

From Maltreatment to Outcomes: Examining the Role of Explanations and
Expectations as Mediators of the Maltreatment – Outcome Relation in Youth

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Abstract

The relation between explanatory style, expectations, and behavioral outcomes (adaptive and maladaptive) were examined for 46 youth exposed to maltreatment currently in foster care (Mean age = 11.64, $SD = 2.54$). Youth participants were administered the Children's Attribution Style Questionnaire – Revised and Youth Life Orientation Test; caregivers completed the Behavior Assessment System for Children – 2nd Edition. Results indicated comparatively higher rates of negative mental health outcomes in youth with a history of maltreatment living in foster care compared to children in the general population. Children's expectations were not found to mediate the relation between explanatory style and outcomes (internalizing, externalizing, or adaptive outcomes). The results are contrary to previous research supporting relations between explanatory style, expectations, and behavioral outcomes. Implications of the results for the field are discussed.

From Maltreatment to Outcomes: Examining the Role of Explanations and Expectations as Mediators of the Maltreatment – Outcome Relation in Youth
Research in Child Maltreatment

The extant body of literature within the field of child maltreatment has demonstrated robust relations between exposure to child maltreatment and a host of deleterious mental health outcomes in children (McGloin & Widom, 2001). Although it is not always clear if the relation is a linear one, with exposure to maltreatment leading to psychopathology, the majority of the literature shows that maltreatment is associated with negative mental health outcomes, including internalizing disorders (i.e., Post-Traumatic Stress Disorder, anxiety, depression, and dissociative disorders) (Kaplow, Dodge, Amaya-Jackson & Saxe, 2005) and externalizing problems (i.e., aggressive behavior) (English, Graham, Litrownik, Everson, & Bangdiwala, 2005). For many maltreated children, these difficulties persist into adulthood (Collishaw et al., 2007).

Researchers have also demonstrated that some children appear unaffected by their maltreatment experiences (Jaffee, Caspi, Moffitt, Polo-Tomas, & Taylor, 2007). Luthar, Cicchetti, and Becker (2000) provided a summary of the research to date, which suggests that some children who have experienced maltreatment fare well developmentally, academically, and socially in spite of their experiences. Studies examining resilience in adult samples lend further support for the idea that maltreatment does not always lead to deleterious behavioral outcomes. For example, McGloin and Widom (2001) found that approximately 22% of a sample of 676 adults

with a documented history of maltreatment displayed resilience despite their maltreatment experiences. These researchers assessed resilience across many domains, including lack of adult psychopathology, effective parental functioning, quality of adult relationships, lack of substance abuse problems, and absence of involvement in criminal activity.

These results suggest a wide variation in behavioral outcomes for children exposed to maltreatment. The study of child maltreatment is complicated by the fact that numerous factors appear to influence the presence of mental health outcomes. It is likely, therefore, that a myriad of possible variables influence outcomes in maltreated youth. The focus of the current study will be to examine how cognitive processes operate for children exposed to maltreatment. The results will likely shed light on how an individual's perception of stressful life events is important to understanding outcomes in maltreated youth.

Lines of Inquiry

Child maltreatment is multidimensional; as a result, researchers have explored a multitude of pathways from maltreatment to outcome. First, researchers have shown that the severity, chronicity, and type of maltreatment affect the kinds of mental health outcomes children display. As would be expected, children who experience chronic and severe maltreatment manifest more negative mental health outcomes when compared to children who experience transitory and less severe levels of maltreatment (Manly, Kim, Rogosch, & Cicchetti, 2001; Ethier, Lemelin, & Lacharite, 2004). When type of maltreatment is considered, physical abuse has been

strongly associated with both internalizing and externalizing behavioral problems; neglect has been found to associate most strongly with internalizing symptoms and withdrawn behavior (Manly, Kim, Rogosch, & Cicchetti, 2001).

Second, researchers have examined developmental factors that may influence negative mental health outcomes in maltreated children. Previous studies have most often utilized age as a proxy for developmental level, and have included controls for demographic factors such as gender and ethnicity when testing how maltreatment and development impact outcomes. One such study, conducted by Kaplow and Widom (2007), found different negative mental health outcomes due to exposure to maltreatment as a function of the age of onset of maltreatment experiences. Specifically, early onset of maltreatment predicted more internalizing symptoms, while maltreatment occurring later in childhood predicted more externalizing difficulties.

A third emerging area of research in child maltreatment examines contextual variables (e.g., family environment, sources of family and social support) in attempting to account for the large amount of variance in negative mental health outcomes in maltreated children. Such an approach holds intuitive appeal, given that children are dependent on a system of providers who are responsible for their physiological, emotional, and developmental needs. Contextual factors implicated as providing protective benefits for children and adolescence include family support, social support, and support from broader social networks (Daining & DePanfilis, 2007; Rutter et al., 1998).

The aforementioned foci of the qualities of the maltreatment experience, and the developmental, demographic, and contextual variables all constitute important lines of research within the field of child maltreatment. These emphases, however, have overlooked an important aspect of the maltreatment-outcome relation. Specifically, cognitive-level variables and interpretations of the maltreatment experience likely play an important role in a child's adjustment to maltreatment. For example, PTSD is one of the most common outcomes for children exposed to maltreatment (Kaplow, Dodge, Amaya-Jackson, & Saxe, 2005). A diagnosis of PTSD, however, requires a *perceived* threat of harm to the integrity of self or significant others. Yet, researchers have only recently begun to examine how perception of threatening events may influence the maltreatment-outcome relation among children (Teisl & Cicchetti, 2008). Until recently, researchers have assumed that all children with a history of maltreatment perceived the event as threatening, with no clear measurement of these perceptions. At best, previous researchers have utilized proxy variables (i.e., how often the maltreatment occurred) to determine how threatening the maltreatment experience was for the child. It may be, however, that children differ in their interpretations of their maltreatment experiences, with this differing perception influencing the myriad and varied reactions and outcomes in child behavior. Thus, examination of children's cognitive conceptualizations of events may add an important component to understanding the maltreatment-outcome relation.

Theoretical perspective

Few theories of how cognitive processes relate to behavioral outcomes exist within the scientific literature on maltreated children. Popular terms that have arisen in the literature include *optimism* and *pessimism*, *hope* and *hopelessness*, and *positive* and *negative appraisals*. Unfortunately, few operational definitions exist with which to quantify these lofty concepts; they are often used interchangeably, confusing terms used in everyday life with the scientific pursuit of quantification and operationalization. One exception is the model offered by the Reformulated Learned Helplessness Theory (RLHT).

Reformulated Learned Helplessness Theory

Postulated initially by Abramson, Seligman, and Teasdale in 1978, the RLHT attempted to explain how an individual's perception of life events can influence mental health outcomes. Revised in 1989 by Abramson, Alloy, and Metalsky, the model suggests that behavioral outcomes are the product of several links. The first link is between explanations and behavioral outcomes. Explanations can be thought of as the way in which events are routinely understood by the individual. Explanations for events can vary along three dimensions including a) internal vs. external, b) stable vs. unstable, and c) global vs. specific. Negative explanations for *adverse events* entail a pattern of internal (specific to the self), stable (unchanging), and global (occurring across numerous situations) explanations. Negative explanations for *positive events* entail general qualities of external (non-specific to self), unstable (fleeting), and non-global (occurring in isolation or rarely) perceptions

of events. Conversely, positive explanations for *adverse events* include external, unstable, and non-global perceptions of events. Positive explanations for *positive events* include internal, stable, and global perceptions (See *Figure 1*).

Figure 1. Explanatory dimensions within the RLHT.

		<u>Explanation for Events</u>	
		Positive	Negative
<u>Event Valence</u>	Positive	<p>Explanations: Internal, Stable, and Global</p> <p>Example: "I passed the test because I am smart."</p>	<p>Explanations: External, Unstable, Nonglobal</p> <p>Example: "I passed the test only because this particular teacher was happy with me today."</p>
	Negative	<p>Explanations: External, Unstable, Nonglobal</p> <p>Example: "I failed the test because I received the test numbered '13', which is unlucky."</p>	<p>Explanations: Internal, Stable, and Global</p> <p>Example: "I failed a test because I am dumb."</p>

Examples borrowed in part from Davidson, Neale, & Krings (2004).

Although the RLHT provides a context for understanding the nature of an individual's explanations for events, it is still unclear how research should best conceptualize what constitutes an *adverse* or a *positive* event. It is possible that some events can be universally considered adverse (i.e., torture). It is also possible that individuals provide their own subjective explanation for events and may differ on whether the same event will be judged as adverse or positive (Jackson & Warren, 2000). In either case, according to the RLHT, explanations for events likely play a

role in not only how the individual understands events, but also for predicting the individual's subsequent behavior after the event. According to Abramson, Seligman, and Teasdale (1978), negative explanations for events can drain motivation and persistence, while positive explanations can provide protective benefits against depression.

