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Understanding Children's Emotional Processes and Behavioral Strategies in the Context of Marital Conflict

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Abstract

Marital conflict is a distressing context in which children must regulate their emotion and behavior, however, the associations between the multidimensionality of conflict and children's regulatory processes needs to be examined. The current study examined differences in children's ($n = 207$; $M = 8.02$ years) emotions (mad, sad, scared, and happy) and behavioral strategies to regulate conflict exposure during resolved, unresolved, escalating, and child-rearing marital conflict vignettes. Children's cortisol levels were assessed in relation to child-rearing and resolved conflict vignettes. Anger and sadness were associated with escalating and child-rearing conflicts; fearfulness was related to escalating and unresolved conflicts. Children's happiness was associated with resolution. Anger was associated with children's strategies to stop conflict; whereas, sadness was associated with monitoring and avoidant strategies. Cortisol recovery moderated the link between fearfulness and behavioral regulation. These results highlight the importance of children's emotions and regulatory processes in understanding the impact of marital conflict.

Keywords

Interparental Conflict; Emotion; Behavioral Regulation; Cortisol

The development of emotion regulation skills is an important developmental task for children (Thompson, 1994). The ability to successfully regulate emotional experiences has

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been linked to children's social competence and psychopathology (Zeman, Cassano, Perry-Parrish, & Stegall, 2006). Emotion regulation is a multifaceted system of component processes including emotional, behavioral, and biological components (Cicchetti, Ganiban, & Barnett, 1991; Thompson, 2008). As Thompson has highlighted, there is much need for understanding the interactive nature of the multiple regulatory processes involved in emotion regulation, including emotional, physiological, and behavioral components, as well as the context in which they occur. Moving beyond examining children's general emotional tendencies, the current study examined the role of children's emotional responses, physiological arousal, and behavioral regulation strategies in the context of interparental conflict.

Destructive interparental conflict provides a distressing context for children, eliciting the experience of negative emotion and subsequent regulation of children's exposure to the conflict. While marital conflict proves to be distressing for children, it is a normative, recurrent stressor occurring on a regular basis in families, providing a specific context in which children are repeatedly engaged in regulating their emotional experiences. Moreover, the impact of marital conflict on children's adjustment is partly related through associations with children's emotional experience and regulatory abilities in response to conflict.

Interparental conflict is a multidimensional construct (Cummings & Davies, 2010); couples' disagreements may take different forms and have different meanings for children based on the specific aspects of how couples manage their conflict. Destructive conflict, characterized by hostility, anger, and aggression, undermines children's sense of security leaving children threatened and worried about the stability of the family. On the other hand, constructive conflict, characterized by the use of affection, problem-solving strategies, and compromise during conflict, may leave children with a sense of security about the family. An extensive body of research supports that marital conflict can affect children differently depending on whether the conflict is handled using destructive or constructive behaviors (Goeke-Morey, Cummings, Harold, & Shelton, 2003), the degree of conflict resolution that occurs (Cummings, Ballard, El-Sheikh, Lake, 1991), the perception of parent emotion during the conflict (De Arth-Pendley & Cummings, 2002), and the topic of the dispute (Cummings, Goeke-Morey, & Papp, 2004). Marital disagreements explicitly about children or child-rearing can be especially threatening or distressing for children (O'Leary & Vidair, 2005); child-related conflict has been linked to children's use of more intervening strategies during conflict (Shelton, Harold, Goeke-Morey, & Cummings, 2006). Destructive conflict has been linked with children's experience of negative emotionality whereas constructive conflict has been linked to children's neutral or positive emotionality (Cummings, Goeke-Morey, & Papp, 2003). Davies and Woitach (2008) highlighted the importance of distinguishing the effects of different forms of destructive conflict on children's regulatory processes. However, little is known about the specific role of different contexts of destructive conflict on understanding the inter-relatedness of children's emotional, physiological, and behavioral responses used to regulate their exposure to marital conflict. This study examines children's emotional responses to distinct forms of marital conflict, children's physiological responses to conflict, and associations with the behavioral strategies children use to regulate their exposure to marital conflict.

Emotional Security Theory (EST; Davies & Cummings, 1994) posits that children need to feel safe and secure in the family; destructive marital conflict directly threatens this goal and undermines their sense of security. When conflict threatens children's security they are motivated to reestablish their goal of security. EST suggests that children's insecurity about the marital relationship is manifested through multiple regulatory processes, including children's emotional reactivity, behavioral regulation of exposure to the conflict, and internal representations of the family system. EST further states that children's manifested

responses to conflict are reflective of a higher order organization of response processes (Cummings & Davies, 2010). Research indicates that children's emotional reactivity to conflict may include a variety of distressed responses including anger, sadness, and fearfulness. Furthermore, children may respond to conflict with a variety of behavioral strategies to regulate their exposure to conflict; specific emotional responses mobilize children to react in ways to avoid or involve themselves in the conflict (Cummings & Davies, 2010; Davies & Sturge-Apple, 2007). To alleviate the threat of conflict and restore security, children may involve themselves in the marital dispute as an attempt to end the disagreement. Children may attempt to resolve the source of conflict as one strategy to end the conflict. For example, when parents are arguing about completing household chores, children may take responsibility for these tasks in effort to end the argument. Alternatively, children may attempt to avoid or reduce their exposure to the conflict to reestablish their security. For example, children may walk away or remove themselves from the conflict. These different emotional and behavioral strategies can be adaptive for children in the short-term, resulting in a restored sense of security in the family. However, children's exposure to conflict and emotional insecurity about the family are maladaptive for children's adjustment over time (Cummings, Schermerhorn, Davies, Goeke-Morey, & Cummings, 2006; Davies, Harold, Goeke-Morey, & Cummings, 2002).

Although research supports the role of emotional security, as indexed by children's emotional reactivity and behavioral regulation, in relation to destructive marital conflict and children's subsequent adjustment, few studies have examined the relationship between these regulatory processes. More specifically, little is known as to whether children's emotional and behavioral responses vary by the context of conflict and how these processes may affect one another. Additionally, previous research has frequently examined the role of children's emotional distress indexed by general negative emotional responses (Cummings et al., 2003; Goeke-Morey et al., 2003); however, little research has examined differences in children's specific emotional responses to varying contexts of conflict. To advance the understanding of the role of children's specific emotional reactions, the current study investigated children's feelings of anger, sadness, fear, and happiness across differing contexts of destructive conflict.

