255)	4.453	7.345	12.117	<.001***
	Family Cohesion	CEN only	-.434 (.171)	.463	.648	.906	.011*
		CEA only	.267 (.154)	.965	1.306	1.766	.084
		Combined CEA/CEN	-.306 (.185)	.513	.736	1.058	.098
	Family Conflict	CEN only	-.113 (.197)	.607	.893	1.315	.568
		CEA only	.700 (.180)	1.416	2.013	2.862	<.001***
		Combined CEA/CEN	.853 (.235)	1.482	2.347	3.717	<.001***
	Positive Dominant Expressiveness	CEN only	-.475 (.178)	.439	.622	.882	.008**
		CEA only	-.330 (.163)	.523	.719	.989	.042*
		Combined CEA/CEN	-.623 (.192)	.368	.536	.781	.001**
	Negative Dominant Expressiveness	CEN only	-.011 (.198)	.671	.989	1.475	.956
		CEA only	.595 (.177)	1.281	1.812	2.565	.001**
		Combined CEA/CEN	.268 (.212)	.863	1.308	1.981	.206
Exosystem-Social Factors							

	Mother's Highest Level of Education (no hs diploma or GED)	CEN only					
		High School Diploma/ GED	-.229 (.449)	.330	.795	1.918	.610
		Some College/ 2 Year Degree	-.100 (.472)	.359	.905	2.283	.833
		4 Year Degree/ Postgraduate Education	-.695 (.469)	.499	1.049	2.451	.912
		CEA only					
		High School Diploma/ GED	.463 (.455)	.651	1.589	3.879	.309
		Some College/ 2 Year Degree	.111 (.484)	.432	1.117	2.885	.819
		4 Year Degree/ Postgraduate Education	.835 (.457)	.941	2.305	5.643	.068
		Combined CEA/CEN					
		High School Diploma/ GED	-.639 (.506)	.196	.528	1.422	.207
		Some College/ 2 Year Degree	-.522 (.528)	.211	.593	1.670	.323
		4 Year Degree/ Postgraduate Education	-.653 (.502)	.194	.520	1.393	.194
	Macrosystem-Cultural Beliefs and Attitudes						
	Ethnicity (white or American Indian/ Alaskan Native)	CEN only					
		Black	-.704 (.774)	.109	.495	2.254	.363

		Hispanic/ Latino -a	-.770 (.488)	.178	.463	1.204	.114
		Asian/Pacific Islander	.048 (.433)	.449	1.049	2.451	.912
		CEA only					
		Black	-.096 (.585)	.288	.908	2.860	.869
		Hispanic/ Latino -a	.111 (.484)	.432	1.117	2.885	.819
		Asian/Pacific Islander	.835 (.457)	.941	2.305	5.643	.068
		Combined CEA/CEN					
		Black	-1.181 (.789)	.065	.307	1.441	.134
		Hispanic/ Latino -a	-1.748 (.549)	.059	.174	.510	.001**
		Asian/Pacific Islander	-.502 (.451)	.250	.605	1.464	.265

Table 14

Zero-Order Correlations between Study 3 Variables for Total Sample and by Sex

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1	--	.505 ***	.336 ***	.277 ***	.209 ***	.561 ***	-.043	-.184 ***	-.175 ***	.090 *	.261 ***	-.168 ***	-.169 ***	-.161 ***	-.140 ***	-.282 ***	.336 ***	-.595 ***	
2	.520 ***	--	.181 ***	.191 ***	.194 ***	.346 ***	-.043	-.174 ***	-.205 ***	.133 ***	.139 ***	-.199 ***	-.076 ***	-.149 ***	-.193 ***	-.322 ***	.300 ***	-.570 ***	
3	.395 ***	.216 ***	--	.074 *	.176 ***	.274 ***	-.063	-.029	.001	.192 ***	.084*	-.010	-.030	.013	-.008	-.021	.015	-.173 ***	
4	.197 ***	.198 ***	.078 .067	--	.116 ***	.147 ***	-.051	-.105 **	-.112 **	.066	.112 **	-.089 *	-.092 *	-.059 ***	-.050	-.140 ***	.204 ***	-.196 ***	
5	.216 ***	.212 ***	.183 ***	.133 ***	--	.411 ***	.058	-.015	-.017	.045	.034	-.087 *	-.031	-.028	-.067	-.020	.056	-.149 ***	
6	.596 ***	.377 ***	.304 ***	.165 ***	.433 ***	--	.026	-.140 ***	-.090 *	.128 ***	.187 ***	-.131 ***	-.117 **	-.099 **	-.127 ***	-.218 ***	.237 ***	-.412 ***	
7	-.072	-.018	-.070	-.073	.081	-.024	--	.409	.234	-.135	-.076	-.013	.063	.099	.058	.129	-.049	.092*	