Cognitive Explanations for Life Events

Past research has supported the idea put forth by the RLHT, namely, that explanations influence behavioral outcomes in children. For example, Conley, Haines, Hilt, and Metalsky (2001), using the Children's Attribution Style Interview examined the relation between explanations for positive and negative life events and depression among 147 children between the ages of 5 and 10. Results from this study indicated that children with negative explanations for positive life events evidenced significant increases in depressive symptoms between pretest and posttest (approximately 3 weeks later). Children with positive explanations for negative life events did not increase in depressive symptoms from pretest to posttest. Interestingly, an interaction between age and explanatory style was found. Older children with positive explanations for positive life events displayed the largest decrease in depressive symptoms from pretest to posttest (Conley, Haines, Hilt, & Metalsky, 2001). Although this study did not examine children with a history of maltreatment, the findings do provide some evidence of the possible importance of explanatory style in the stress exposure - outcome relation.

Given the strong link between maltreatment and a variety of negative mental health outcomes, it is important for researchers to examine whether tenets of the RLHT can be applied to children exposed to maltreatment. Because not all children exposed to negative life events manifest equifinality in outcomes, it may be helpful to apply elements of the RHLT to the study of maltreated children to explain how these varied outcomes occur. Specifically, according to the theory, children's explanations for experiences likely influence their reactions to events as well as their behavioral outcomes.

A recent study conducted by Runyon and Kenny (2002) lends support to the idea that explanations for events are related to behavioral outcomes even for children exposed to maltreatment. Within this study, 98 maltreated children between the ages of 8 and 17 were assessed for depression, PTSD-related distress, and their explanatory style for life events. Results from this study indicated that negative explanations for life events significantly predicted depressive symptoms, even after controlling for type of abuse (physical vs. sexual), gender, and age effects. An explanatory style x abuse type interaction was found for predicting PTSD – related distress. Specifically, explanatory style and abuse type significantly predicted PTSD – related distress for sexually abused, but not physically maltreated children. This preliminary study has helped to further the field's understanding of the importance of the cognitive processes in the maltreatment-outcome relation. Although explanations for life events appear to be important, the salience of an additional cognitive factor

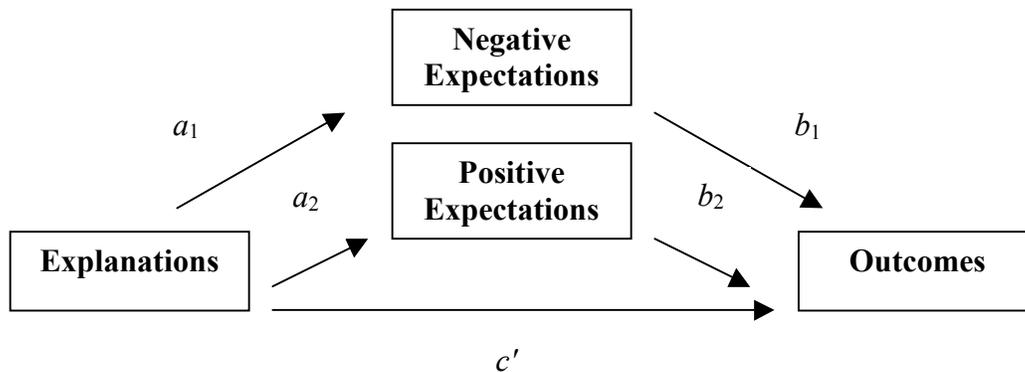
has been implicated by the RLHT. Specifically, expectations for future life events are likely also an important component in the maltreatment-outcome pathway.

Cognitive Expectations for Life Events

The second link in the RLHT posits that individuals internalize explanations for life events, and that these explanations create expectations for future life events. Whereas explanations can be thought of as *why* something happened, expectations are ideas children form about *what can be expected to happen in the future*. As an example, an individual who perceives negative occurrences as stable, pervasive, and internal to oneself is likely to form the expectation that negative life events cannot be changed or avoided. This individual will then come to expect similar outcomes for other life events, and as a result may manifest behaviors typical of distress (i.e., decreased effort, loss of interest, and apathy). Expectations then serve as a possible mediator of the relation between explanations and behavioral outcome. That is, the individual will display maladjustment as an indicator of their negative expectations, which are a product of their explanations (See *Figure 2*).

Preliminary support for the idea that expectations influence outcomes in children comes from a study conducted by Ey et al. (2005). In this study, the Youth Life Orientation Test (YLOT) was developed as a scale to measure children's negative and positive expectations for events. The study examined the utility of the measure as a means of predicting depression and anxiety within a sample of 204 3rd – 6th graders. Participants were administered the YLOT near the beginning

Figure 2. Theoretical relation between explanations, expectations, and behavioral outcomes: Multiple mediation.



of the school year, and again after 7 months. Parents also completed behavioral rating forms on their children. Results from this study indicated that children with positive expectations evidenced significantly fewer depressive symptoms at follow-up when compared to children with negative expectations for future life events. Furthermore, children with positive expectations evidenced significantly fewer parent-reported externalizing problems when compared with children who held negative expectations for life events. Children with negative expectations evidenced significantly greater levels of anxiety symptoms than children who endorsed more positive expectations at follow-up.

Explanations and Expectations

So far, researchers have provided support for the relation between explanations for events and behavioral outcomes. Researchers have also supported the existence of a relation between expectations for life events and behavioral outcomes, though few of these studies have directly examined these constructs

together or within populations of children exposed to maltreatment. Furthermore, the final link in the model (the relation between explanations and expectations) remains unclear. The RLHT posits that negative explanatory styles (e.g. internal, stable, and global explanations for negative life events) become the basis for expectations for future events. Thus, the theory implies that expectations mediate the relation between explanations for life events and behavioral outcomes. According to Abramson and colleagues (1978), “the attribution merely predicts the recurrence of the expectations but the expectation determines...deficits.” (p. 58).

This line of reasoning differs from Abramson, Alloy, and Metalsky’s revision of the model, in that in the revision, explanations and expectations are only two of many expected pathways to behavioral outcomes (Abramson, Alloy, & Metalsky, 1989). The limited research that has included both versions of the theory has done little in the way of determining which version of the RLHT accounts for the largest amount of variance in behavioral outcomes. At best, this research has demonstrated modest correlations between explanations and expectations (Gillham, Shatte, Reivich, & Seligman, 2001). At worst, the two constructs are often used interchangeably. Theoretically, the relation between explanations and expectations present an important and understudied gap within the literature. Examining these cognitive constructs with children exposed to maltreatment may render clearer understanding of the multifinality in emotional and behavioral outcomes these children manifest.

Limits of Past Research and Current Study

Although past research has demonstrated strong relations between maltreatment and negative mental health outcomes in children, few studies have attempted to understand the cognitive processes by which this occurs. Although the RLHT has given us a framework for testing these relations, the extent to which cognitive processes operate within this model have yet to be tested. In nearly all of the extant studies, little attempt is made to differentiate explanations for events from expectancies related to those explanations. Moreover, little to no research has tested if a child's explanatory style is actually predictive of expectations, and how these expectations may influence behavioral outcome as suggested by the RLHT. Specifically, whether expectations mediate the relation between explanations and behavioral outcomes has yet to be examined. Including both constructs (which have been shown to influence outcomes) within the framework of a theory (RLHT) would likely give us a clearer picture as to which cognitive variables are important in the maltreatment – outcome relation.

The purpose of the current study was to examine the importance of children's explanations for *why* as well as *what can be expected to happen next* in understanding the differential behavioral outcomes for children exposed to maltreatment. Specifically, the present study examined whether expectations for future events mediate the relation between explanations for life events and negative mental health outcomes in children exposed to maltreatment. It was predicted that: 1) children exposed to maltreatment would evidence disproportionately higher rates of negative

mental health outcomes (e.g., internalizing and externalizing difficulties) when compared to recent national prevalence data as provided by government research (U.S. Department of Health and Human Services, 1999) and various epidemiological studies. It is was also predicted that: 2) positive explanations and expectations would be significantly and positively related to adaptive mental health outcomes (e.g., adaptability, leadership, social skills, and functional communication), while negative expectations would be positively and significantly related to maladaptive mental health outcomes (e.g., internalizing and externalizing behaviors). Finally, it was predicted that 3) the relation between explanations for life events and mental health outcomes would be mediated by children's expectations for life events. Specifically, it was hypothesized that the sum of effects for positive and negative expectations would significantly reduce the effects of explanations (predictor) on internalizing, externalizing, and adaptive behaviors (outcomes). Higher positive expectations would be related to higher levels of adaptive functioning, as well as lower levels of internalizing and externalizing behaviors. Higher negative expectations would be related to lower levels of adaptive functioning, as well as higher levels of internalizing and externalizing difficulties.