Adopting a functionalist perspective on emotion (Campos, Campos, & Barrett, 1989), EST posits that the form of emotional reactivity may be important for understanding the role of conflict on child adjustment (Cummings, Goeke-Morey, Papp, 2002; Davies, Sturge-Apple, Cicchetti, Manning, & Zale, 2009). EST further suggests that children's emotional responses serve as motivators of subsequent behavioral tendencies. Children's initial emotional responses to conflict are indicators of threat to their security thus motivating them to regulate their exposure. Few studies have examined the associations between specific emotional responses to marital conflict and the behavioral responses children use to cope with the insecurity; however, EST supports the notion that feelings of anger, fear, and sadness may mobilize children's behavioral strategies to intervene or avoid conflict to cope. In order to advance our understanding of associations between these regulatory processes, this study examined relations between the intensity of children's initial emotional responses, to an especially salient, child-related marital conflict, and their choice of a behavioral strategy to regulate their exposure to conflict.

Recent research on children's emotional reactivity, particularly in the context of exposure to marital conflict, highlights the importance of examining children's physiological reactivity as an important mechanism for understanding the impact of marital conflict on children's adjustment. Exposure to marital conflict has been linked to children's regulation of the limbic-hypothalamic-pituitary-adrenal (LHPA) axis (Davies, Sturge-Apple, Cicchetti, & Cummings, 2007, 2008; Saltzman, Holden, & Holghan, 2005). Cortisol is a hormone

released as a part of the LHPA axis in response to threatening events. Children's LHPA resources may be activated during distressing situations to help gather the necessary resources to cope. Thus, as marital conflict is considered a particularly salient, distressing context, it is likely that children's adrenocortical functioning may impact the relationship between emotional and behavioral responses to exposure to conflict. That is, multiple levels of arousal may interact in complex ways to determine how children respond to distressing events especially when conflict is salient and meaningful for children.

Davies and colleagues (2009) found that children's specific emotions mediated the link between interparental conflict and physiological functioning. Anger was associated with children's adrenocortical and parasympathetic nervous system functioning whereas fearful responses were associated with children's sympathetic nervous system in toddlers. These findings highlight both the importance of utilizing multiple assessments of children's regulatory strategies and the unique role of emotional patterns of responses to marital conflict. The present study uniquely examines the moderational role of children's adrenocortical responses in the link between children's emotional responses and their use of behavioral strategies to regulate their exposure to marital conflict.

Individuals vary in their physiological reactivity to stress, making some children more susceptible to distressing family environments (Boyce & Ellis, 2005). These individual differences provide a useful context for understanding how physiological reactivity may serve as a moderator in the links between the environmental context and subsequent functioning. Thus, how children respond to a situation perceived as emotionally arousing may vary by their biological reactivity to stress. Adopting an individual differences perspective to physiological reactivity to stress, children's adrenocortical functioning may serve to moderate these processes such that suppression or activation of the LHPA axis may alter the links between specific emotions and behavioral tendencies in the context of conflict. Despite children's emotional experiences to witnessing marital conflict, their behavioral regulation and strategy choices may be moderated by their physiological arousal. For example, activation of their LHPA axis may further motivate children to regulate exposure in specific ways. More reactive children may behave in ways to protect and restore security, despite similar contexts. In the context of destructive marital conflict, differences in adrenocortical functioning may be an important motivator for subsequent behavioral strategies. Moreover, despite similar levels of emotional arousal more physiologically reactive children may mobilize vigilant and avoidant strategies to further protect and restore their emotional security compared the less reactive children. Increased cortisol levels in combinations with feelings of threat or fearfulness may heighten children's vigilance of the distressing events resulting in less active forms of behavioral regulation strategies (e.g., avoidance, monitoring, freezing, etc.) due to the cost of more active strategies (e.g., involvement). Consistent with this perspective, in examining the link between children's fearfulness, behavioral dysregulation, and adrenocortical functioning, Buss, Davidson, Kalin, and Goldsmith (2004) found that freezing behaviors, as indicative of fearfulness, were related to higher cortisol levels.

Recently, Cole, Martin, and Dennis (2004) outlined four methodological directions for the future study of emotion and emotion regulation. These directions included the independent measurement of emotion and regulation strategies, examination of the temporal relationship between emotion and regulation, study of emotion in differing contexts, and the use of multiple measures of emotion and regulation. Applying the methodological directions outlined in Cole et al. (2004), the current study addresses these methodological issues toward understanding children's emotion and behavior regulation strategies in the salient, recurring context of children's exposure to interparental conflict. First, examining children's emotions in differing contexts, the current study sought to investigate differences in

children's perceptions of adult emotion during conflict and children's reported emotion and intensity of emotion across and within varying contexts of marital conflict. The goal was to identify the role of children's perceptions of specific emotions during constructively handled marital conflict and different destructive forms of conflict, to understand one aspect contributing to the potential differential associations with children's specific emotional responses. Given the multidimensional nature of conflict, it is likely that children's emotional responses and intensity of emotional responses to marital conflict vary by the type of conflict, specifically among different forms of destructive marital conflict. Second, the current study sought to examine the role of children's initial emotional responses in relation to children's subsequent behavioral regulation strategies. Third, utilizing a multilevel understanding of children's emotional responses, the current study incorporated children's experience of emotion and physiological arousal in predicting behavioral regulation strategies in the context of a child-related marital conflict. The intensities of children's specific emotional responses, moderated by children's adrenocortical reactivity, were examined as predictors of children's selection of behavioral strategies to regulate their exposure to marital conflict. It was hypothesized that differences in children's fearful, angry, and sad feelings would be predictive of differences in involvement and avoidant strategies. Finally, it was expected that children's cortisol levels would moderate these relationships such that physiological arousal and recovery may serve to alter these patterns of emotional-behavioral tendencies. For example, consistent with the model that we have hypothesized for these relations, higher levels of cortisol and fearfulness might be expected to result in vigilant monitoring or avoidant behaviors rather than involvement strategies in an effort to further protect children's sense of security against the threat of conflict.