	.019	-.083	-.049	-.012	.010	.120 *		***	***	***	*			**		***		
8	-.189 *** -.165 **	-.177 *** -.158 **	-.024 -.035	-.133 ** -.036	.009 .048	-.168 *** -.073	.368 *** .482 ***	--	.688 ***	-.041	-.115 **	.215 ***	.182 ***	.192 ***	.158 ***	.528 ***	-.361 ***	.291 ***
9	-.142 ** -.235 ***	-.189 *** -.224 ***	.007 -.009	-.097 * -.106	-.035 -.059	-.087 *** -.082	.182 *** .334 ***	.694 ***	--	.035	-.126 **	.277 ***	.202 ***	.285 ***	.259 ***	.553 ***	-.438	.316 ***
10	.143 ** .108	.189 *** .338 ***	.078 -.021	.193 *** .128 *	.028 .100	.187 *** -.228 ***	-.057 -.093	-.024 -.043	.053 -.043	--	.133 ***	-.039	-.067	-.058 **	-.047	-.078 *	.075*	-.087 *
11	.276 *** .234 ***	.126 ** .158 **	.073 ** .102	.129 ** -.085	.058 -.016	.264 *** -.042	-.047 -.120 *	-.098 ** -.141 *	-.075 -.222 ***	.121 ** .153 **	--	-.113 **	-.239 ***	-.086 ***	-.009	-.212 ***	.375 ***	-.252 ***
12	-.197 *** -.121 *	-.248 *** -.124 *	-.043 .045	-.086 -.114	-.115 * -.046	-.197 *** -.017	-.046 .040	.232 *** .198 **	.279 *** .304 ***	-.126 ** .082	-.160 ** -.033	--	.305 ***	.414 ***	.429 ***	.406 ***	-.330 ***	.288 ***
13	-.158 ** -.199 **	-.067 -.093	-.008 .005	-.102 * -.082	-.043 -.011	-.140 ** -.076	.015 .141*	.179 *** .191 **	.172 *** .271 ***	-.026 -.104	-.258 *** -.204 ***	.307 *** .297 ***	--	.324 ***	.203 ***	.322 ***	-.376 ***	.296 ***
14	-.159 ** -.194	-.152 ** -.164	-.003 .039	-.011 -.182 **	.024 -.079	-.119 * -.083	.078 .132*	.175 *** .250*	.275 *** .363*	-.017 -.044	-.071 -.108	.451 *** .341*	.340 *** .296*	--	.878 ***	.302 ***	-.296 ***	.225 ***

	**	**						**	**			**	**					
15	-.152 **	-.193 ***	-.065 .078	-.032 -.138	-.061 -.140	-.152 **	.044 .081	.169 ***	.280 ***	.029 -.042	-.032 .027	.487 ***	.253 ***	.893 ***	--	.278 ***	-.234 ***	.237 ***
	-.162 **	-.233 ***		*	*	-.122 *		.183 **	.308 ***			.331 ***	.123*	.853 ***			-.179 **	
16	-.286 ***	-.329 ***	-.048 .025	-.166 ***	-.014 .033	-.273 ***	.077 .219	.540 ***	.543 ***	-.091 -.080	-.229 ***	.445 ***	.284 ***	.284 ***	.293 ***	--	-.451 ***	-.468 ***
	-.279 ***	-.314 ***		-.094		-.121 *	***	.514 ***	.578 ***		-.189 **	.346 ***	.389 ***	.345 ***	.274 ***			
17	.349 ***	.311 ***	.022	.200 ***	.047	.268 ***	-.046	-.355 ***	-.413 ***	.098*	.384 ***	-.370 ***	-.365 ***	-.283 ***	-.273 ***	-.593 ***		-.410 ***
	.303 ***														-.510			
18	-.641 ***	-.598 ***	-.243 ***	-.206 ***	-.176 ***	-.451 ***	.064 .145*	.307 ***	.287 ***	-.078 -.143	-.276 ***	.327 ***	.270 ***	.197 ***	.222 ***	.470 ***	.222 ***	-.509 ***
	-.484 **	-.509 ***	-.037	-.159 **	-.064	-.320 ***		.251 ***	.363 ***	***	-.207 ***	.228 ***	-.353 ***	.311 ***	.318 **	.476 ***	-.451 ***	

Note: 1=CEA, 2=CEN, 3=Childhood Physical Abuse, 4=Childhood Sexual Abuse, 5=Witnessing Interparental Physical Violence, 6=Witnessing Interparental Verbal Aggression, 7=GPA, 8=Harter Academic Competence, 9=Harter Intellectual Ability, 10=Criminal Acts, 11=STAXI Anger Expressed Outwardly, 12=Harter Close Friendships, 13=IPPA Peer Alienation, 14=IPPA Peer Trust, 15=IPPA Peer Communication, 16=Harter Global Self Worth, 17=DERS Emotion Regulation, 18=IPPA Parent Alienation.

Statistics for the total sample above the diagonal. Split by sex below the diagonal, with females above males.

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

Table 15

Results of Hierarchical Regression Examining Predictive Power of CEA on Academic Achievement (Self Perception of Scholastic Competence) in non-Asian and Asian Participants

	Variables	b	SE (b)	Beta	<i>F or t</i>	R^2	Adj. R^2	ΔR^2	Variables	b	SE (b)	Beta	<i>F or t</i>	R^2	Adj. R^2	ΔR^2
Step 1					1.39	.005	.001						20.89***	.026	.025	
	Sex	.052	.066	.042	.79					-.184	.053	-.139	-3.48**			
	Ethnicity									--	--	--	--			
	Black	.037	.111	.013	.33					--	--	--	--			
	Hispanic	-.075	.066	-.056	-1.13					--	--	--	--			
Step 2					2.93**	.028	.019	.023					7.58***	.056	.049	.030
	Substance Abuse	.008	.104	.003	.08					-.170	.156	-.040	-1.09			
	Physical Abuse	.171	.122	.058	1.41					.092	.097	.041	.95			
	Sexual Abuse	-.031	.091	-.014	-.34					-.052	.116	-.017	-.45			
	Witness DV	.149	.092	.069	1.61					-.061	.096	-.025	-.63			
	Emotional Neglect	-.041	.015	-.121	-2.83**				Emotional Neglect	-.028	.012	-.095	-2.23*			
Step 3					2.85**	.031	.020	.003					7.72***	.066	.057	.010
	Emotional Abuse	-.014	.010	-.067	-1.47				Emotional Abuse	-.026	.009	-.126	-2.85**			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. b-coefficients, b-coefficient standard errors, and Beta coefficients reported from the final model (step 3).