By illuminating the roles of explanations and expectations, the current study may add clarity to the more broad models of childhood trauma. Ideally, contextual, demographic, ecological, and individual factors would be studied in conjunction to determine their interactive effects in the pathway from maltreatment to negative mental health outcomes. Because it is not clear, however, which cognitive factors are

salient in the maltreatment-outcome relation, it may be too early for the field to attempt to generate broader models accounting for these numerous factors.

Behavioral outcomes are likely mediated and moderated by cognitive processes; thus, the importance of cognition and the means by which cognitive processes influence this pathway have yet to be determined.

Method

Participants

Participants were 46 youth in foster care between the ages of 8 and 16 years (Mean age = 11.64, $SD = 2.54$) and their caregivers. Participants lived in or within 20 miles of a medium-sized, midwestern city. According to recent Adoption and Foster Care Analysis and Reporting System (AFCARS) data, a large majority of youth in foster care are Caucasian (Non-Hispanic [41%]) or African American (Non-Hispanic [32%]), while approximately 18% are Hispanic (U.S. Department of Health and Human Services, 2006). Nine percent of the estimated 513,000 youth in foster care during the 2005 fiscal year were classified as having an ethnicity other than those previously mentioned. According to the same survey, youth in foster care are approximately equal in terms of gender representation (48% female, 52% male). Efforts were made during recruitment to collect a sample whose ethnic representation mirrored these percentages. Frequency analyses conducted on the obtained sample indicated comparability to national AFCARS data in terms of both gender and ethnic representation. Forty-eight percent ($N = 22$) of the sample were female, while the remaining 52% were male. The ethnic representation of the obtained youth sample

was as follows: 46% European-American, 35% African American, 9% Hispanic, 8% Bi-racial, and 2% Native American.

Though no information is currently provided by the Department of Health and Human Services in regards to average annual caregiver income, caregivers often represent a wide range of educational attainment and socioeconomic status.

Educational attainment was examined for the obtained sample for both male and female caregivers. Female caregivers ranged from 8 to 16 years of education ($M = 13$ years, $SD = 1.88$). Male caregivers ranged from 12 to 16 years of education ($M = 14.4$, $SD = 2.03$). Yearly income was used as an indicator of socioeconomic status. Combined yearly income for caregivers ranged from \$20,000 to \$214,000 per year ($M = \$58,740$ per year, $SD = \$32,385$ per year). For the obtained sample, all participants surveyed attended regular classrooms, and did not have a history of Mental Retardation or Pervasive Developmental disorders.

Measures

Demographic Form

Caregivers were asked to complete a demographic form including general information about the child (e.g., age, date of birth, grade, ethnicity, gender, medical/mental health history). The demographic form also included questions about the caregiver (e.g., marital status, educational attainment, income, occupation). Finally, the questionnaire contained questions related to general living arrangements (e.g., siblings in the household, number of family members).

Explanations

The Children's Attributional Style Questionnaire – Revised (CASQ – R; Thompson, Kaslow, Weiss, & Nolen-Hoeksema, 1998) was administered to assess children's explanations for a series of hypothetical events. The CASQ – R is a 24-item, forced choice, self-report questionnaire composed of 12 negative and 12 positive events. The questionnaire asks respondents to choose from 2 possible causes of for the event; each question assesses one dimension of explanatory style (internality, stability, and globality) while holding the other two constant. As an example, one item from the CASQ – R asks the respondent to choose between two explanations for the statement *A good friend tells you that he or she hates you*. Response options include 1) *My friend was in a bad mood that day* or 2) *I wasn't nice to my friend that day*. This question assesses the extent to which the respondent views the event as internal vs. external, while controlling for the stability and globality of the explanation. The CASQ – R yields 3 subscales, including a *full positive subscale*, *full negative subscale*, and a *full composite subscale* (full positive minus full negative). The current study used the full composite subscale as a measure of explanations for life events. This subscale was chosen due to the comparative strength of its psychometric properties, and also because it represents an overall ratio between negative and positive explanations across various life events.

The CASQ – R has demonstrated moderate internal consistency. Among a sample of 475 children between the ages of 9 and 12, an alpha coefficient of .61 was obtained for the full composite scale. Alpha coefficients for the full positive and full

negative subscales were .60 and .46, respectively. Test-retest reliability was also assessed for the composite, full positive, and full negative subscales. Measures were administered to 475 children at 6-month follow up. Correlations for the composite scale ($r = .53, p < .001$), full positive subscale ($r = .53, p < .001$), and full negative scale ($r = .38, p < .001$) were fairly stable at follow up (Thompson, Kaslow, Weiss, & Nolen-Hoeksema, 1998). The alpha for the CASQ – R full composite scale in the current study was .56.

Criterion-related validity has previously been assessed via comparison of the CASQ – R (both positive and negative subscales) with the Vanderbilt Depression Inventory (VDI; Weiss & Garber, 1995). Higher negative CASQ – R subscale scores were significantly related to more self-reported VDI depressive symptoms. Higher positive CASQ – R subscale scores were significantly related to less self-reported VDI depressive symptoms (both $ps < .001$) (Thompson, Kaslow, Weiss, & Nolen – Hoeksema, 1998).

Expectations

The Youth Life Orientation Test (Y-LOT) was administered to assess children's positive and negative expectations for life events. The Y-LOT is a 19-item self-report questionnaire which asks respondents to rate a number of statements on a 4-point Likert scale (3 = "True for me", 0 = "Not true for me"). A sample item from the Y – LOT asks respondents to rate for themselves the statement *When things are bad, I expect them to get better* (positive expectation) (Ey et al., 2005). The Y-LOT yields 3 scores including positive expectations for events, negative expectations for

events, and total optimism. Scales are scored so that higher numbers represent greater expectations along specific dimensions (e.g., higher positive expectation scores represent more positive expectations for events).

The Y-LOT has demonstrated strong internal consistency. Among a sample of 204 third to sixth grade children, an alpha coefficient of .83 was obtained for the total optimism scale. Alpha coefficients for the positive and negative expectation scales were .79 and .78, respectively. Test – retest reliability was assessed at 1 month and 7 months. At one month, correlations were strong for positive and negative expectations ($r = .68, p < .001$) as well as for total optimism ($r = .70, p < .001$). Correlations for all subscales were significant after 7 months, falling between .45 and .5 ($p < .001$). For the current study, both the positive and negative expectation subscales were included in analyses. Alphas for the positive and negative expectation scales were .77 and .69, respectively. The positive and negative subscales were chosen for analyses rather than the composite scale; the two subscales were moderately correlated, suggesting distinct but related constructs ($r = -.45, p < .005$).

Convergent and discriminant validity of the Y-LOT have previously been assessed through comparison with existing measures of hope and self-efficacy. Total optimism and positive expectation scores were positively and moderately related to the Children's Hope Scale (.47 and .54 respectively, $p < .001$) (Snyder et al., 1997). Total optimism and positive expectation scores were positively and moderately related to the Harter Self - Perception Global Self - Worth scale (.48 and .36 respectively, $p < .001$) (Harter, 1985). Pessimism scores obtained on the Y-LOT were

negatively and moderately correlated with measures of hope ($r = -.34, p < .001$) and self-esteem ($r = -.49, p < .001$) (Ey et al., 2005).

Behavioral Outcomes

The Behavior Assessment System for Children – Second Edition (BASC – II; Reynolds & Kamphaus, 2004) was administered to caregivers to assess both problem behaviors and adaptive skills. One of two versions of the BASC – II was given to caregivers according to the youth's age (BASC – II – Child Report = ages 6 to 11; BASC – II – Adolescent Report = ages 12 to 16). The BASC – II Parent Report: Child (PRC) version is a 160-item questionnaire yielding 14 subscales and 4 composite scores. Respondents are asked to rate a number of behaviors on a 4 – point Likert scale (“Never” to “Almost Always”); composite indices include Externalizing, Internalizing, Behavioral Symptoms, and Adaptive Skill scores. The BASC – II Parent Report: Adolescent (PRA) version yields indices and subscales similar to the child version, but contains 150 items.

Strong internal consistency has been found for composite indices and subscales on the BASC – II parent forms (Chronbach's alpha between .72 and .95, $p < .001$). Test – retest reliability for the parent rating scales are generally in the low .90s ($p < .001$), with retests occurring at 7 and 90-day intervals from initial administration. BASC – II subscale score correlations were examined for the obtained sample to determine the degree of relation among subscales within each composite. For Externalizing composite subscales, correlations ranged between .54 and .73 ($p < .001$). For the Internalizing composite subscales, correlations ranged between .42 and

.61 ($p < .005$). For the Adaptive Skills composite subscale, correlations ranged between .55 and .87 ($p < .001$).

A variety of methods have been utilized to establish the validity of the BASC – II PR measures. First, the BASC – II has been compared to other child behavior checklists. As an example, similarly named composite scales on the Achenbach System of Empirically Based Assessment Child Behavior Checklist (ASEBA; Achenbach & Rescorla, 2004) have been found to correlate highly with scales from the BASC – II PR. Correlations between the two Externalizing problem scales were between .74 and .83. Correlations between the two Internalizing scales were between .65 and .77.