Method

Participants

Participants were 207 families including, mother, father, and their second grade child (M age = 8.02 years, SD = .49; 54.6% girls) taking part in a larger multisite longitudinal study examining the effects of marital and family functioning on child adjustment. Participants were recruited from the South Bend, IN and Rochester, NY areas through flyers sent to local schools, neighborhoods, churches, community events, and solicited in newspaper advertisements. Requirements for the study necessitated the families had lived together for a minimum of three years, had a child in kindergarten, and were proficient in English. Families were racially and ethnically representative of the communities in which they resided. Seventy-two and a half percent of children were White, 16.1% African American or Black, 3.6% Hispanic or Latino, 6.2% Biracial or multiracial, and 1.5% reported "other". The majority of couples reported being married (n = 186) and living together for an average of 12.61 years (SD = 4.75). The median family income range reported was \$40,000-\$54,999 (n = 53); the annual family income for the entire sample ranged from less than \$6,000 to more than \$125,000. The majority of parents were biological parents (95% of mothers and 86% of fathers) of the study child.

Procedure

Marital conflict vignettes—Children viewed a series of seven videotaped vignettes depicting conflict between two adults; children were instructed to imagine that these disagreements were taking place between their mother and father (Shamir, Cummings, Davies, & Goeke-Morey, 2005). Each vignette depicted a marital conflict dispute with varying degrees of intensity and resolution; all vignettes were approximately one minute in length. Children were presented a warm-up story followed by vignettes depicting unresolved, resolved, escalating, and child-related marital conflicts. Children were then shown a final resolution vignette which involved the adults resolving all previous conflicts.

As a result, children were shown three resolved conflicts including the final resolution to all conflicts, and four destructive marital conflicts in the series. The order of the vignettes was as follows: warm-up, unresolved conflict, resolved conflict, child-rearing conflict, resolved conflict, escalating conflict, and a resolution to all conflict scenes. The unresolved conflict vignette depicted a destructive marital disagreement without a resolution to the conflict; whereas the disagreement in the resolved clips ended in an amicable solution. The escalating conflict depicted a destructive marital disagreement that increased in intensity throughout the scene. The child-related conflict contained a disagreement specifically about the couples' child; children in the study were instructed to imagine that they were the child being discussed in the disagreement. Notably, all three destructive conflicts were unresolved, but the escalating and child-related conflicts also contained the additional elements described. Subsequent analyses and interview questions were administered in conjunction with four vignettes; interviews were conducted after viewing each of the vignettes depicting different aspects of destructive marital conflict, as well as children's responses to the first resolved conflict. Interview questions about children's emotions and behaviors were not collected following the warm-up story and were administered for the first resolution story only.

Children were assigned one of the two sets of conflict vignettes; the order of the conflict vignettes was identical, however the topic of each conflict scenario differed across the two sets. In general, the topics of conflict surrounded financial and leisure decisions and concerns. One set of vignettes included an unresolved conflict about yard work, a resolved conflict about a family vacation, a child-related conflict about a sleepover, and an escalating conflict about being late for dinner. The other set of vignettes included an unresolved conflict about a car repair, a resolved conflict about a new carpet, a child-relating conflict about picking up a child, and an escalating conflict about making plans for the evening. All analyses in the current study controlled for the differences in the topics of the conflict vignette stimuli shown to the children.

Salivary cortisol collection—Children provided three saliva samples collected through the passive drool technique with the aid of a straw. In accordance with typical sampling collection guidelines, children were asked to rinse out their mouth with water to reduce the influence of contaminants present in the mouth prior to the start of the task. Children chewed Trident sugarless gum to induce saliva production. Children provided a baseline assessment collected prior to viewing the conflict vignettes. The saliva sample collection was designed to assess children's cortisol levels 25 minutes after the viewing of the child-related conflict vignette, as a temporal anchor for exposure to destructive conflict. To assess the alleviation of a distressing event, saliva was also collected 25 after minutes the final resolution conflict. Research suggests that salivary cortisol peaks 20 to 40 minutes after the occurrence of the stressor (Dickerson & Kemeny, 2004). Difference scores were created to measure children's initial reaction to destructive conflict (e.g., the difference between baseline assessments and cortisol levels in response to the child-related conflict). Difference scores were also calculated between children's viewing of the child-related conflict and the conflict resolution as a measure of recovery from stress. Saliva collection occurred in the late afternoon and early evening to limit the effects of the natural diurnal pattern of cortisol production as cortisol levels peak post awakening and decline throughout the day (M sampling time 4:50 pm; $SD = 2$ hours and 15 minutes). Due to differences in time of day of collection and the diurnal rhythm of cortisol levels, time of day of assessment was included as a covariate in these analyses.

Measures

Children's perceptions of adult emotion—At the conclusion of each clip, children were asked to report what they thought the adults in the video segments felt; this provided children's appraisal of the emotional context during the marital dispute. Children were provided a pictorial scale of facial expressions of emotions to choose from including mad, sad, scared, okay, and happy. Children were also asked how much the adults felt the chosen emotion on a 5-point likert scale ranging from *very little* to *a whole lot*. Children's responses not endorsing a given adult emotion were score as a 0, resulting in a 6-point likert scale with scores ranging from 0-5 indicating the intensity of the emotion from *not at all* to *a whole lot*.

Children's emotional responses—Following the adult emotion question, children were asked a series of four questions about their own emotion in response to each conflict vignette. Children were asked if they felt mad, sad, scared, and happy during the conflict vignette using the pictorial scale and emotion words. If children responded affirmatively, they were asked how much they felt the emotion on a 5-point likert scale for each of the four emotions ranging from *very little* to *a whole lot*. This resulted in a 6-point likert scale of the intensity of emotion with scores ranging from 0-5 indicating the intensity of the emotion from *not at all* to *a whole lot*. Similar techniques have been used to examine the intensity of children's emotional responses to marital conflict (Cummings, Kouros, & Papp, 2007; Shamir et al., 2005).