Table 16

Results of Hierarchical Regression Examining Predictive Power of CEN on Academic Achievement (Self Perception of Scholastic Competence) in non-Asian and Asian Participants

	Variables	b	SE (b)	Beta	<i>F</i> or <i>t</i>	<i>R</i> ²	Adj. <i>R</i> ²	ΔR^2	Variables	b	SE (b)	Beta	<i>F</i> or <i>t</i>	<i>R</i> ²	Adj. <i>R</i> ²	ΔR^2
Step 1					1.39	.005	.001						20.89***	.026	.025	
	Sex	.052	.066	.042	.79					-.184	.053	-.139	-3.48**			
	Ethnicity									--	--	--	--			
	Black	.037	.111	.013	.33					--	--	--	--			
	Hispanic	-.075	.066	-.056	-1.13					--	--	--	--			
Step 2					2.19*	.021	.011	.016					8.14***	.060	.053	.034
	Substance Abuse	.008	.104	.003	.08					-.170	.156	-.040	-1.09			
	Physical Abuse	.171	.122	.058	1.41					.092	.097	.041	.95			
	Sexual Abuse	-.031	.091	-.014	-.34					-.052	.116	-.017	-.45			
	Witness DV	.149	.092	.069	1.61					-.061	.096	-.025	-.63			
	Emotional Abuse	-.014	.010	-.067	-1.47				Emotional Abuse	-.026	.009	-.126	-2.85**			
Step 3					2.85**	.031	.020	.010					7.72***	.066	.057	.006
	Emotional Neglect	-.041	.015	-.121	-2.83**				Emotional Neglect	-.028	.012	-.095	-2.23*			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. b-coefficients, b-coefficient standard errors, and Beta coefficients reported from the final model (step 3)

Table 17

Results of Hierarchical Regression Examining Predictive Power of CEA on Academic Achievement (Self Perception of Intellectual Ability) in non-Asian and Asian Participants

	Variables	b	SE (b)	Beta	<i>F</i> or <i>t</i>	<i>R</i> ²	Adj. <i>R</i> ²	ΔR^2	Variables	b	SE (b)	Beta	<i>F</i> or <i>t</i>	<i>R</i> ²	Adj. <i>R</i> ²	ΔR^2
Step 1					5.98 ***	.022	.018						30.25 ***	.038	.037	
	Sex	-.060	.065	-.049	-.92					-.258	.052	-.196	-4.91 ***			
	Ethnicity									--	--	--	--			
	Black	.377	.111	.131	3.41**					--	--	--	--			
	Hispanic	.040	.066	.030	.614					--	--	--	--			
Step 2					6.57 ***	.061	.052	.040					9.69 ***	.071	.063	.033
	Substance Abuse	.194	.104	.075	1.87					-.098	.155	-.023	-.64			
	Physical Abuse	.136	.121	.045	1.12					.052	.096	.023	.54			
	Sexual Abuse	-.063	.090	-.028	-.70					.102	.115	.034	.89			
	Witness DV	.041	.092	.019	.45					.020	.096	.008	.21			
	Emotional Neglect	-.056	.015	-.162	-3.86 ***				Emotional Neglect	-.038	.012	-.130	-3.07 **			
Step 3					6.20 ***	.065	.054	.004					9.18 ***	.078	.069	.007
	Emotional Abuse	-.017	.010	-.079	-1.76				Emotional Abuse	-.022	.009	-.106	-2.40 *			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. b-coefficients, b-coefficient standard errors, and Beta coefficients reported from the final model (step 3).

Table 18

Results of Hierarchical Regression Examining Predictive Power of CEN on Academic Achievement (Self Perception of Intellectual Ability) in non-Asian and Asian Participants

	Variables	b	SE (b)	Beta	<i>F or t</i>	R^2	Adj. R^2	ΔR^2	Variables	b	SE (b)	Beta	<i>F or t</i>	R^2	Adj. R^2	ΔR^2
Step 1					5.98 ***	.022	.018						30.25 ***	.038	.037	
	Sex	-.060	.065	-.049	-.92					-.258	.052	-.196	-4.94 ***			
	Ethnicity									--	--	--	--			
	Black	.377	.111	.131	3.41 ***					--	--	--	--			
	Hispanic	.040	.066	.030	.61					--	--	--	--			
Step 2					5.03 ***	.048	.038	.026					9.04 ***	.066	.059	.028
	Substance Abuse	.194	.104	.075	1.87					-.098	.155	-.023	-.64			
	Physical Abuse	.136	.121	.045	1.12					.052	.096	.023	.54			
	Sexual Abuse	-.063	.090	-.028	-.70					.102	.115	.034	.89			
	Witness DV	.041	.092	.019	.45					.020	.096	.008	.21			
	Emotional Abuse	-.017	.010	-.079	-1.76				Emotional Abuse	-.022	.009	-.106	-2.40 *			
Step 3					6.20 ***	.065	.054	.017					9.18 ***	.078	.069	.011
	Emotional Neglect	-.056	.015	-.162	-3.86 ***				Emotional Neglect	-.038	.012	-.130	-3.07 **			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. b-coefficients, b-coefficient standard errors, and Beta coefficients reported from the final model (step 3)