Further evidence for the validity of the BASC – II PR measures has been provided by factor analytic procedures of the scales and composites comprising the BASC – II. The scale developers conducted Confirmatory Factor Analyses (CFAs) examining the loadings of particular subscales on Composite dimensions of the BASC – II. Results indicated high and unique factor loadings for the Externalizing subscales (between .59 and .92), Internalizing subscales (between .70 and .83), and the Adaptive subscales (between .73 and .86). Both the Externalizing and Internalizing composite scores were negatively related to the Adaptive Skill composite (-.47 and -.20, respectively).

A CFA was conducted on BASC – II data obtained from the current sample. The analysis utilized three factors; subscales included were those comprising the BASC – II Externalizing, Internalizing, and Adaptive Skills Composite indices. The

three factors that emerged accounted for approximately 77% of the total variance in BASC – II scores. Results indicated high and unique factor loadings for the Externalizing subscales (between .65 and .93), Internalizing subscales (between .59 and .86), and the Adaptive subscales (between .67 and .94). Both the Externalizing and Internalizing composite scores were negatively related to the Adaptive Skill composite (-.59 and -.30, respectively). The Externalizing, Internalizing, and Adaptive Skills composites were utilized in analyses for the current study, given their demonstrated reliability and validity.

Procedures

To obtain a sample of children exposed to maltreatment, recruitment was completed in several ways. First, the Children’s Division of the Department of Family Services (DFS) within a large, metropolitan area was contacted and informed about the purpose of the study. Direct area managers within the system were also contacted regarding recruitment. Following discussion of the rationale and plan, permission to contact caregivers of children in the expected age group was obtained. Caregivers were mailed recruitment letters with postage-paid return envelopes to indicate interest in participation. Caregivers expressing interest in participating were contacted via telephone, provided with the rationale and purpose of the study, and scheduled for a data collection appointment at their homes.

Caregivers were also recruited via presentations at various training meetings sponsored by the DFS. These presentations involved a short description of research related to children and maltreatment as well as the purpose of the current study.

Interested parents were given a recruitment flyer as well as a tear-away form providing means for contacting the researchers to schedule a participation date. Finally, recruitment flyers were included within various mailings circulated by the DFS and the Midwest Foster Care and Adoption Association. These flyers included the purpose of the study, risks involved, and compensation for study participation.

Caregivers expressing interest in participation (whether via phone or mail contact) were contacted by a graduate-level research assistant to schedule a time to have measures administered at their homes. The research assistant answered questions from interested caregivers and confirmed that the child met study criteria during this contact. Caregivers were informed that data collection would take approximately 2 - 3 hours to complete.

Data collection was conducted at the homes of caregivers, with a minimum of two research assistants present. Informed consent was obtained from caregivers, while assent was obtained from youth participants. The limits of confidentiality (e.g., harm to self or others) were discussed with both youth and their caregivers. Caregivers were asked to fill out study measures independently of youth participants to ensure confidentiality of youth's answers and also to decrease the possibility of social desirability in responding. Data collection involved administering a large number of measures on psychological health. The measures in the current study were a part of a larger battery of measures. For the current study, caregivers completed the demographic form and the BASC – II (PRA or PRC), while youth participants completed the CASQ – R and the Y-LOT. Younger children (those under the age of

12) were read items from the study measures, and their responses were recorded by a research assistant. Youth over the age of 12 were instructed to read and respond to measures independently. A research assistant was also present for youth over 12 years old to answer questions and to explain response methods for each measure.

Following data collection, caregivers received \$60 per child for their time and participation. Children received their choice of a small toy or gift certificate valued at \$10. Caregivers were given contact information for various local mental health providers in the case that their children experienced negative mental health conditions as a result of completing the study measures. Caregivers were also informed that they would receive a copy of results from the study, reported in terms of group means, upon request. Youth were asked to speak with their caregivers in the event that they experienced negative effects as a result of completing study measures. Finally, a graduate-level research assistant examined study measures for items indicating danger of harm to self or others. In the event that the researcher found items indicating the possibility of harm, caregivers were informed of such responses. Furthermore, confidentiality with caregivers was suspended in instances where parental or youth responses indicated the possibility of maltreatment or harm to the child. The parent was informed that a report would be filed with the appropriate agencies (Department of Social and Rehabilitation Services or law enforcement agencies). Caregivers were also encouraged to take part in filing the report with the assistance of the graduate research assistant. The research assistant provided the

caregiver with necessary mental health referral services within the caregiver's vicinity during study debriefing.

Results

To test the predictions from hypothesis one, frequency analyses were conducted to determine whether children exposed to maltreatment evidenced disproportionately higher rates of negative mental health outcomes when compared to current national prevalence rates. Analyses were conducted on BASC – II subscales, with cutoff scores of $T > 69$ used to determine clinically significant parent-reported internalizing and externalizing behavioral problems. Odds ratios were then derived by dividing the prevalence in the obtained sample by the prevalence rates for similar disorders as reported by the U. S. Department of Health and Human Services (USDHHS) (1999), or other more recently published epidemiological data where applicable.

Results obtained from frequency analyses and odds ratio comparisons are presented in Table 1 and provide strong support for hypothesis one. According to the most recent USDHHS data (1999), the prevalence rate for Generalized Anxiety Disorder among children between the ages of 9 and 17 is approximately 3%. Within the obtained sample of youth in foster care, approximately 7% of parent – reported BASC – II anxiety subscale scores fell within the Clinically Significant classification range. When compared to youth within the general population, youth in the

Table 1. *Prevalence Rate Comparisons Between Children in Foster Care and Children in the General Population (U. S. Department of Health and Human Services, 1999).*

Disorder	Prevalence (Obtained Sample)	Prevalence (General)	Odds Ratio
Generalized Anxiety Disorder	7%	3%	2.3
Depression	15.3%	5%	3.0
ADHD (Hyperactivity)	26%	5 – 10%	2.6
(Attention Problems)	21.7%		2.2
Conduct disorder	45.8%	1 – 10%	4.6

* Reported general prevalence rates are for youth between the ages of 9 and 17.

obtained foster care sample were approximately 2.3 times more likely to display significant anxiety – related difficulties. According to epidemiological data from Angold and Costello (2001), approximately 5% of children in the general population experience some form of Depressive Disorder; the prevalence rate for the obtained sample was 15.3%, indicating that children in the obtained sample were 3.06 times more likely to experience serious mood disturbance when compared to children in the general population.

In terms of Externalizing difficulties, a review by Scahill and Schwab–Stone (2000) reported a prevalence rate of 5 – 10% for ADHD among children between the ages of 9 and 17 years. Because the BASC – II does not contain an ADHD scale, the *Hyperactivity* and *Inattentive* subscales were used as proxy measures for behaviors characterized by impulsivity, inattention, and excessive energy. Within the obtained

sample, approximately 26% of children fell within the Clinically Significant range for hyperactive behaviors. Approximately 22% fell within the Clinically Significant range for inattentive behavioral difficulties. This disparity in rates indicates that, even when accounting for the highest possible prevalence rate of ADHD in the general population (10%), children in the obtained sample were 2.6 times more likely to manifest hyperactive behaviors, and 2.2 times more likely to manifest inattentive behavioral difficulties than youth in the general population. Essau (2003) reported general prevalence rates for Conduct Disorder between 1–10%. Frequency analyses of the current sample indicated that approximately 46% of the sample fell within the Clinically Significant range for behavioral difficulties on the BASC – II Conduct subscale. When considering the most liberal estimates of Conduct Disorder in the general population (10%), the prevalence rates within the obtained sample indicate that youth in foster care are approximately 4.6 times more likely to have conduct difficulties when compared to youth in the general population.

Before testing predictions from hypothesis two, descriptive analyses were conducted on explanations for life events, expectations (both positive and negative), and behavioral outcomes (See Table 2). Mean explanatory style scores (CASQ – R Composite) were positive, indicating that children in the current sample endorsed generally positive explanations for life events ($M = 4.2$, $SD = 3.32$). Mean negative expectation scores obtained from the current sample did not differ significantly from those obtained in Ey et al.'s original standardization sample (7.80 [$SD = 4.12$] vs. 5.87 [$SD = 4.48$], respectively). Mean positive expectation scores obtained

Table 2. Means, Standard Deviations, and Bivariate Correlations Among CASQ – R, Y – LOT, and BASC- II Scores.