Behavioral regulation strategies—Children were asked to indicate what they would have done during the child-related conflict vignette; these behavioral strategies were assessed during the child-related conflict as conflict about child-related issues has been showed to be a particularly distressing context of conflict in which children respond emotionally and behaviorally to regulate exposure to conflict. Children were provided an eight-item pictorial scale representing four categories of behavioral responses. Children were asked to choose the one behavioral strategy they would have liked to have done during the conflict. Each behavior fit into one of four qualitatively different behavioral strategies including active avoidance of the conflict, involvement to stop the conflict, attempts to help parents during the conflict, and monitoring the conflict. The active avoidance pictures depicted behaviors that indicated the child was removing himself from the conflict (e.g., walking away from the conflict, huddling and hiding from the conflict). The involvement strategy displayed behaviors with the goal of ending the conflict by placing the child in the conflict (e.g., yelling at the parents, physically separating the parents). The attempt to help or improve strategy indicated behaviors in which the child attempted to help the parents during the conflict situation (e.g., helping with household tasks, comforting one of the parents). Lastly, the monitoring strategy depicted neither active avoidance, involvement, nor attempts to help, but rather the child remained near and vigilant of the conflict (e.g., watching the parents during the disagreement, playing near the conflict). Following the picture selection children were asked to describe what the child in the picture was doing to ensure that children's conceptions of the behaviors matched the intended behavioral categories. Similar techniques have been used to examine children's behavioral responses to marital conflict (Shamir et al., 2005).

Cortisol reactivity—All samples were assayed for salivary cortisol using a highly sensitive immounassay at Salimetrics Inc. (State College, PA). The assay test process utilized 25 µl of saliva; samples were tested in duplicate form. The test had a lower test sensitivity of .007 µg/dl and an upper test sensitivity of 3.0 µg/dl. However, samples for the current study ranged from .02 to 1.71 µg/dl. The average intra-assay coefficient was 4.2% for the current sample. Due to the skewness of the cortisol variables, all analyses were conducted using the natural log transformation.

Results

Descriptive Statistics

Means, standard deviations, and correlations among study variables are displayed in Table 1. Descriptive analyses indicated that the intensity of child emotion was primarily unrelated to the intensity of other emotions within each conflict vignette, suggesting that the intensity of specific emotions may be independent or unrelated to each other. However, the intensity of the same negative emotion (e.g., mad, sad, scared feelings) was moderately correlated across different destructive conflict contexts, suggesting that children may have a tendency towards similar emotions across different types of destructive conflict. Higher levels of happiness in the constructive conflict were positively correlated with higher levels of negative emotions during the child-related conflict, suggesting that some children may have a tendency to experience more intense emotions regardless of the valence of the emotion. Cortisol difference scores were primarily unrelated to emotion intensity; lack of correlations between predictor and moderator variables is ideal in tests of moderation (Baron & Kenny, 1986). Difference scores were created between baseline and the period of viewing the child-related conflict and between the period of viewing the child-related conflict and the period of viewing the resolution. These scores were unrelated suggesting that children's initial reactivity was unrelated to subsequent recovery. Both children's initial reactivity and recovery were examined as moderators between children's emotional experiences and behavioral strategies.

Participants were drawn from a community sample. Consistent with other studies of community samples, marital functioning varied widely across families. Twenty-eight percent of couples were maritally distressed (scores below 100 on the Marital Adjustment Test – Short version; Locke & Wallace, 1959). A one-way between subjects analysis of variance (ANOVA) was conducted to examine if variables in the current study varied by marital functioning. Results revealed that there were no significant differences in adult or child emotion intensity, behavioral strategies, or cortisol levels among maritally distressed and non-distressed couples. Thus levels of marital distress were not included as a covariate in any subsequent analyses.

Children's Perception of Adult Emotion

After viewing each of the marital conflict vignettes, children were asked to identify the emotion felt by the adult couple in the clip; children chose from a set of five emotions: mad, sad, scared, okay, and happy. Table 2 displays the frequency of each emotion chosen for each of the vignettes. As expected, the majority of children perceived the couple as happy in the resolved conflict vignette ($n = 203$, 98.5%). Across the destructive clips (unresolved, child-related, and escalating) the majority of children ($n = 200$, 96.6%; $n = 194$, 93.2%; $n = 202$, 97.6%; respectively) perceived the couple as angry. A one-way repeated measure ANOVA was conducted to compare the effects of type of destructive conflict on the intensity of perceived adult anger among the unresolved, escalating, and child-related conflict conditions, including conflict tape stimuli as a covariate. Results revealed a significant difference in the intensity of perceived adult anger. Univariate comparisons revealed differences such that children perceived the couple in the escalating conflict to be more angry ($M = 4.68$, $SD = 0.87$) than in the unresolved conflict ($M = 4.22$, $SD = 1.05$; $F(1,205) = 35.30$, $p < .01$, $d = .42$) and the child-related conflict ($M = 3.86$, $SD = 1.33$; $F(1,205) = 69.80$, $p < 0.01$, $d = .61$). Children also perceived the adults in the unresolved conflict to be more angry than in the child-related conflict ($F(1,205) = 15.37$, $p < .01$, $d = .28$). Due to the low frequencies, comparisons could not be made across the conflict vignettes for the intensity of sad, scared, and happy emotions. However, descriptively, children more frequently reported adult happiness in the resolved conflict ($n = 203$; $M = 4.64$, $SD = .83$)

whereas the majority of children did not report happiness in the unresolved ($n = 0$), child-related ($n = 2$), and escalating ($n = 2$) conflicts. There were no gender differences in the intensity of perceived adult anger. There was a difference among the two tape stimuli such that children viewing the yard work unresolved conflict perceived the adults as more angry ($M = 4.44$, $SD = .81$) compared to children viewing the car repair unresolved conflict ($M = 3.99$, $SD = 1.21$; $F(1,206) = 9.90$, $p < .01$; $d = .53$).