Table 19

Results of Hierarchical Regression Examining Predictive Power of CEA on Conduct (Types of Crime Committed) in non-Asian and Asian Participants

	Variables	b	SE (b)	Beta	<i>F</i> or <i>t</i>	<i>R</i> ²	Adj. <i>R</i> ²	ΔR^2	Variables	b	SE (b)	Beta	<i>F</i> or <i>t</i>	<i>R</i> ²	Adj. <i>R</i> ²	ΔR^2
Step 1					9.22 ***	.034	.031						4.06*	.005	.004	
	Sex	-.246	.057	-.235	-4.34 ***					-.291	.059	-.198	-4.91 ***			
	Ethnicity									--	--	--	--			
	Black	-.145	.095	-.059	-1.52					--	--	--	--			
	Hispanic	.100	.057	.086	1.75					--	--	--	--			
Step 2					6.67 **	.065	.055	.030					12.49 ***	.093	.086	.088
	Substance Abuse	.201	.091	.090	2.22*					.250	.180	.051	1.39			
	Physical Abuse	-.132	.108	-.050	-1.23					.389	.110	.153	3.53 ***			
	Sexual Abuse	.142	.079	.074	1.81					.259	.131	.079	1.98*			
	Witness DV	-.036	.080	-.019	-.45					.185	.111	.068	1.68			
	Emotional Neglect	.012	.013	.041	.94				Emotional Neglect	.036	.014	.110	2.55*			
Step 3					7.10 ***	.077	.066	.012					10.78 ***	.094	.085	.001
	Emotional Abuse	.027	.008	.145	3.14 **				Emotional Abuse	.008	.010	.033	.73			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. b-coefficients, b-coefficient standard errors, and Beta coefficients reported from the final model (step 3).

Table 20

Results of Hierarchical Regression Examining Predictive Power of CEN on Conduct (Types of Crime Committed) in non-Asian and Asian Participants

	Variables	b	SE (b)	Beta	<i>F or t</i>	R^2	Adj. R^2	ΔR^2	Variables	b	SE (b)	Beta	<i>F or t</i>	R^2	Adj. R^2	ΔR^2
Step 1					9.22 ***	.034	.031						4.06*	.005	.004	
	Sex	-.246	.057	-.235	-4.34 ***					-.291	.059	-.198	-4.91 ***			
	Ethnicity									--	--	--	--			
	Black	-.145	.095	-.059	-1.52					--	--	--	--			
	Hispanic	.100	.057	.086	1.75					--	--	--	--			
Step 2					7.87 ***	.076	.066	.041					11.41 ***	.086	.078	.080
	Substance Abuse	.201	.091	.090	2.22*					.250	.180	.051	1.39			
	Physical Abuse	-.132	.108	-.050	-1.23					.389	.110	.153	3.53 ***			
	Sexual Abuse	.142	.079	.074	1.81					.259	.131	.079	1.98*			
	Witness DV	-.036	.080	-.019	-.45					.185	.111	.068	1.68			
	Emotional Abuse	.027	.008	.145	3.14 **				Emotional Abuse	.008	.010	.033	.73			
Step 3					7.10 ***	.077	.066	.001					10.78 ***	.094	.085	.008
	Emotional Neglect	.012	.013	.041	.94				Emotional Neglect	.036	.014	.110	2.55*			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. b-coefficients, b-coefficient standard errors, and Beta coefficients reported from the final model (step 3)

Table 21

Results of Hierarchical Regression Examining Predictive Power of CEA on Conduct (Anger Expressed Outwardly) in non-Asian and Asian Participants

	Variables	b	SE (b)	Beta	<i>F</i> or <i>t</i>	<i>R</i> ²	Adj. <i>R</i> ²	ΔR^2	Variables	b	SE (b)	Beta	<i>F</i> or <i>t</i>	<i>R</i> ²	Adj. <i>R</i> ²	ΔR^2
Step 1					1.08	.004	.000						.05	.000	-.001	
	Sex	.014	.067	.011	.21					-.084	.051	-.066	-1.64			
	Ethnicity									--	--	--	--			
	Black	-.130	.114	-.044	-1.14					--	--	--	--			
	Hispanic	-.052	.068	-.038	-.78					--	--	--	--			
Step 2					2.20*	.021	.012	.017					3.98**	.030	.023	.030
	Substance Abuse	.158	.107	.060	1.48					-.008	.151	-.002	-.06			
	Physical Abuse	-.197	.124	-.064	-1.58					.130	.094	.060	1.39			
	Sexual Abuse	.099	.093	.043	1.07					.025	.112	.009	.22			
	Witness DV	.026	.094	.011	.27					.161	.093	.070	1.74			
	Emotional Neglect	-.012	.015	-.034	-.79				Emotional Neglect	-.019	.012	-.068	-1.60			
Step 3					4.89***	.051	.041	.030					6.98***	.060	.051	.030
	Emotional Abuse	.051	.010	.229	5.09***				Emotional Abuse	.044	.009	.219	4.92***			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. b-coefficients, b-coefficient standard errors, and Beta coefficients reported from the final model (step 3).

