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Article *in* Developmental Psychology · October 2017

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Online First Publication, October 23, 2017. http://dx.doi.org/10.1037/dev0000418

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0012-1649/17/$12.00 http://dx.doi.org/10.1037/dev0000418

Mothers' Dispositional Distress Reactivity as a Predictor of Maternal Support Following Momentary Fluctuations in Children's Aversive Behavior

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Given that maternal support promotes healthy social and emotional development in early childhood, it is important to understand the predictors of such support, especially during emotional challenges. In this study, mothers' dispositional distress reactivity (i.e., the tendency toward experiencing distress in response to children's negative emotions and behavior) was assessed as a predictor of maternal support in a given moment when children showed within-person fluctuations in aversive behavior (i.e., negative affect and disruptive behaviors) in concurrent and prior moments. Data were collected when children were 33 months of age. Mothers ($N = 128$) reported on their distress reactivity, and maternal support and child aversive behavior were coded in 15-s intervals during a 5-min snack-delay task. As hypothesized, multilevel models revealed that mothers' dispositional distress reactivity predicted decreases in maternal support when children showed within-person increases in aversive behavior in the *prior* 15-s interval but not in the concurrent interval. Findings highlight the importance of investigating the contributions of maternal dispositional tendencies to moment-to-moment changes in parenting behavior during moderate, everyday challenges with young children.

Keywords: dispositional distress reactivity, maternal support, child aversive behavior, time-series analyses

Maternal support during emotionally challenging situations is vital for promoting children's healthy social and emotional development. Mothers' supportive behavior, such as praise, validation, and providing explanations and reasons, can help children learn how to manage and regulate their own emotions (Calkins, Smith, Gill, & Johnson, 1998; Spinrad, Stifter, Donelan-McCall, & Turner, 2004), which, in turn, contributes to children's social competence and adjustment (Denham et al., 2003; Eisenberg et al., 1999). Maternal dismissive or punitive responses, on the other hand, may undermine children's social competence and regulatory capacities (Eisenberg, Cumberland, & Spinrad, 1998; Lunkenheimer, Shields, & Cortina, 2007). Parental responses to children during emotional challenges may particularly shape children's regulatory skills in toddlerhood, when children make strides in their abilities to regulate their emotions and behaviors—albeit, typically with mixed success (Brownell & Kopp, 2010).

Given the significance of maternal support for promoting healthy social and emotional development, it is important to understand potential predictors of mothers' supportive behavior during emotional challenges. One characteristic that is likely to be central, but has received little empirical attention, is the trait-like tendency to experience distress (i.e., a self-focused, aversive emotional reaction) in response to children's negative emotions and behaviors (Fabes, Poulin, Eisenberg, & Madden-Derdich, 2002). In the current study, we refer to this construct as "maternal dispositional distress reactivity." In contrast to maternal empathy, which is a well-regulated, child-focused emotional reaction, maternal dispositional distress reactivity is characterized by poorly regulated anxiety and discomfort in response to the child's negative emotions and a desire to alleviate the parent's own distress (Fabes et al., 2002). Dispositional distress reactivity may

Editor's Note. Kristin A. Buss served as the action editor for this article. —EFD

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This study was supported by funding from the USDA National Institute of Food and Agriculture (Hatch projects ILLU-793-362 and ILLU-793-332) and the University of Illinois Research Board to Nancy L. McElwain. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the authors and do not necessarily reflect the view of the U.S. Department of Agriculture or the University of Illinois. We are grateful to the families who participated in this research. We also thank Elissa Thomann Mitchell, who played a key role in coordinating and supervising the mother–child laboratory visits, and Amber Welsh, Abbie Price, Angela Turenne, and Cayla Bollinger, who assisted with observational coding of maternal and child behavior.

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be particularly relevant to parenting, especially during emotionally challenging situations in which children may display high levels of negative emotions and behaviors. In the present study, we examined the extent to which mothers' dispositional distress reactivity contributed to mothers' supportive behavior toward their toddler-aged children during a challenging snack-delay task, particularly in moments when children displayed higher levels of aversive behavior (i.e., distress, frustration, or disruptive behavior; Calkins, 2002) than they typically do.