Children's Emotional Responses to Marital Conflict

Comparisons across conflict context—Children reported how much they felt mad, sad, scared, and happy in response to each of the marital conflict vignettes. Table 3 displays the frequency of children indicating feeling some level of each emotion; however analyses were conducted using the emotion intensity variables which included the degree to which a particular emotion was felt for all children participating in the study. A one-way repeated measure ANOVA was conducted to compare the effects of type of conflict on the intensity of children's emotional responses. The independent variable, type of conflict, had four conditions: resolved, unresolved, escalating, and child-related conflict. Separate analyses were conducted to examine the four dependent variables of mad, sad, scared, and happy responses including the conflict tape stimuli as a covariate. No gender differences were found in the intensity of child reported emotion for any of the four emotional responses in any of the four conflict conditions. Results revealed a significant difference in the intensity of anger that children felt ($F(3,202) = 61.24$, $p < .01$). Univariate follow-up comparisons revealed significant differences such that children reported feeling less angry in response to the resolved conflict ($M = .03$, $SD = .29$), than in the escalating conflict ($M = 1.82$, $SD = 2.13$; $F(1,204) = 144.33$, $p < .01$, $d = 1.07$), the child-related conflict ($M = 1.77$, $SD = 2.10$; $F(1,204) = 135.98$, $p < .01$, $d = 1.02$), and the unresolved conflict ($M = .70$, $SD = 1.55$; $F(1,204) = 36.44$, $p < .01$, $d = .51$). Children also reported feeling more angry in response to the escalating conflict and the child-related conflict in comparison to the unresolved conflict ($F(1,204) = 62.48$, $p < .01$, $d = .55$; $F(1,204) = 51.88$, $p < .01$, $d = .51$, respectively).

Results revealed a significant difference in the intensity of sadness that children felt ($F(3,201) = 78.98$, $p < .01$). Univariate follow-up comparisons revealed significant differences such that children reported less sadness in response to the resolved conflict ($M = .07$, $SD = .49$), than in the escalating conflict ($M = 2.10$, $SD = 2.18$; $F(1,203) = 169.87$, $p < .01$, $d = 1.06$), the child-related conflict ($M = 1.98$, $SD = 2.01$; $F(1,203) = 163.72$, $p < .01$, $d = 1.03$), and the unresolved conflict ($M = 1.42$, $SD = 1.90$; $F(1,203) = 97.87$, $p < .01$, $d = .79$). Children also reported feeling more sadness in response to the escalating conflict and the child-related conflict than the unresolved conflict ($F(1,203) = 23.44$, $p < .01$, $d = .34$; $F(1,203) = 10.11$, $p < .01$, $d = .24$, respectively).

Results revealed a significant difference in the intensity of fearfulness the children felt ($F(3,204) = 80.57$, $p < .01$). Univariate follow-up comparisons revealed significant differences such that children reported feeling less scared in response to the resolved conflict ($M = .02$, $SD = .35$), than in the escalating conflict ($M = 1.84$, $SD = 2.11$; $F(1,206) = 147.68$, $p < .01$, $d = 1.03$), the child-related conflict ($M = 1.04$, $SD = 1.76$; $F(1,206) = 65.55$, $p < .01$, $d = .67$), and the unresolved conflict ($M = 1.91$, $SD = 2.02$; $F(1,206) = 181.66$, $p < .01$, $d = 1.20$). Children also reported feeling more scared in response to the escalating conflict and the unresolved conflict than the child-related conflict ($F(1,206) = 24.87$, $p < .01$, $d = .35$; $F(1,206) = 32.33$, $p < .01$, $d = .40$, respectively).

Results revealed a significant difference in the intensity of happiness that children felt ($F(3,202) = 622.77$, $p < .01$). Univariate follow-up comparisons revealed significant differences such that children reported feeling more happy in response to the resolved conflict ($M = 4.23$, $SD = 1.33$), than in the escalating conflict ($M = .07$, $SD = .50$; $F(1,204) =$

1655.62, $p < .01$, $d = 3.06$), the child-related conflict ($M = .14$, $SD = .77$; $F(1,204) = 1400.07$, $p < .01$, $d = 2.71$), and the unresolved conflict ($M = .06$, $SD = .39$; $F(1,204) = 1877.32$, $p < .01$, $d = 3.49$). There were no significant differences among the intensity of happiness across the three destructive conflict vignettes.

Comparisons within conflict context—A repeated-measures ANOVA was conducted to compare the effects of marital conflict on the intensity of different emotional responses including the conflict tape stimuli as a covariate. Separate analyses were conducted to examine differences in the intensity of mad, sad, scared, and happy responses for each of the four types of conflict (e.g., resolved, unresolved, escalating, child-related). Within the resolved conflict, there was a significant difference in the intensity of emotions ($F(3,618) = 1531.88$, $p < .01$). Pairwise comparisons show that children felt more happiness ($M = 4.23$, $SD = 1.33$) compared to all three negative emotions (mad: $M = .03$, $SD = .29$, $F(1,206) = 1892.10$, $p < .01$, $d = 3.50$; sad: $M = .07$, $SD = .49$, $F(1,206) = 1458.74$, $p < .01$, $d = 2.79$; scared: $M = .02$, $SD = .35$, $F(1,206) = 1933.98$, $p < .01$, $d = 3.54$); however there were no differences within the intensity of the negative emotions. There were no gender or tape stimuli differences found in emotion intensity in the resolved conflict.

Within the unresolved conflict, there was a significant difference in the intensity of emotions ($F(3,612) = 53.27$, $p < .01$). Pairwise comparisons indicate that children reported feeling less happiness ($M = .06$, $SD = .39$) compared to mad ($M = .70$, $SD = 1.55$; $F(1,204) = 32.68$, $p < .01$, $d = .45$), sad ($M = 1.42$, $SD = 1.90$; $F(1,204) = 96.98$, $p < .01$, $d = .81$), and scared ($M = 1.90$, $SD = 2.01$; $F(1,204) = 164.00$, $p < .01$, $d = 1.07$). Children also reported feeling more fearfulness compared to sadness ($F(1,204) = 6.34$, $p < .05$, $d = .18$) and anger ($F(1,204) = 47.63$, $p < .01$, $d = .49$). Additionally, children reported feeling more sadness compared to anger ($F(1,204) = 18.64$, $p < .01$, $d = .31$). There were no gender or tape stimuli differences found in emotion intensity in the unresolved conflict.