Table 22

Results of Hierarchical Regression Examining Predictive Power of CEN on Conduct (Anger Expressed Outwardly) in non-Asian and Asian Participants

	Variables	b	SE (b)	Beta	<i>F</i> or <i>t</i>	<i>R</i> ²	Adj. <i>R</i> ²	ΔR^2	Variables	b	SE (b)	Beta	<i>F</i> or <i>t</i>	<i>R</i> ²	Adj. <i>R</i> ²	ΔR^2
Step 1					1.08	.004	.000						.05	.000	.000	
	Sex	.014	.067	.011	.21					-.084	.051	-.066	-1.64			
	Ethnicity									--	--	--	--			
	Black	-.130	.114	-.044	-1.14					--	--	--	--			
	Hispanic	-.052	.068	-.038	-.78					--	--	--	--			
Step 2					5.43 ***	.051	.041	.047					7.70 ***	.057	.049	.057
	Substance Abuse	.158	.107	.060	1.48					-.008	.151	-.002	-.06			
	Physical Abuse	-.197	.124	-.064	-1.58					.130	.094	.060	1.39			
	Sexual Abuse	.099	.093	.043	1.07					.025	.112	.009	.22			
	Witness DV	.026	.094	.011	.27					.161	.093	.070	1.74			
	Emotional Abuse	.051	.010	.229	5.09 ***				Emotional Abuse	.044	.009	.219	4.92 ***			
Step 3					4.89 ***	.051	.041	.001					6.98 ***	.060	.051	.003
	Emotional Neglect	-.012	.015	-.034	-.79				Emotional Neglect	-.019	.012	-.068	-1.60			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. b-coefficients, b-coefficient standard errors, and Beta coefficients reported from the final model (step 3)

Table 23

Results of Hierarchical Regression Examining Predictive Power of CEA on Social Competence and Friendship (Self Perception of Close Friendships) in non-Asian and Asian Participants

	Variables	b	SE (b)	Beta	F or t	R ²	Adj. R ²	ΔR ²	Variables	b	SE (b)	Beta	F or t	R ²	Adj. R ²	ΔR ²
Step 1					2.49	.009	.005						1.53	.002	.001	
	Sex	.163	.064	.136	2.56*					.098	.053	.073	1.84			
	Ethnicity									--	--	--	--			
	Black	-.094	.108	-.034	-.87					--	--	--	--			
	Hispanic	-.068	.064	-.052	-1.07					--	--	--	--			
Step 2					6.16***	.058	.048	.048					9.10***	.067	.059	.065
	Substance Abuse	.054	.101	.021	.53					-.164	.158	-.038	-1.04			
	Physical Abuse	-.031	.118	-.010	-.26					.074	.099	.032	.75			
	Sexual Abuse	-.040	.088	-.018	-.46					-.014	.118	-.005	-.12			
	Witness DV	-.053	.090	-.025	-.59					-.070	.098	-.029	-.72			
	Emotional Neglect	-.072	.014	-.214	-5.06***				Emotional Neglect	-.054	.013	-.182	-4.29***			
Step 3					5.46***	.058	.000	.003					8.95***	.076	.067	.009
	Emotional Abuse	<.001	.009	.000	-.00				Emotional Abuse	-.026	.009	-.122	-2.76**			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. b-coefficients, b-coefficient standard errors, and Beta coefficients reported from the final model (step 3).

Table 24

Results of Hierarchical Regression Examining Predictive Power of CEN on Social Competence and Friendship (Self Perception of Close Friendships) in non-Asian and Asian Participants

	Variables	b	SE (b)	Beta	<i>F</i> or <i>t</i>	<i>R</i> ²	Adj. <i>R</i> ²	ΔR^2	Variables	b	SE (b)	Beta	<i>F</i> or <i>t</i>	<i>R</i> ²	Adj. <i>R</i> ²	ΔR^2
Step 1					2.48	.009	.005						1.53	.002	.001	
	Sex	.163	.064	.136	2.56*					.098	.053	.073	1.84			
	Ethnicity									--	--	--	--			
	Black	-.094	.108	-.034	-.87					--	--	--	--			
	Hispanic	-.068	.064	-.052	-1.07					--	--	--	--			
Step 2					2.85**	.028	.018	.018					7.21***	.053	.046	.051
	Substance Abuse	.054	.101	.021	.53					-.164	.158	-.038	-1.04			
	Physical Abuse	-.031	.118	-.010	-.26					.074	.099	.032	.75			
	Sexual Abuse	-.040	.088	-.018	-.46					-.014	.118	-.005	-.12			
	Witness DV	-.053	.090	-.025	-.59					-.070	.098	-.029	-.72			
	Emotional Abuse	<	.009	.000	-.00				Emotional Abuse	-.026	.009	-.122	-2.76**			
Step 3					5.46***	.058	.047	.030					8.95***	.076	.067	.022
	Emotional Neglect	-.072	.014	-.214	-5.06***				Emotional Neglect	-.054	.013	-.182	-4.29***			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. b-coefficients, b-coefficient standard errors, and Beta coefficients reported from the final model (step 3)

Table 25

Results of Hierarchical Regression Examining Predictive Power of CEA on Social Competence and Friendship (Peer Alienation) in non-Asian and Asian Participants