Dispositional Distress Reactivity and Parenting: Conceptual Linkages

In examining the extent to which mothers' dispositional distress reactivity relates to maternal supportive behavior during an emotionally challenging situation, we draw from two conceptual frameworks. First, according to Dix's (1991) model of the affective organization of parenting, parents who experience self-oriented emotions (i.e., emotions characterized by concerns that promote the *parents*' goals) during parent–child interactions may be less likely to respond supportively to the child's needs and interests. In contrast, parents who experience child-oriented emotions (i.e., emotions that are characterized by concerns that promote the *child*'s goals) may be more likely to respond supportively toward the child. For instance, a mother who becomes frustrated by her child's aversive behavior because it blocks the mother's goals may be less likely to respond supportively toward her child than a mother who becomes frustrated because the child's goals are blocked. Because maternal dispositional distress reactivity is self-focused (vs. child-focused) and aimed at relieving the mother's own distress (Fabes et al., 2002), it is likely that this response tendency will disrupt parenting in the ways outlined by Dix (1991). In accordance with this proposition, the broader construct of "personal distress," which is not child-specific and has been defined as the tendency to experience negative emotional arousal in response to another individual's distress (Davis, 1983), has been associated with adults' decreased intention to help others in distress (Batson, O'Quin, Fultz, Vanderplas, & Isen, 1983) and a desire to avoid or escape the distressing situation (see Batson, Fultz, & Schoenrade, 1987).

Second, Gottman, Katz, and Hooven's (1996, 1997) theoretical work on meta-emotions emphasizes how parental beliefs and emotions may influence how parents respond to their children's negative emotions. In semistructured interviews in which parents were asked about their beliefs, feelings, and responses in regard to their own and their children's emotions, Gottman et al. reported that parents who tended to feel uncomfortable with or experience negative feelings in response to their children's negative emotional displays were more likely to dismiss their children's emotions as unimportant or punish their child, rather than accept and validate their children's emotional state. Parents who tended to dismiss or reject their children's emotions often reported that their goal was to terminate children's negative emotional state as quickly as possible and were also likely to believe that negative emotions are harmful and should not be expressed. These types of interview responses clearly indicate that parents may experience distress in response to their children's negative emotions and, as a result, may dismiss their children's emotions and respond less supportively during emotional challenges.

Dispositional Distress Reactivity and Parenting: Empirical Support

The conceptual models outlined by Dix (1991) and Gottman et al. (1996, 1997) suggest that parents who tend to experience distress in response to their children's negative emotions and behaviors will be less supportive during emotional challenges. Yet few empirical studies have tested such associations, and, as such, we first review studies that have assessed parents' negative emotions more generally as predictors of parenting. For instance, mothers' self-reported negative emotions when watching videotapes of themselves interacting with their children have been associated with lower observer ratings of supportive parenting toward infants (Dix, Gershoff, Meunier, & Miller, 2004) and higher observer ratings of overreactive discipline toward toddlers (Lorber & O'Leary, 2005). Additionally, in a meta-analysis of 42 studies, Rueger, Katz, Risser, and Lovejoy (2011) reported that parental negative affect was positively associated with harsh parenting practices and negatively associated with supportive parenting practices. In this study, the association between parents' negative affect and supportive parenting was examined from infancy to later adolescence and was strongest for parents of preschool-aged children (Rueger et al., 2011). Taken together, these findings demonstrate links between mothers' negative emotions assessed at a general level and parenting behaviors, particularly for parents of young children.

Of the few studies to examine mothers' experience of distress specifically in response to their children's negative emotions and behaviors, the emphasis has been on predicting child functioning. Moed, Dix, Anderson, and Greene (2016) reported that mothers' negative emotions expressed *in response to* their children's negative emotions and behaviors predicted children's lower social competence and emotion regulation and higher externalizing problems longitudinally, whereas mothers' negative emotions expressed *in general* during interactions with their school-age children did not predict child adjustment. Mothers' self-reported dispositional distress reactivity has also been associated with difficult transitions to child care among infants and toddlers (Swartz, Speirs, Encinger, & McElwain, 2016), and internalizing and externalizing behavior problems among preschool and school-age children (Eisenberg et al., 1999). Mothers' tendencies to respond to their children's negative emotions and behaviors with their *own* distress are likely to be associated with children's less adaptive socioemotional outcomes because such tendencies interfere with mothers' abilities to support their children during emotional challenges.