Within the child-related conflict, there was a significant difference in the intensity of emotions ($F(3,609) = 44.68$, $p < .01$). Pairwise comparisons support that children felt less happiness ($M = .14$, $SD = .78$) compared to anger ($M = 1.76$, $SD = 2.10$; $F(1,203) = 98.94$, $p < .01$, $d = .76$), sadness ($M = 2.00$, $SD = 2.01$; $F(1,203) = 135.50$, $p < .01$, $d = .86$), and fearfulness ($M = 1.06$, $SD = 1.77$; $F(1,203) = 45.69$, $p < .01$, $d = .50$). Children also reported more anger and sadness compared to fearfulness ($F(1,204) = 12.70$, $p < .01$, $d = .26$; $F(1,204) = 23.77$, $p < .01$, $d = .34$, respectively). There were no gender differences in emotion intensity in the child-related conflict. However, there were tape stimuli differences found in the child-related conflict such that children reported feeling more sadness and anger in response to the child sleepover topic ($M = 2.39$, $SD = 2.04$; $M = 2.11$, $SD = 2.14$, respectively) compared to the topic about picking a child up from school ($M = 1.56$, $SD = 1.89$, $F(1,205) = 9.30$, $p < .01$, $d = .42$; $M = 1.40$, $SD = 2.00$, $F(1,204) = 6.09$, $p < .05$, $d = .34$, respectively). In contrast, children felt more scared in response to the child-retrieval topic ($M = 1.45$, $SD = 1.97$) compared to the sleepover topic ($M = .65$, $SD = 1.43$; $F(1,206) = 11.27$, $p < .01$, $d = .47$).

Within the escalating conflict, there was a significant difference in the intensity of emotions ($F(3,612) = 51.97$, $p < .01$). Pairwise comparisons indicate that children felt less happiness ($M = .07$, $SD = .50$) compared to anger ($M = 1.81$, $SD = 2.13$; $F(1,204) = 124.70$, $p < .01$, $d = .89$), sadness ($M = 2.09$, $SD = 2.17$; $F(1,204) = 162.76$, $p < .01$, $d = 1.03$), and fearfulness ($M = 1.81$, $SD = 2.10$; $F(1,204) = 127.94$, $p < .01$, $d = .92$). However, there were no differences in emotion intensity among the three negative emotions.

Children's Behavioral Strategies to Marital Conflict

One multinomial regression analysis was used to examine differences in the dependent variable of children's choice of behavioral strategies in response to the child-related marital conflict. The child-related conflict is the focus of these analyses because the timing of presentation of this vignette was most appropriate to the assessment of cortisol reactivity. Frequencies of children's behavioral strategies by emotions reported and by the emotion intensity are displayed in Table 4. Children's intensity of emotion (mad, sad, and scared), cortisol reactivity and recovery, and the interaction of each emotion and cortisol reactivity and recovery were included as predictors of children's behavioral strategy. Gender, time of day of assessment, and the conflict tape stimuli were included as covariates. However, there were no gender or tape stimuli differences in the frequency of behavioral strategies ($\chi^2(3) = 4.11$, *ns*; $\chi^2(3) = 6.23$, *ns*, respectively). Due to insufficient variance in children's reports of happiness, this variable was removed from analyses.

Results revealed significant differences in children's behavioral strategies ($\chi^2(42) = 83.89$, $p < .01$; See Table 5). Children's reports of feeling mad ($\chi^2(3) = 10.97$, $p < .05$) and scared ($\chi^2(3) = 19.92$, $p < .01$) were predictive of different behavioral strategies. Additionally, there was a trend for the overall effect of sadness ($\chi^2(3) = 7.14$, $p < .07$). Follow-up comparisons reveal that more intense feelings of anger were predictive of involvement to stop conflict compared to monitoring conflict behaviors ($\beta = .44$, $SE = .15$, $OR = 1.55$). Higher levels of sadness were predictive of active avoidance and monitoring behaviors compared to attempts to help parents during the conflict ($\beta = .33$, $SE = .15$, $OR = 1.40$; $\beta = .41$, $SE = .18$, $OR = 1.51$, respectively). There was not a significant main effect of cortisol reactivity to the child-rearing conflict or recovery following the resolved conflict. However there was a significant interaction between children feeling scared and their cortisol recovery ($\chi^2(3) = 10.77$, $p < .05$), but not initial reactivity ($\chi^2(3) = 1.97$, *ns*). Gender and time of day of assessment did not impact these relationships; however there was a significant main effect of tape selection such that children viewing the conflict about picking up the child, compared to the sleepover conflict, were more likely to involve to stop conflict compared to avoidance ($\beta = .93$, $SE = .43$, $OR = 2.53$) or attempts to help parents ($\beta = 1.33$, $SE = .59$, $OR = 3.77$).

There was a significant interaction between children's scared feelings and their cortisol recovery in response to the resolution after viewing the child-related conflict suggesting cortisol as a moderator of the relationship between scared feelings and behavioral strategies (see Figure 2); specifically there were differences in children's likelihood to intervene to stop the conflict compared to both monitoring and avoidant strategies. Children with cortisol levels that continued to increase through witnessing the conflict resolution had a higher likelihood of monitoring and avoidant strategies compared to involvement to stop conflict, regardless of the intensity of fearfulness. For children displaying decreasing levels, indicative of recovery from initial reaction, the likelihood of freezing or inactive forms of behavioral regulation (e.g., monitoring, avoidance) decreased with more intense feelings of fear. There was not a significant interaction between attempts to help or improve conflict and other behavioral strategies, however, there was a main effect of scared feelings in these comparisons such that increased levels of fear were associated with increased likelihood to attempt to help compared to monitoring ($\beta = .79$, $SE = .26$, $OR = 2.20$) or avoidant strategies ($\beta = .52$, $SE = .16$, $OR = 1.68$).

Discussion

The current study found differences in children's specific emotions in response to different forms of marital conflict. Previous research has typically examined children's general feelings of negativity or emotional distress in response to varying types of conflict. Across the three destructive conflicts, the majority of children perceived the adults as angry while

engaging in the conflict. Despite the similarity in children's perceptions of adult emotion during conflict, children's own emotional responses varied across the three distinct types of destructive conflict. These differences highlight the importance of understanding the broader context of marital conflict for understanding children's emotional experiences to marital conflict and subsequently their regulation strategies. These findings highlight the need to better understand the role of children's perceptions of the meaning of conflict and their evaluations of threat in response to conflict in further understanding how conflict affects child adjustment.