	Variables	b	SE (b)	Beta	<i>F</i> or <i>t</i>	<i>R</i> ²	Adj. <i>R</i> ²	ΔR^2	Variables	b	SE (b)	Beta	<i>F</i> or <i>t</i>	<i>R</i> ²	Adj. <i>R</i> ²	ΔR^2
Step 1					8.68***	.034	.030						1.07	.001	.000	
	Sex	.139	.065	.120	2.14*					-.015	.054	-.012	-.28			
	Ethnicity									--	--	--	--			
	Black	-.084	.111	-.030	-.76					--	--	--	--			
	Hispanic	.097	.065	.076	1.48					--	--	--	--			
Step 2					5.10**	.052	.042	.018					2.36*	.019	.011	.018
	Parental Substance Abuse	.087	.105	.035	.83					-.099	.164	-.023	-.61			
	Physical Abuse	.046	.122	.016	.37					-.013	.100	-.006	-.13			
	Sexual Abuse	-.091	.090	-.042	-1.01					-.054	.119	-.018	-.45			
	Witness DV	-.038	.091	-.018	-.42					.000	.099	.000	.00			
	Emotional Neglect	-.016	.015	-.050	-1.12				Emotional Neglect	.001	.013	.004	.10			
Step 3					5.39***	.062	.050	.009					4.70***	.044	.034	.024
	Emotional Abuse	-.026	.010	-.129	-2.72**				Emotional Abuse	-.040	.009	-.199	-4.29***			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. b-coefficients, b-coefficient standard errors, and Beta coefficients reported from the final model (step 3).

Table 26

Results of Hierarchical Regression Examining Predictive Power of CEN on Social Competence and Friendship (Peer Alienation) in non-Asian and Asian Participants

	Variables	b	SE (b)	Beta	<i>F or t</i>	R^2	Adj. R^2	ΔR^2	Variables	b	SE (b)	Beta	<i>F or t</i>	R^2	Adj. R^2	ΔR^2
Step 1					8.68 ***	.034	.030						1.07	.001	.000	
	Sex	.139	.065	.120	2.14*					-.015	.054	-.012	-.28			
	Ethnicity									--	--	--	--			
	Black	-.084	.111	-.030	-.76					--	--	--	--			
	Hispanic	.097	.065	.076	1.48					--	--	--	--			
Step 2					5.91 ***	.060	.050	.026					5.49 ***	.044	.036	.042
	Substance Abuse	.087	.105	.035	.83					-.099	.164	-.023	-.61			
	Physical Abuse	.046	.122	.016	.37					-.013	.100	-.006	-.13			
	Sexual Abuse	-.091	.090	-.042	-1.01					-.054	.119	-.018	-.45			
	Witness DV	-.038	.091	-.018	-.42					.000	.099	.000	.00			
	Emotional Abuse	-.026	.010	-.129	-2.72 **				Emotional Abuse	-.040	.009	-.199	-4.29 ***			
Step 3					5.39 ***	.062	.050	.002					4.70 ***	.044	.034	.000
	Emotional Neglect	-.016	.015	-.050	-1.12				Emotional Neglect	.001	.013	.004	.095			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. b-coefficients, b-coefficient standard errors, and Beta coefficients reported from the final model (step 3)

Table 27

Results of Hierarchical Regression Examining Predictive Power of CEA on Social Competence and Friendship (Peer Trust) in non-Asian and Asian Participants

	Variables	b	SE (b)	Beta	<i>F or t</i>	R^2	Adj. R^2	ΔR^2	Variables	b	SE (b)	Beta	<i>F or t</i>	R^2	Adj. R^2	ΔR^2
Step 1					17.69***	.067	.063						2.28	.003	.002	
	Sex	.337	.062	.297	5.46***					.134	.057	.098	2.35*			
	Ethnicity									--	--	--	--			
	Black	-.210	.106	-.077	-1.98*					--	--	--	--			
	Hispanic	-.150	.062	-.120	-2.42*					--	--	--	--			
Step 2					11.61***	.112	.101	.045					5.76***	.046	.038	.043
	Parental Substance Abuse	.034	.100	.014	.35					-.030	.173	-.007	-.18			
	Physical Abuse	.100	.116	.035	.86					-.243	.105	-.103	-2.31*			
	Sexual Abuse	.067	.086	.032	.78					.158	.126	.051	1.26			
	Witness DV	.035	.087	.017	.41					-.086	.105	-.035	-.82			
	Emotional Neglect	-.075	.014	-.231	-5.35***				Emotional Neglect	-.023	.013	-.077	-1.73			
Step 3					10.3***	.112	.101	.000					5.56***	.051	.042	.006
	Emotional Abuse	.002	.009	.012	.26				Emotional Abuse	-.020	.010	-.095	-2.06*			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. b-coefficients, b-coefficient standard errors, and Beta coefficients reported from the final model (step 3).

Table 28

Results of Hierarchical Regression Examining Predictive Power of CEN on Social Competence and Friendship (Peer Trust) in non-Asian and Asian Participants

	Variables	b	SE (b)	Beta	<i>F</i> or <i>t</i>	<i>R</i> ²	Adj. <i>R</i> ²	ΔR^2	Variables	b	SE (b)	Beta	<i>F</i> or <i>t</i>	<i>R</i> ²	Adj. <i>R</i> ²	ΔR^2
Step 1					17.69 ***	.067	.063						2.28	.003	.002	
	Sex	.337	.062	.297	5.46 ***					.134	.057	.098	2.35*			
	Ethnicity									--	--	--	--			
	Black	-.210	.106	-.077	-1.98*					--	--	--	--			
	Hispanic	-.150	.062	-.120	-2.42*					--	--	--	--			
Step 2					7.74 ***	.077	.067	.011					5.97 ***	.047	.039	.044
	Substance Abuse	.034	.100	.014	.35					-.030	.173	-.007	-.18			
	Physical Abuse	.100	.116	.035	.86					-.243	.105	-.103	-2.31*			
	Sexual Abuse	.067	.086	.032	.78					.158	.126	.051	1.26			
	Witness DV	.035	.087	.017	.41					-.086	.105	-.035	-.82			
	Emotional Abuse	.002	.009	.012	.26				Emotional Abuse	-.020	.010	-.095	-2.06*			
Step 3					10.31 ***	.112	.101	.034					5.56 ***	.051	.042	.004
	Emotional Neglect	-.075	.014	-.231	- 5.347 ***				Emotional Neglect	-.023	.013	-.077	-1.73			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. b-coefficients, b-coefficient standard errors, and Beta coefficients reported from the final model (step 3)