Table 2. Means, Standard Deviations, and Bivariate Correlations Among CASQ – R, Y - LOT, and BASC II Scores

Variables	M	SD	1	2	3	4	5	6	7	8	9
1. CASQ – R Composite	4.2	3.32	-								
2. CASQ – R Negative	3.3	1.94	-.89**	--							
3. CASQ – R Positive	7.5	1.84	.87**	-.54**	-						
4. Y – LOT Negative	7.8	4.17	-.42**	.47**	-.27	-					
5. Y – LOT Positive	14	3.56	0	.07	.07	-.45**	-				
6. BASC II - Externalizing	65.1	14.9	.04	-.03	.03	-.10	-.01	-			
7. BASC II - Internalizing	49.3	11.6	.17	-.16	.14	-.08	-.19	.42**	-		
8. BASC II – Adaptive Skills	37.8	9.94	0	.02	.17	.06	-.08	-.43**	-.20	-	
9. BASC – II - Depression	55.2	12.7	.19	-.17	.02	-.21	-.36*	.59**	.84**	-.31*	-

**Indicates significance at the .01 level (two-tailed), while * indicates significance at the .05 level (two-tailed)

from the current sample also did not differ significantly from those obtained in Ey et al.'s original standardization sample (14.02 [SD = 3.56] vs. 14.40 [SD = 3.59], respectively). Mean scores for BASC – II behavioral outcomes were as follows: Externalizing (M = 65.13, SD = 14.91), Internalizing (M = 49.26, SD = 11.60) and Adaptive Skills (M = 37.76, SD = 9.94).

To test the predictions from hypothesis two, bivariate correlations were computed. Table 2 displays the relations between explanations, expectations, and behavioral functioning at the bivariate level. Results from these bivariate analyses indicated a significant and negative relation between explanatory styles (CASQ – R composite, with higher scores representing more positive explanatory styles) and *negative expectation* scores (as measured by the Y – LOT) ($r = -.42, p < .01$). Explanatory style was not related to *positive expectation* scores, as measured by the Y – LOT (p ns). *Positive* and *negative expectation* scores obtained from the Y – LOT were significantly and negatively related ($r = -.45, p < .01$).

Next, the relation between explanations, expectations, and parent – reported Externalizing behaviors were examined. Bivariate correlations were computed for both the Externalizing Composite and select externalizing subscales. Contrary to predictions from hypothesis two, results from the analyses indicated no significant relations between CASQ – R composite scores and the Externalizing Composite. Furthermore, no significant relations were found between Y – LOT expectation scores (either positive or negative) and the Externalizing Composite. These relations were examined at the subscale level utilizing the parent reported Conduct Problems, Hyperactivity, and Attention Problems scales. No significant relations were found

between CASQ – R Composite scores and any of the subscales examined. Similarly, no significant relations were found between Y – LOT scores (either positive or negative) and any of the subscales examined. Thus, support was not found for hypothesis two regarding predicted relations between explanations, expectations, and Externalizing outcomes.

Next, the relation between explanations, expectations, and parent – reported Internalizing behaviors were examined. Bivariate correlations were computed for both the Internalizing Composite and select internalizing subscales. Contrary to predictions from hypothesis two, results from the analyses indicated no significant relations between CASQ – R composite scores and the Internalizing Composite. Furthermore, no significant relations were found between Y – LOT expectation scores (either positive or negative) and the Internalizing Composite. These relations were examined at the subscale level utilizing the parent reported Anxiety and Depression scales. No significant relations were found between CASQ – R Composite scores either of the subscales examined. Similarly, no significant relation was found between the negative expectation Y – LOT scores and the Anxiety or Depression subscales. However, a significant negative relation was found between the Y – LOT positive expectation score and the BASC – II Depression subscale ($r = -.36$, $p < .05$). Specifically, higher positive expectations were related to lower parent–reported Depression scores.

Finally, the relation between explanations, expectations, and parent – reported Adaptive behaviors were examined. Bivariate correlations were observed for both the

Adaptive Composite and select adaptive subscales. Contrary to predictions from hypothesis two, results from the analyses indicated no significant relations between CASQ – R composite scores and the Adaptive Composite. Furthermore, no significant relations were found between Y – LOT expectation scores (either positive or negative) and the Adaptive Composite. These relations were examined at the subscale level utilizing the parent reported Adaptability, Social Skills, Leadership, Activities of Daily Living, and Functional Communication scales. No significant relations were found between CASQ – R Composite scores and any of the subscales examined. Similarly, no significant relations were found between Y – LOT scores (either positive or negative) and any of the subscales examined. Thus, support was not found for hypothesis two regarding predicted relations between explanation, expectations, and Adaptive outcomes.

To test the predictions from hypothesis three, a series of multiple mediation analyses were conducted. According to Preacher and Hayes (2008), multiple mediation analyses present an improvement over Baron and Kenny's (1986) causal steps approach in that 1) it can be determined that a set of variables are responsible for the mediation the relation between the predictor and criterion variables through the examination of total indirect effects, 2) the extent to which specific mediators influence the relation between the predictor and the criterion variables with the presence of other mediators within the model may be assessed and, 3) the possibility of parameter bias due to variables unaccounted for may be reduced, because multiple

hypothesized mediators can be included within the same model (See *Figure 2* for multiple mediation pathways).

For the first mediation analysis, CASQ – R Total Composite Scores were entered as the predictor, BASC – II Externalizing behavior scores as the outcome, and Y-LOT scores (both positive and negative) as the potential mediators. The number of bootstrap iterations was set at 1000, and the confidence interval for effects was set at 95. Results for each of the model's paths (for Externalizing outcomes) were examined separately, and are displayed in Table 3.

The relation between the independent variable (CASQ –R total composite scores) and the mediators (Positive and Negative Y-LOT scores) were observed first (path a). Only the relation between CASQ – R scores and the Y – LOT negative expectation score emerged as significant ($p < .01$). Next, direct effects of the mediators on Externalizing behaviors were examined (path b). Neither of the proposed mediators (positive or negative Y – LOT scores) were significantly related to Externalizing behaviors. Examination of the total and direct effects of CASQ – R scores on Externalizing behaviors (path c and c') revealed non-significant relations. Finally, examination of the Confidence Intervals (CIs) for indirect effects generated by bootstrap sampling revealed that CI's for the proposed mediators contained the value 0, indicating non - significant effects. According to Preacher and Hays (2004), examination of these confidence intervals is preferred over the use of the Sobel test due to the possibility of violation of normality assumptions when utilizing small samples.

Table 3. *Multiple Mediation Summary for CASQ – R Scores (IV), Y – LOT Negative and Positive Scores (Mediators) and Externalizing Behaviors (DV)*

Path	β	<i>B</i>	<i>SE</i>	<i>p</i>	CIs for Indirect Effect	
					Lower	Upper
CASQ R – YLOT Negative (<i>a</i> ₁ path)	-.50	-2.91	.17	.006*		
CASQ R – YLOT Positive (<i>a</i> ₂ path)	-.02	-.10	.16	.923		
YLOT Negative – Externalizing Behaviors (<i>b</i> ₁ path)	-.91	-1.29	.71	.204		
YLOT Positive – Externalizing Behaviors (<i>b</i> ₂ path)	-.56	-.75	.75	.459		
Total Effect CASQ R – Externalizing (<i>c</i> path)	.31	.46	.67	.650		
Direct Effect CASQ R – Externalizing (<i>c'</i> path)	-.16	-.21	.76	.837		
Indirect Effects (<i>ab</i> path) Y – LOT Negative					-.174	1.469
Indirect Effects (<i>ab</i> path) Y – LOT Positive					-.196	.396

$R^2 = .046$, *p* ns.

* Indicates significance at $p < .01$.

The presence of zero within these CIs indicated that there were no significant indirect effects for CASQ – R scores on Externalizing behaviors found through the proposed mediators Overall, inconsistent with the predictions in hypothesis three, the model summary with two mediators (positive and negative expectations) emerged as non-significant, accounting for approximately 4.6% of the variance in Externalizing behavioral outcomes, $F(3, 39) = .63$, *p* ns.

For the second mediation analysis, CASQ – R Total Composite Scores were entered as the predictor, BASC – II Internalizing behavior scores as the outcome, and Y-LOT scores (both positive and negative) as the potential mediators. The number of bootstrap iterations was set at 1000, and the confidence interval for effects was set at 95. Results for each of the model’s paths (for Internalizing outcomes) were examined separately, and are displayed in Table 4.

Table 4. *Multiple Mediation Summary for CASQ – R Scores (IV), Y – LOT Negative and Positive Scores (Mediators) and Internalizing Behaviors (DV)*

Path	β	<i>B</i>	<i>SE</i>	<i>P</i>	CIs for Indirect Effect	
					Lower	Upper
CASQ R – YLOT Negative (<i>a</i> ₁ path)	-.50	-2.91	.17	.006*		
CASQ R – YLOT Positive (<i>a</i> ₂ path)	-.02	-.10	.16	.923		
YLOT Negative – Internalizing Behaviors (<i>b</i> ₁ path)	-.30	-.53	.57	.602		
YLOT Positive – Internalizing Behaviors (<i>b</i> ₂ path)	-.70	-1.17	.60	.459		
Total Effect CASQ R – Internalizing (<i>c</i> path)	.61	1.15	.53	.259		
Direct Effect CASQ R – Internalizing (<i>c'</i> path)	.45	.74	.61	.462		
Indirect Effects (<i>ab</i> path) Y – LOT Negative					-.386	.724
Indirect Effects (<i>ab</i> path) Y – LOT Positive					-.221	.463

$R^2 = .064$, *p* ns.