As expected, children typically indicated more negative and distressing feelings in response to destructive conflict compared to constructive conflict depicting resolution. However, a few children reported feelings of happiness in response to viewing the destructive conflict vignettes. Positive affect in response to this type of conflict has been found to be associated with dysregulation and aggression in children (Cummings, 1987). Children reported more feelings of anger and sadness in response to the escalating and child-rearing disagreements in comparison to unresolved conflict. Contrary to previous evidence that children find child-related conflict as particularly distressing, we found that more intense scared feelings were associated with the escalating and unresolved conflicts in comparison to the child-related conflict. These findings suggest that unfamiliar, unresolved conflict may be the most threatening for children.

Consistent with some previous research, while child-related conflict is distressing for children, it may not be more threatening than other forms of destructive conflict (Davies, Myers, & Cummings, 1996). Less fearfulness found in the current study may be due to children's feelings of self-efficacy during a child-related conflict; some children may feel they have some degree of control over child-related issues. However, there were differences in children's feelings of fear between the two different conflict vignettes depicting child-related conflict, suggesting a more nuanced understanding of the child-related conflict may be warranted. The conflict vignettes in this study were designed to contain similar levels and features of destructive conflict about a child-related topic; however the nature of the two specific topics may have different implications for children's responses to conflict. More fearfulness was found in response to the topic about picking the child up from school which may have carried an additional concern for the child's own safety. The sleepover topic produced more feelings of sadness and anger which may be attributed to the child feeling a loss of participating in a fun activity. Thus, the role of child-related conflict may vary by the meaning the topic has for the child.

The intensity of specific emotional experiences to conflict was predictive of children's behavioral regulation strategies. We found that scared and angry feelings were associated with children's use of involvement intervention strategies to regulate exposure to conflict; whereas, children's sadness was associated with avoidant and monitoring strategies. These findings suggest that children's specific emotional responses may play a role in differences in children's behavioral tendencies to intervene or avoid marital conflict. If replicated, these findings suggest the need for distinctions in targeted intervention and prevention based on children's behavioral and emotional strategies for helping children cope with marital conflict. Understanding children's emotional responses to conflict in the home may help parents to identify the types of conflict most harmful and threatening to children and to recognize their use of destructive conflict patterns as a first step in developing constructive ways of handling conflict.

Children's adrenocortical functioning moderated the relationship between children's scared feelings and their behavioral strategy choice; however these results suggest the relationship between children's emotional responses, physiological arousal, and behavioral regulation is

complex. Higher levels of cortisol reactivity in response to the conflict vignettes did not moderate these relations; however subsequent recovery did moderate these relations. Taken together this may suggest an initial physiological response may be a normative response to conflict and may not impact behavioral regulation. However, failure to down-regulate physiological arousal after the conclusion of a stressor may be an important factor in children's behavioral regulation. These findings suggest that continued physiological arousal may serve to motivate children to avoid costly intervention strategies regardless of feelings of fear, resulting in more avoidance, monitoring, and freezing behaviors. For children able to adequately regulate arousal after the conclusion of a stressor, more intense feelings of fear were associated with more active forms of regulation. These findings suggest children's scared feelings, in relation to their behavioral strategies to regulate conflict exposure, may depend on their adrenocortical functioning. Finally, we found a significant interaction between children's emotional and physiological reactivity in response to marital conflict highlighting the importance of examining emotional processes from a multi-method approach. Children's physiological reactivity alone was not predictive of their behavioral regulation; this provides further support for the notion that examining the role of children's physiological functioning should be conducted in conjunction with other forms of child functioning to best understand these processes.

No gender differences were found among children's emotional responses and behavioral regulation strategies. Despite gender differences in the larger literature among emotional processes, gender differences in response to marital conflict are often inconsistent or fail to find differences in the relations between exposure to marital conflict and children's responses to conflict (Cummings & Davies, 2010). At a theoretical level, EST does not hypothesize differences between boys and girls in the impact that conflict has on children's security or the motivation to regulate their exposure to conflict. However, gender differences in behavioral responses to conflict may require more specific, nuanced behaviors beyond the categories of responses captured in the present study. For example, gender differences may emerge in the specific strategies children use to alleviate the threat of conflict. Girls may be more prone to use of emotional support, such as comforting a parent, as a means to attempt to help the situation; whereas boys may be more inclined to provide instrumental support, such as alleviating the source of conflict to help the situation. Further study of specific strategies used by children during conflict is necessary for understanding how gender may play a role in the use of regulation strategies.

A number of limitations were present in the current study; first the assessment of physiological functioning was limited to examining the general role of destructive conflict. Future research should examine the link between children's specific emotional and behavioral strategies across conflict contexts to better understand the generalizability of these findings. Second, the context for examining responses was in a laboratory experimental setting potentially limiting the generalizability of findings to other contexts. Yet, there are multiple interpretative strengths in utilizing an experimental design to examine emotion and behavioral regulation strategies across different contexts of marital conflict (Cummings, 1995). For example, an experimental design allows for the study of the multidimensionality of conflict and the examination of different aspects of children's responding toward understanding how multiple regulatory processes are interrelated. Moreover, the goal of the current study was not to suggest that specific emotional responses occur in specific contexts and necessarily lead to specific behavioral strategies, but rather was to examine the interactions between children's regulatory processes, including, emotional, behavioral, and physiological processes that children utilize to manage and cope with conflict. Third, additional forms and types of marital conflict merit investigation with regard to these issues. However, the current study provides support for the notion that

interparental conflict is a diverse, ecologically valid context for understanding the development of children's emotional processes and regulation strategies.

While the current study focused on the notion that emotions are regulated by behavioral strategies, it is important to note that in accordance with EST, emotions themselves are also regulating strategies. EST posits that emotional expressions can also serve to alleviate exposure to conflict by altering parents' focus towards children's distress in the context of conflict. Children's expression of distress, such as anger or sadness, may result in diverting parents' attention away from the conflict to attend to the child. However, the current study does provide support for understanding the link between children's initial feelings about conflict and their choice of behavioral strategies to regulate exposure. Future research should further examine the role of emotional responses as regulation strategies to advance our understanding of the complexity of emotional processes and their impact on child adjustment.