Table 29

Results of Hierarchical Regression Examining Predictive Power of CEA on Social Competence and Friendship (Peer Communication) in non-Asian and Asian Participants

	Variables	b	SE (b)	Beta	<i>F</i> or <i>t</i>	<i>R</i> ²	Adj. <i>R</i> ²	ΔR^2	Variables	b	SE (b)	Beta	<i>F</i> or <i>t</i>	<i>R</i> ²	Adj. <i>R</i> ²	ΔR^2
Step 1					21.05 ***	.078	.074						4.35*	.006	.005	
	Sex	.461	.064	.389	7.21 ***					.168	.055	.127	3.05 **			
	Ethnicity									--	--	--	--			
	Black	-.202	.109	-.072	-1.86					--	--	--	--			
	Hispanic	-.230	.064	-.176	-3.59 ***					--	--	--	--			
Step 2					12.46 ***	.119	.109	.040					6.55 ***	.052	.044	.046
	Substance Abuse	-.009	.103	-.004	-.09					-.011	.168	-.003	-.07			
	Physical Abuse	.005	.120	.002	.04					-.216	.102	-.094	-2.12 *			
	Sexual Abuse	-.020	.089	-.009	-.23					.080	.122	.027	.66			
	Witness DV	-.043	.089	-.020	-.48					-.098	.102	-.040	-.96			
	Emotional Neglect	-.084	.014	-.248	-5.79 ***				Emotional Neglect	-.042	.013	-.143	-3.19 **			
Step 3					11.55 ***	.123	.113	.005					5.63 ***	.052	.043	.000
	Emotional Abuse	.019	.010	.090	1.985 *				Emotional Abuse	-.004	.010	-.018	-.40			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. b-coefficients, b-coefficient standard errors, and Beta coefficients reported from the final model (step 3).

Table 30

Results of Hierarchical Regression Examining Predictive Power of CEN on Social Competence and Friendship (Peer Communication) in non-Asian and Asian Participants

	Variables	b	SE (b)	Beta	<i>F</i> or <i>t</i>	R^2	Adj. R^2	ΔR^2	Variables	b	SE (b)	Beta	<i>F</i> or <i>t</i>	R^2	Adj. R^2	ΔR^2
Step 1					21.05***	.078	.074						4.35*	.006	.005	
	Sex	.461	.064	.389	7.21***					.168	.055	.127	3.05**			
	Ethnicity									--	--	--	--			
	Black	-.202	.109	-.072	-1.86					--	--	--	--			
	Hispanic	-.230	.064	-.176	-3.59***					--	--	--	--			
Step 2					8.44***	.084	.074	.005					4.81***	.039	.031	.033
	Substance Abuse	-.009	.103	-.004	-.09					-.011	.168	-.003	-.07			
	Physical Abuse	.005	.120	.002	.04					-.216	.102	-.094	-2.12*			
	Sexual Abuse	-.020	.089	-.009	-.23					.080	.122	.027	.66			
	Witness DV	-.043	.089	-.020	-.48					-.098	.102	-.040	-.96			
	Emotional Abuse	.019	.010	.090	1.99*				Emotional Abuse	-.004	.010	-.018	-.40			
Step 3					11.55***	.123	.113	.040					5.63***	.052	.043	.013
	Emotional Neglect	-.084	.014	-.248	-5.79***				Emotional Neglect	-.042	.013	-.143	-3.19**			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. b-coefficients, b-coefficient standard errors, and Beta coefficients reported from the final model (step 3)

Table 31

Demographic Characteristics and Difference Tests for Asian and Non-Asian Participants

	Asian (n = 915)	Non-Asian (n = 967)		Total Sample (N=2052)
Age	<i>M (SD)</i>	<i>M (SD)</i>	$t(1807) = .368, p = .242$	<i>M (SD)</i>
	19.12 (1.36)	19.14 (1.64)		19.12 (1.48)
Born in US	n (%)	n (%)	$X^2(1) = 96.244, p < .001^{***}$	n (%)
No	265 (29.0)	106 (11.0)		371 (19.7)
Yes	650 (71.0)	861 (89.0)		1511 (80.3)
Current Living Arrangement	n (%)	n (%)	$X^2(2) = 91.129, p < .001^{***}$	n (%)
On-Campus	503 (54.9)	507 (52.5)		1010 (53.7)
Off-Campus (not with family)	317 (34.6)	207 (21.5)		524 (27.9)
Off-Campus (with family)	96 (10.5)	251 (26.0)		347 (18.4)
Current Year in School	n (%)	n (%)	$X^2(3) = 8.373, p = .039^*$	n (%)
First-year	497 (54.4)	573 (59.2)		1070 (56.9)
Sophomore	204 (22.3)	217 (22.4)		421 (22.4)
Junior	147 (16.1)	131 (13.5)		278 (14.8)
Senior	66 (7.2)	47 (4.9)		113 (6.0)
Highest Parental Education	n (%)	n (%)	$X^2(6) = 132.606, p < .001^{***}$	n (%)
Grade school	31 (3.6)	98 (10.3)		129 (7.1)
Some high school	42 (4.9)	73 (7.7)		115 (6.3)
HS graduate	86 (9.9)	175 (18.4)		261 (14.4)
Some college	103 (11.9)	153 (16.1)		256 (14.1)
2 year degree	42 (4.9)	73 (7.7)		115 (6.3)
4 year degree	363 (42.0)	207 (21.8)		570 (31.4)
Postgraduate work	198 (22.9)	171 (18.0)		369 (20.3)