* Indicates significance at $p < .01$

Inspection of the results for each of the model's paths revealed that only the relation between CASQ – R scores and the Y – LOT negative expectation score emerged as significant ($p < .01$). Neither of the proposed mediators (positive or negative Y – LOT scores) were significantly related to Internalizing behaviors. Examination of the total and direct effects of CASQ – R scores on Internalizing behaviors (path c and c') revealed non-significant relations. Finally, examination of the Confidence Intervals (CIs) for indirect effects generated by bootstrap sampling revealed that CI's for the proposed mediators contained the value 0. Thus, there were no significant indirect effects for CASQ – R scores on Internalizing behaviors found through the proposed mediators. Overall, the result was inconsistent with hypothesis three as the model summary with two mediators emerged as non - significant, accounting for approximately 6.4% of the variance in Internalizing behavioral outcomes ($F [3, 39] = .89, p$ ns).

For the third mediation analysis, CASQ – R Total Composite Scores were entered as the predictor, BASC – II Adaptive skill scores as the outcome, and Y-LOT scores (both positive and negative) as the potential mediators. The number of bootstrap iterations was set at 1000, and the confidence interval for effects was set at 95. Results for each of the model's paths (for Adaptive skill outcomes) were examined separately, and are displayed in Table 5.

Table 5. *Multiple Mediation Summary for CASQ – R Scores (IV), Y – LOT Negative and Positive Scores (Mediators) and Adaptive Skills (DV)*

Path	β	<i>B</i>	<i>SE</i>	<i>p</i>	CIs for Indirect Effect	
					Lower	Upper
CASQ R – YLOT Negative (<i>a</i> ₁ path)	-.48	-2.57	.19	.014*		
CASQ R – YLOT Positive (<i>a</i> ₂ path)	-.09	-.50	.17	.617		
YLOT Negative – Adaptive Skills (<i>b</i> ₁ path)	-.81	-1.61	.51	.117		
YLOT Positive – Adaptive Skills (<i>b</i> ₂ path)	-.67	-1.21	.55	.235		
Total Effect CASQ R – Adaptive Skills (<i>c</i> path)	-.05	-.10	.496	.920		
Direct Effect CASQ R – Adaptive Skills (<i>c</i> ' path)	-.50	-.89	.56	.378		
Indirect Effects (<i>ab</i> path) Y – LOT Negative					-.016	1.215
Indirect Effects (<i>ab</i> path) Y – LOT Positive					-.073	.650

$R^2 = .076$, *p* ns.

* Indicates significance at $p < .05$.

Inspection of the results for each of the model's paths revealed that only the relation between CASQ – R scores and the Y – LOT negative expectation score was significant ($p < .05$). Neither of the proposed mediators (positive or negative Y – LOT scores) were significantly related to Adaptive Skills. Examination of the total and direct effects of CASQ – R scores on Adaptive Skills (paths *c* and *c*') revealed non-significant relations. Finally, examination of the Confidence Intervals (CIs) for

indirect effects generated by bootstrap sampling revealed that CI's for the proposed mediators contained the value 0. Thus, there were no significant indirect effects for CASQ – R scores on Adaptive Skills found through the proposed mediators. Overall, as in the previous analyses, the result was inconsistent with the predictions from hypothesis three; the model summary with two mediators emerged as non-significant, accounting for approximately 7.6% of the variance in Adaptive Skill outcomes ($F [3, 39] = .94, p \text{ ns}$).

For the final mediation analysis, CASQ – R Total Composite Scores were entered as the predictor, BASC – II Depression subscale scores as the outcome, and Y-LOT scores (both positive and negative) as the potential mediators. The number of bootstrap iterations was set at 1000, and the confidence interval for effects was set at 95. Results for each of the model's paths (for BASC – II Depression subscale outcomes) were examined separately, and are displayed in Table 6.

Inspection of the results for each of the model's paths revealed that only the relation between CASQ – R scores and the Y – LOT negative expectation score was significant ($p < .05$). Neither of the proposed mediators (positive or negative Y – LOT scores) were significantly related to Depression subscale scores. Examination of the total and direct effects of CASQ – R scores on Depression scores (paths c and c') revealed non-significant relations. Finally, examination of the Confidence Intervals (CIs) for indirect effects generated by bootstrap sampling revealed that CI's for the proposed mediators contained the value 0. Thus, there were no significant

Table 6. *Multiple Mediation Summary for CASQ – R Scores (IV), Y – LOT Negative and Positive Scores (Mediators) and Depression Scores (DV)*

Path	β	<i>B</i>	<i>SE</i>	<i>p</i>	CIs for Indirect Effect	
					Lower	Upper
CASQ R – YLOT Negative (<i>a</i> ₁ path)	-.50	-2.91	.17	.006*		
CASQ R – YLOT Positive (<i>a</i> ₂ path)	-.02	-.10	.16	.923		
YLOT Negative – Depression (<i>b</i> ₁ path)	0	0	.59	.997		
YLOT Positive – Depression (<i>b</i> ₂ path)	-1.22	-1.95	.63	.060		
Total Effect CASQ R – Depression (<i>c</i> path)	.76	1.31	.58	.198		
Direct Effect CASQ R – Depression (<i>c'</i> path)	.74	1.17	.64	.249		
Indirect Effects (<i>ab</i> path) Y – LOT Negative					-.763	.555
Indirect Effects (<i>ab</i> path) Y – LOT Positive					-.287	.613

$R^2 = .151$, *p* ns.

* Indicates significance at $p < .01$.

indirect effects for CASQ – R scores on Depression scores found through the proposed mediators Overall, the model summary with two mediators emerged as non-significant, accounting for approximately 15% of the variance in Depressive score outcomes $F(3, 39) = 2.31$, *p* ns.

Discussion

The purpose of the current study was threefold. First, the study was conducted to examine how negative mental health prevalence rates differ between youth in the general population when compared to youth in foster care, who have likely been exposed to various maltreatment experiences. A second aim of the study was to examine the relation between explanations, expectations, and behavioral outcomes in youth with a history of maltreatment. Finally, the third purpose of the study was to examine whether expectations mediate the relation between explanations for life events and behavioral outcomes, both adaptive and maladaptive. These relations, posited theoretically by the RLHT, have yet to be tested empirically for broader internalizing difficulties, externalizing difficulties, adaptive skills; until now, this model has not been tested in populations of children exposed to maltreatment, who are at-risk for negative mental health outcomes.

Support was found for the first study hypothesis, which predicted that youth in foster care would evidence higher rates of negative mental health outcomes (both internalizing and externalizing) than children in the general population. Results indicated that youth in foster care were substantially more likely to experience negative mental health difficulties when compared to children in the general population. Moreover, the results suggested that youth in foster care have higher levels of both internalizing (e.g., anxiety and depression) and externalizing (e.g., hyperactivity, inattention, and conduct problem) symptoms. Odds ratios were

particularly high for conduct problems and depressive symptoms within the current sample, followed by ADHD – related difficulties and anxiety.

Findings from hypothesis one are consistent with the extant literature, which has demonstrated consistent links between maltreatment and various negative mental health outcomes in children. Such negative outcomes include both internalizing and externalizing disorders (English, Graham, Litrownik, Everson, & Bangdiwala, 2005; Kaplow, Dodge, Amaya-Jackson & Saxe, 2005). Although higher odds ratios were found for externalizing than internalizing difficulties, this disparity may be due to the fact that the current study relied on parent-reports of child symptomatology. Previous findings suggest that children and parents differ to a larger degree in reporting internalizing behavior when compared to behaviors more readily observed (e.g., externalizing difficulties) (Rey, Schrader, & Morris-Yates, 1992). Because children possess a unique perspective into their internal mental health states, the current figures for internalizing behaviors may represent an underestimate of internalizing difficulties within the current sample.

Findings from hypothesis one also highlight the need for addressing mental health difficulties for youth in foster care who have a history of exposure to maltreatment. Because early maltreatment experiences are linked to substantial negative mental health conditions, higher criminal involvement, and higher probability of engagement in health compromising behaviors in adulthood, the value of early intervention cannot be overstated (Collishaw et al., 2007). It is also important

that factors shown to promote buffering effects against long-term negative mental health outcomes be integrated into extant interventions (Lucia & Breslau, 2006).

Although hypothesis two was only partially supported, a number of interesting findings emerged that both support and challenge the findings from the extant literature and theory. First, youth explanations for life events were not significantly related to internalizing, externalizing, or adaptive behaviors. Previous research, such as a literature review conducted by Joiner and Wagner (1995), found a moderate effect size for the relation between explanations for life events and internalizing disorders such as depression. Their review, which included 27 peer-reviewed journal articles published between 1978 and 1993, provided support for a relation between explanations for life events and depression. In the current study, however, no significant relations were found between explanations for life events and internalizing behaviors (e.g., anxiety or depression).