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Figure 1.
Intensity of Children's Emotional Responses to Marital Conflict Vignettes

Figure 2.

The probability of children's monitoring and avoidant strategies compared to involvement to stop conflict behaviors and associations with the intensity of scared feelings and cortisol recovery responses

Table 1

Correlations and Descriptive Statistics

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Unresolved – Mad	–																	
2. Unresolved – Sad	.08	–																
3. Unresolved – Scared	.05	-.01	–															
4. Unresolved – Happy	-.07	-.09	-.03	–														
5. Resolved – Mad	.03	.14	.10	-.02	–													
6. Resolved – Sad	.03	-.03	-.13	-.02	.19**	–												
7. Resolved – Scared	-.03	-.05	.11	.17*	-.01	-.10	–											
8. Resolved – Happy	.08	.09	.22**	.03	-.11	-.35**	-.01	–										
9. Child-Related – Mad	.34**	.11	.07	-.10	-.04	-.03	.11	.18**	–									
10. Child-Related – Sad	.06	.27**	.15*	-.11	-.12	-.11	.11	.22**	.03	–								
11. Child-Related – Scared	.07	-.03	.34**	-.05	-.07	-.07	-.04	.16*	-.06	-.06	–							
12. Child-Related – Happy	.02	-.05	.11	.30**	.31**	-.03	-.01	-.03	-.12	-.18**	-.00	–						
13. Escalating – Mad	.39**	.07	.15*	-.07	.03	-.06	.10	.14*	.50**	.05	.09	-.02	–					
14. Escalating – Sad	.18**	.52**	.10	-.12	.06	-.04	-.07	.15*	.09	.36**	.04	-.09	.08	–				
15. Escalating – Scared	.02	.17*	.36*	-.02	.10	-.03	-.03	.10	-.05	.09	.31**	-.05	.03	.10	–			
16. Escalating – Happy	-.06	-.06	-.01	.07	-.02	.30**	-.01	-.11	-.01	-.08	.06	.34**	-.12	-.08	-.10	–		
17. Cortisol – Reactivity	-.02	-.01	-.02	-.03	-.05	-.06	-.10	.00	-.11	-.09	.11	.09	-.11	.00	.11	.13	–	
18. Cortisol – Recovery	.04	.07	.04	-.01	.00	.01	-.03	-.06	-.08	-.11	.00	-.05	.00	-.01	.07	-.10	-.11	–
<i>M</i>	.70	1.42	1.91	.06	.03	.07	.02	4.23	1.77	1.98	1.04	.14	1.82	2.10	1.84	.07	-.36	-.05
<i>SD</i>	1.55	1.90	2.02	.39	.29	.49	.35	1.33	2.10	2.01	1.76	.77	2.13	2.18	2.11	.50	.35	.23

Note: Emotion variables reflect the intensity of child-report of emotion to each conflict vignette ranging from zero (*not at all*) to five (*a whole lot*). Cortisol variables reflect the change in response measuring reactivity and recovery.

*
 $p < .05$,

**
 $p < .01$.

Table 2

Frequency of Child-perceived Adult Emotion for by Marital Conflict Vignette.

	Conflict Type			
	Resolved <i>N</i>	Unresolved <i>N</i>	Child-Related <i>N</i>	Escalating <i>N</i>
Mad	0	200	194	202
Sad	1	2	3	3
Scared	0	0	2	0
Okay	2	5	6	0
Happy	203	0	2	2

Table 3

Frequency of Child Emotional Responses by Conflict Vignettes

	Conflict Type			
	Resolved <i>N</i>	Unresolved <i>N</i>	Child-Related <i>N</i>	Escalating <i>N</i>
Mad	3	39	93	95
Sad	4	83	113	107
Scared	1	108	64	101
Happy	193	6	7	5

Note: Children reported whether they experienced each emotion in response to each conflict vignette, thus children may have reported experiencing more than one emotion in response to a given conflict. Frequencies reflect a categorical depiction of the number of children responding affirmatively to the experience of each emotion (responses of 1 or greater on the likert scale), whereas emotion intensity reflects the degree to which children felt a given emotion (ranging from 0-5) for all 207 participating children.

Table 4

Child Behavioral Strategy Choice by Frequency of Emotional Responses and Emotion Intensity

	Avoidance	Monitoring	Involvement to Stop Conflict	Attempts to Help
<i>Frequencies</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>
Mad	42	6	36	9
Sad	54	20	30	8
Scared	17	6	26	15
Happy	1	1	1	4
Total	85	30	65	25
<i>Emotion Intensity</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Mad	1.74 (1.96)	.87 (1.80)	2.37 (2.27)	1.36 (2.04)
Sad	2.31 (1.98)	2.33 (1.92)	1.77 (2.05)	1.04 (1.82)
Scared	.58 (1.27)	.63 (1.50)	1.41 (1.98)	2.12 (2.22)
Happy	.06 (.54)	.13 (.73)	.03 (.25)	.69 (1.67)

Note: Children indicated each emotion experienced with the possibility of endorsing more than one emotion, thus the total number of children endorsing each behavioral strategy does not equal the sum of the emotions experienced. Frequencies reflect the number of children responding affirmatively to the experienced emotion, whereas the emotion intensity reflects the degree to which children felt a given emotion. The total reflects the total number of children, regardless of emotion, endorsing the behavioral strategy.

Table 5

Multinomial Regression Analyses for Children's Behavioral Strategies during a Child-Related Conflict

	χ^2
Mad	10.97 [*]
Sad	7.14 ^t
Scared	19.92 ^{**}
Cortisol Conflict	0.07
Cortisol Resolution	0.43
Mad X cortisol conflict	5.17
Mad X cortisol resolution	1.87
Sad X cortisol conflict	1.77
Sad X cortisol resolution	3.27
Scared X cortisol conflict	1.97
Scared X cortisol resolution	10.77 [*]
Gender	5.48
Cortisol Time of Assessment	0.38
Tape Selection	9.56 [*]

Note. The table provides the overall test for each predictor and interaction variable. Specific pairwise comparisons of behavioral responses are provided in text.

^t
 $p < .07$;

^{*}
 $p < .05$;

^{**}
 $p < .01$.