Primary living situation growing up	n (%)	n (%)	$\chi^2(3) = 25.468, p < .001^{***}$	n (%)
Both parents	788 (86.2)	751 (77.8)		1539 (81.9)
Single parent	77 (8.4)	130 (13.5)		207 (11.0)
Parent and step-parent/partner	32 (3.5)	67 (6.9)		99 (5.3)
other	17 (1.9)	17 (1.8)		34 (1.8)
CEM (continuous)	<i>M (SD)</i>	<i>M (SD)</i>		<i>M (SD)</i>
CEA	13.92 (4.86)	12.90 (4.73)	$t(1880) = 4.606, p = .518$	13.48 (4.88)
CEN	8.83 (3.31)	8.18 (2.98)	$t(1883) = 4.494, p < .001^{***}$	8.49 (3.15)
CEM (categorical)	n (%)	n (%)	$\chi^2(3) = 14.858, p = .002^{**}$	n (%)
No CEM (Contrast Group)	630 (68.9)	735 (76.1)		1365 (72.6)
CEN Only	82 (9.0)	60 (6.2)		142 (7.5)
CEA Only	99 (10.8)	96 (9.9)		195 (10.4)
Combined CEN/ CEA	104 (11.4)	75 (7.8)		179 (9.5)

Table 32

Birth Countries of Asian and Pacific Island-identified Participants if not U.S.

Country of birth (Asian/ Pacific Island-identified participants only, n=238)		n	%
China		53	25.0
Korea/ South Korea		55	25.9
Phillippines		29	13.7
Vietnam		49	23.1
Other		26	12.3
	Burma/ Myanmar	5	2.4
	Japan	5	2.4
	Thailand	5	2.4
	Indonesia	4	1.9
	Taiwan	3	1.4
	Australia	1	.5
	Fiji	1	.5
	Malaysia	1	.5
	Tonga	1	.5

Table 33

CEM Group and Country of Birth among Asian and Non-Asian Participants

	Asian (n = 915)	Non-Asian (n = 967)		Total Sample (N=1878)
No CEM (Contrast group)	n (%)	n (%)	$X^2(1) = 82.716,$ $p < .001^{***}$	n (%)
Born in U.S.	438 (69.7)	657 (89.4)		1095 (80.3)
Born outside of U.S.	190 (30.3)	78 (10.6)		268 (19.7)
CEN Only			$X^2(1) = 11.805,$ $p = .001^{***}$	
Born in U.S.	57 (69.5)	55 (93.2)		112 (79.4)
Born outside of U.S.	25 (30.5)	4 (6.8)		29 (20.6)
CEA Only			$X^2(1) = 3.630,$ $p = .057$	
Born in U.S.	75 (75.8)	83 (86.5)		158 (81.0)
Born outside of U.S.	24 (24.2)	13 (13.5)		37 (19.0)
Combined CEN/CEA			$X^2(1) = 2.382,$ $p = .123$	
Born in U.S.	79 (76.0)	64 (85.3)		143 (79.9)
Born outside of U.S.	25 (24.0)	11 (14.7)		36 (20.1)

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Appendix A: Stamped Form from UMN IRB – Received via e-mail on 8/15/2013

UNIVERSITY OF MINNESOTA

DETERMINATION OF HUMAN SUBJECT RESEARCH

Version 1.0

Created July 2013, go <http://www.irb.umn.edu> for the latest version

This form is used to help researchers determine if a project requires IRB review. If evidence that IRB review is not required, this form may be used to document that the IRB has reviewed the project description and issued a determination. Please allow two (2) business days for review and response.

Route this form to: Human Research Protection Program	U Wide Form Aug 2013
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Project Title

If the project is funded, the project title must match grant title.
If the project is funded by multiple grants, provide all grant titles below:

Childhood Emotional Abuse in an Undergraduate College Student Sample

FOR IRB USE ONLY:
Based on the information provided, this project does not meet the regulatory definition of human subjects research. **IRB approval IS NOT required.**

Contact Information

Name (Last name, First name MI): Clarke, Stephanie B.	Affiliation: <input checked="" type="checkbox"/> U of M <input type="checkbox"/> Fairview <input type="checkbox"/> Gillette <input type="checkbox"/> Other
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Phone Number: (617)680-0270	U of M Department Institute of Child Development

Project Description

1. Provide a brief description of your project. Include a description of what any participants will be asked to do and a description of the data accessed and/or collected (1,000 character limit).

This is a previously-collected dataset from Tuppett Yates, PhD, at University of California, Riverside and therefore was processed and overseen by the IRB at UC-Riverside. The data include self-report measures of childhood family experiences and current social and emotional functioning. In terms of potentially identifying demographic information, variables include: sex, age, major, year in college, ethnicity, and country of origin (if not born in the United States).

Is it Human Subjects Research as Defined by Federal Regulations?

Research is defined in the Code of Federal Regulations, 45CFR46.102(d), as a *systematic investigation designed to develop or contribute to generalizable knowledge*

2. Do you have a specific research question or hypothesis?
 YES NO