One possible reason for the discrepancy between results from the current study and previous research has to do with difficulties in downward extensions of adult literature; most previous research examining the relation between explanatory style and behavioral outcomes has been conducted on adult samples. Given the vast biological, neurological, and cognitive differences between children and adults, it may be simply that explanations influence behavioral outcomes in a qualitatively different way within children when compared to adults. Another reason for the observed difference involves construct clarity. The review by Joiner and Wagner (1995) noted that, across studies, researchers were generally inconsistent in their

examination of explanatory style. For instance, some researchers utilized the ASQ Full Composite scale, while others utilized only the negative explanation or positive explanation scales. Furthermore, explanatory style questionnaires have undergone numerous revisions since 1978, making aggregate comparisons and determination of accurate effect sizes problematic. The current study utilized only the Full Composite scale; it is possible that effects specific to negative or positive explanations may have been overlooked, especially in terms of mediation analyses.

No significant relations were found between explanations for life events and externalizing behaviors. Although numerous researchers have demonstrated relations between social-cognitive processes and externalizing difficulties such as anger and aggression (Barth & Bastiani, 1997; Crick & Dodge, 1994), it appears that the cognitive processes observed in the current study (e.g., explanations and expectations) were unrelated to externalizing problems. Because little evidence exists for the relation between explanatory style and externalizing outcomes (with the exception of the aforementioned studies), examination of these constructs remain exploratory in nature. Problems similar to the explanatory style - internalizing outcome inquiry, however, exist when examining relations between explanatory style and externalizing problems. Namely, positive and negative explanatory styles may be differentially related to externalizing difficulties. Furthermore, these different explanatory styles may be specifically related to various externalizing outcomes (e.g., conduct problems, hyperactivity, aggression, school problems).

To date, there are no studies that have examined the relation between explanatory style and adaptive skills for children exposed to maltreatment. In the current sample, explanatory style was unrelated to adaptive skills. Examination of the ways in which cognitive processes are related to adaptive skills for maltreated youth are important both scientifically and clinically. Studying these links help to add to the empirical knowledge base an understanding of the kinds of cognitive impressions maltreated children form around their experiences. Clinically, research on adaptive skills may help to incorporate children's strengths into extant interventions to provide maximal therapeutic gains within populations of children at risk for negative mental health outcomes.

A significant relation was found between explanations for events and negative expectations; this relation supports previous findings regarding the existence of a moderate relation between the two constructs (Gillham, Shatte, Reivich, & Seligman, 2001). Positive and negative expectations for life events were significantly and negatively related. Interestingly, only positive expectation scores were related to BASC – II depression scores. This finding indicates that positive expectations, rather than negative expectations, may be the more important element in predicting depression in maltreated children. This finding is important when viewed in light of Abramson and colleagues' (1978) theory on the relation between explanations and expectations for life events. They posited that explanatory style predicts expectations for life events, while expectations predict behavioral functioning. Results from the current study both support and contradict this prediction, at least for the study sample

of maltreated youth. Specifically, negative explanations and negative expectations were related, but it was only the positive expectations that predicted depressive symptoms.

When viewing these findings in light of their possible clinical application, the relation between cognitive processes underlying life events and behavioral outcomes may not be as simple as previous paradigms suggest. Results from the current study, however, indicated a negative relation between depressive symptoms and positive expectations for life events. Thus, exercises that encourage more positive expectations for life events (rather than those targeting maladaptive attributions) may be important to incorporate into psychoeducational elements of therapeutic interventions with children at – risk for negative mental health outcomes. Furthermore, a negative relation was found between positive and negative expectations for life events. Thus, decreasing negative expectations for life events will likely influence more positive expectations, which may in turn decrease depressive symptomatology. Such an approach is consistent with recently developing trends toward incorporation of strength-based interventions in positive psychology (Roberts, Brown, Johnson, & Reinke, 2002).

Given the likely complexity between the study variables, the current study sought to test a model of the likely relations between explanations for life events, expectations, and behavioral outcomes. Using a multiple mediator approach, support was not found for the notion that both positive and negative expectations mediate the relation between explanations for events and behavioral outcomes. In fact, no

evidence was found for mediating effects of positive and negative expectations for externalizing, internalizing, or adaptive skills. These findings did not support the RLHT, which proposed that explanations influence expectations for life events, and that these expectations influence behavioral outcomes.

One of the most important contributions of the current study to the field of child maltreatment is that extant models, such as the RLHT, may not be readily applicable to children with a history of maltreatment. Thus, there exists a need to generate models that more accurately reflect the pathways from maltreatment to outcomes amongst children at risk for negative mental health conditions. The results from the mediation analyses in hypothesis three indicated that the cognitive processes examined had little effect on behavioral outcomes. It may be the case for youth in foster care that variables more closely related to functioning within the immediate environment (e.g., separation from family, disruptions in living situations; Plant & Siegel, 2008) may be more substantial in predicting immediate behavioral outcomes than explanatory styles, which become more stable over time and internalized (Burns & Seligman, 1989).

Although hypothesis three was not supported, the way in which the hypothesis was tested presents a methodological improvement over previous studies examining explanatory style. Specifically, the current study utilized recent multiple mediation techniques that allow for comparison of direct, indirect, and total effects of the proposed mediators on the relation between the predictor and outcome variable. This method of analysis is being used with increasing frequency in studies involving

mediation, and has demonstrated numerous advantages over causal step mediation analyses (Preacher & Hays, 2008). Most importantly, the use of such analytic procedures within the current study allowed for simultaneous comparison of multiple variables, which more closely mirrors the reality of youth in foster care, where numerous variables operate in tandem.

Limitations

Although the present study provided some important first steps in understanding the nature of the cognitive role in outcome behavior, it is not without limitations. One such problem was that the CASQ-R did not provide strong reliability as expected in the current sample. Low reliability may have obscured actual significant relations not evident in the current findings. The nonsignificant relation between the CASQ – R and mental health outcomes may have also been a product of utilizing the CASQ – R short form. Due to the significant number of measures administered, however, the CASQ – R short form was preferable to the longer version.

Another limitation of the current study is the challenge in comparing prevalence estimates from the obtained sample with general population estimates. Within the obtained sample, the BASC – II was used to determine whether youth met a prescribed cutoff score for clinically significant behavioral difficulties. Within the general population, there is likely to exist a wider variation in the criteria utilized to determine diagnosis, mental health difficulties, and functional impairment within the youth surveyed. Furthermore, the current study utilized a cutoff score for depressive

symptomatology rather than diagnostic criteria. Because of widely discrepant rates in published prevalence data for both externalizing and internalizing behavioral difficulties, the current study did make an attempt to reconcile these disparities by reporting liberal estimates for mental health prevalence rates.

Directions for Future Research

The current study represented an important first step in building current knowledge regarding cognitive processes and their relation to behavioral outcomes within maltreated children. Because of the vulnerability of this specific population, it is essential that future studies examine the mental health state of these youth, rather than rely on downward extensions of adult research or over-application of models devised from studies of children at relatively normative levels of functioning. As noted previously, future researchers should continue to observe different levels of explanatory style (i.e. *positive* explanations for both *positive* and *negative* events, *negative* explanations for both *positive* and *negative* events) as well as the respective contributions of internality, stability, and globality in predicting behavioral outcomes. As proposed by Abramson et al. (1989), specific explanatory style dimensions may more strongly predict depressive behaviors than others.

A second area for further research involves the incorporation of other cognitive variables that may be salient in predicting behavioral outcomes. For instance, Bolger and Patterson (2001) found that perception of control mediated the relation between maltreatment history and internalizing difficulties for children exposed to maltreatment. One area for further inquiry would be to investigate the

possibility of interactions between various cognitive processes (e.g., perception of control and explanatory style) in influencing the maltreatment – outcome relation.

A final suggestion for future research involves the continued use of new statistical techniques to generate and test broader models of childhood trauma. Such models could include cognitive processes (explanatory style, locus of control), family factors (family environment), and community resources (resources, mental health service availability), allowing tests of multiple factors affecting youth exposed to maltreatment who live in foster care. It is hoped that the current study served the purpose of promoting greater awareness of the risks faced by youth exposed to maltreatment, with the goal that policymakers as well as researchers will allocate additional resources to provision of mental health services as well as research within children at-risk for negative mental health outcomes.

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Appendices

Appendix 1. Parent Demographic Questionnaire

Appendix 2. Children's Attribution Style Questionnaire – Revised

Appendix 3. Youth Life Orientation Test

Appendix 1 – Parent Demographic Questionnaire

DEMOGRAPHIC QUESTIONNAIRE

Child's Date of Birth: _____ Child's Age: _____ Grade in School: _____ Child's Race: _____

Child's Gender: Male Female What is your relationship to the child? _____

What adults now live in the child's home?

Your marital status (circle one): married divorced/separated widowed remarried never married

Highest level of education completed by child's mother: _____ father: _____

How many brothers and sisters does your child have? _____

Please list the following information for each sibling:

<u>First Name</u>	<u>Age</u>	<u>Gender</u>	<u>Natural or Step</u>	<u>Living in the home (Y or N)</u>
-------------------	------------	---------------	------------------------	------------------------------------

How many schools has your child attended? _____

Schools Attended: **Reason for move:**

What special activities does your child participate in? (i.e. sports, scouts, music lessons, etc.)

Activities involved in:

Does your child have any major health problems? Yes No (If so, what are they?)

Any significant injuries or surgeries? _____

How often has your child seen the doctor in the last year? _____ The school nurse last year? _____

Do you or your spouse have any chronic medical problems? If so, what are they?

Have you, your child, or any one else in your family been treated for emotional or psychological problems? Yes No

Person's relationship to child Type of problem Treat. Type (therapy, hospital, etc.) Dates

All children experience stress. What stresses has your child experienced in the last year? How old was he/she at the time?

Incident:

Age of Child:

Taking into account all sources of income (wages, interest, government assistance, child support, etc.), please estimate the total family income on a yearly basis before taxes.

\$ _____

Who is the primary wage earner in the family? (Check one)

____ father ____ mother ____ both equally

Answer the following for the primary wage earner (use father if both are primary).

Kind of work (e.g., electrical engineer, stock clerk, farmer)

Most important activities (e.g., filing, supervision, kept books, taught)

Kind of business (e.g., shoe store, farm, auto dealership)

Appendix 2 – Children’s Attribution Style Questionnaire - Revised

CHILDREN’S ATTRIBUTIONAL STYLE QUESTIONNAIRE-REVISED
INSTRUCTIONS

Here are some situations. I want you to try really hard to imagine that these situations just happened to you. After each situation is presented, two possible reasons for why the situation might have happened are given. I want you to choose the most likely reason to explain why the situation happened to you.

Sometimes both of the reasons may sound true, and sometimes both may sound false, and, you may never have been in some of these situations. But even so, I want you to pick the reason that seems to explain why the situation happened to you.

There are no right answers and no wrong answers, so always pick the reason that seems the most likely to you.

Circle either “a” or “b” for each question. I can read along with you, if that helps.

Do you have any questions before we begin?

Children's Attributional Styles Questionnaire-Revised

1. You get an "A" on a test.
 - a. I am smart
 - b. I am good in the subject that the test was in
2. Some kids that you know say that they do not like you.
 - a. Once in a while people are mean to me.
 - b. Once in a while I am mean to other people.
3. A good friend tells you that he or she hates you.
 - a. My friend was in a bad mood that day.
 - b. I wasn't nice to my friend that day.
4. A person steals money from you.
 - a. That person is not honest.
 - b. Many people are not honest.
5. Your parents tell you something that you make is very good.
 - a. I am good at making some things.
 - b. My parents like some things I make.
6. You break a glass.
 - a. I am not careful enough.
 - b. Sometimes I am not careful enough.
7. You do a project with a group of kids and it turns out badly.
 - a. I don't work well with people in that particular group.
 - b. I never work well with groups.
8. You make a new friend.
 - a. I am a nice person.
 - b. The people that I meet are nice.
9. You have been getting along well with your family.
 - a. I am usually easy to get along with when I am with my family.
 - b. Once in awhile I am easy to get along with when I am with my family.
10. You get a bad grade in school.
 - a. I am not a good student
 - b. Teachers give hard tests.
11. You walk into a door and you get a bloody nose.
 - a. I wasn't looking where I was going.
 - b. I have been careless lately.

12. You have a messy room.
 - a. I did not clean my room that day.
 - b. I usually do not clean my room.
13. Your mother makes you your favorite dinner.
 - a. There are a few things that my mother will do to please me.
 - b. My mother usually likes to please me.
14. A team that you are on loses a game.
 - a. The team members don't help each other when they play together.
 - b. That day the team members didn't help each other.
15. You do not get your chores done at home.
 - a. I was lazy that day.
 - b. Many days I am lazy.
16. You go to an amusement park and you have a good time.
 - a. I usually enjoy myself at amusement parks.
 - b. I usually enjoy myself in many activities.
17. You go to a friend's party and you have fun.
 - a. Your friend usually gives good parties.
 - b. Your friend gave a good party that day.
18. You have a substitute teacher and she likes you.
 - a. I was well behaved during class that day.
 - b. I am almost always well behaved during class.
19. You make your friends happy.
 - a. I am usually a fun person to be with.
 - b. Sometimes I am a fun person to be with.
20. You put a hard puzzle together.
 - a. I am good at putting puzzles together
 - b. I am good at many things.
21. You try out for a sports team and do not make it.
 - a. I am not good at sports.
 - b. The other kids who tried out were very good at sports.
22. You fail a test.
 - a. All tests are hard.
 - b. Only some tests are hard.
23. You hit a home run in a ball game.
 - a. I swung the bat just right.
 - b. The pitcher threw an easy pitch

24. You do the best in your class on a paper.
 - a. The other kids in my class did not work hard on their papers.
 - b. I worked hard on the paper.

Appendix 3 – Youth Life Orientation Test

Instructions

Y-LOT Children: Revised Oct.1.97

Please answer the following questions about yourself by putting how true or not true each statement is for you. Please **COLOR IN** the oval that seems to describe you the best. There are no right or wrong answers. Just describe yourself as best as you can.

1.	It's easy for me to have fun.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		3	2	1	0
		true for me	sort of true for me	sort of not true for me	not true for me
2.	I like to be active.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		3	2	1	0
		true for me	sort of true for me	sort of not true for me	not true for me
3.	I'm always hopeful about my future.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		3	2	1	0
		true for me	sort of true for me	sort of not true for me	not true for me
4.	Things usually go wrong for me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		3	2	1	0
		true for me	sort of true for me	sort of not true for me	not true for me
5.	When I am not sure what will happen next, I usually expect it to be something good.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		3	2	1	0
		true for me	sort of true for me	sort of not true for me	not true for me
6.	Usually, I don't expect things to go my way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		3	2	1	0
		true for me	sort of true for me	sort of not true for me	not true for me

7. Usually, I don't expect good things to happen to me.
- | | | | |
|-------------|------------------------|----------------------------|-----------------|
| 3
○ | 2
○ | 1
○ | 0
○ |
| true for me | sort of true
for me | sort of not true
for me | not true for me |
8. I am a lucky person.
- | | | | |
|-------------|------------------------|----------------------------|-----------------|
| 3
○ | 2
○ | 1
○ | 0
○ |
| true for me | sort of true
for me | sort of not true
for me | not true for me |
9. If something nice happens, chances are it won't be to me.
- | | | | |
|-------------|------------------------|----------------------------|-----------------|
| 3
○ | 2
○ | 1
○ | 0
○ |
| true for me | sort of true
for me | sort of not true
for me | not true for me |
10. Each day I look forward to having a lot of fun.
- | | | | |
|-------------|------------------------|----------------------------|-----------------|
| 3
○ | 2
○ | 1
○ | 0
○ |
| true for me | sort of true
for me | sort of not true
for me | not true for me |
11. When things are good, I expect something to go wrong.
- | | | | |
|-------------|------------------------|----------------------------|-----------------|
| 3
○ | 2
○ | 1
○ | 0
○ |
| true for me | sort of true
for me | sort of not true
for me | not true for me |
12. I usually expect to have a good day.
- | | | | |
|-------------|------------------------|----------------------------|-----------------|
| 3
○ | 2
○ | 1
○ | 0
○ |
| true for me | sort of true
for me | sort of not true
for me | not true for me |
13. No matter what I try, I do not believe anything is going to work.
- | | | | |
|-------------|------------------------|----------------------------|-----------------|
| 3
○ | 2
○ | 1
○ | 0
○ |
| true for me | sort of true
for me | sort of not true
for me | not true for me |
14. Overall, I expect more good things to happen to me than bad things.
- | | | | |
|-------------|------------------------|----------------------------|-----------------|
| 3
○ | 2
○ | 1
○ | 0
○ |
| true for me | sort of true
for me | sort of not true
for me | not true for me |

15. Each day I expect bad things to happen.

 3

true for me

 2

sort of true
for me

 1

sort of not true
for me

 0

not true for me

16. When things are bad, I expect them to get better.

 3

true for me

 2

sort of true
for me

 1

sort of not true
for me

 0

not true for me

17. Even when people around me are sick, I expect to be healthy.

 3

true for me

 2

sort of true
for me

 1

sort of not true
for me

 0

not true for me

18. If some illness is going around, I am sure to get it.

 3

true for me

 2

sort of true
for me

 1

sort of not true
for me

 0

not true for me

19. When I do not feel well, I expect that I will feel better soon.

 3

true for me

 2

sort of true
for me

 1

sort of not true
for me

 0

not true for me