The few studies to link mothers' dispositional distress reactivity to parenting provide support for this hypothesis. Lorber and Slep (2005) rated child negative affect in 5-s intervals while mothers and their toddler-aged children engaged in series of laboratory tasks, and global ratings of maternal discipline strategies were also conducted. Mothers were then shown a video playback of the session and asked to rate their negative emotions for each 5-s interval. Mothers engaged in higher levels of harsh and lax discipline strategies (rated via observers' global ratings across the interaction tasks) when they reported an increase in negative emotion following 5-s intervals in which their toddler displayed negative affect. Similarly, mothers' poorly regulated physiological arousal (a key characteristic of distress reactivity) during a series of distress-eliciting interaction tasks with their infants has also

been associated with less maternal sensitivity observed during the tasks (Leerkes, Su, Calkins, Supple, & O'Brien, 2016).

In the studies by Lorber and Slep (2005) and Leerkes et al. (2016), maternal distress reactivity was assessed in relation to their emotional and physiological experiences during the course of mother–child interaction tasks. Although studies of real-time emotional processes are noteworthy and important, the degree of distress experienced in response to another's negative affect is also viewed, in part, as a personality disposition or trait that is fairly stable across situations (Davis, Luce, & Kraus, 1994; Davis et al., 1999; Konrath, O'Brien, & Hsing, 2011). Dix (1991) posited that a parent's dispositional tendency to experience negative emotions would interfere with the parent's ability to respond supportively via a putative influence on his or her state of emotional arousal (and appraisal) during a given challenging situation. In support of this proposition, two studies have linked mothers' trait-like tendency to experience distress reactivity to child cues (i.e., assessed globally and not during specific interactions with their own children) and less supportive parenting. First, expectant mothers who reported experiencing higher levels of negative affect in reaction to videotapes of distressed infants had lower levels of observed maternal sensitivity to their own infant's distress at 6 months postpartum (Leerkes, 2010). Second, Fabes et al. (2002) showed that parents (predominantly mothers) of 3- to 6-year-old children who reported a greater tendency to experience distress in response to children's negative emotions across several hypothetical situations also reported using laxer discipline strategies, as well as more punitive and minimizing parenting when their children displayed negative emotions. Notably, parents' dispositional distress reactivity was only modestly correlated with trait levels of anger and uncorrelated with empathic concern (Fabes et al., 2002), suggesting that mothers' dispositional distress reactivity can be considered a distinct affective component of parenting.

Between-Person and Within-Person Variations in Parenting Behavior

Of the studies reviewed linking mothers' distress reactivity to parenting, it bears noting that parenting was assessed via global ratings or composite scores that focused on parenting behavior relative to other mothers (Fabes et al., 2002; Leerkes, 2010; Leerkes et al., 2015; Lorber & O'Leary, 2005). Although parents may show stable patterns in behavior that differ from other parents (between-person variability), they may also show variations in behavior relative to their own typical or "average" behavior across different occasions (within-person variability; Hoffman, 2015). By examining between-person differences in parenting behavior, we gain information on why some parents generally may act more or less supportively than other parents do. By examining within-person variation in parenting, in contrast, we gain information on specific conditions under which parents may act more or less supportively than they typically do (Teti & Cole, 2011). Further, parents' dispositional characteristics may contribute to within-person fluctuations (i.e., variability around one's own mean; Hoffman, 2015) in parenting based on situational factors (Bornstein, 2015; Mischel & Shoda, 1995). Social determinants, such as what the child does from one moment to the next during the interaction, is one situational factor that may influence within-person fluctuations in parenting behavior (Jones & Gerard, 1967; Thomas & Martin, 1976). Dix (1991) discussed how parents' dispositional characteristics, in combination with social determinants (e.g., child affect or behavior), shape parents' affective states and goals in those moments, which, in turn, influences parents' behavior.

Of the few studies to examine maternal dispositional or stable characteristics as a predictor of within-person fluctuations in maternal behavior, Skowron, Cipriano-Essel, Benjamin, Pincus, and Van Ryzin (2013) reported that maltreating versus nonmaltreating mothers showed increases in hostile parenting (relative to their average) in moments following within-mother decreases in parasympathetic activity. In a similar vein, Beebe and her colleagues showed that mothers who reported higher trait-level self-criticism exhibited lowered coordinated responses to infant touch, gaze, and affective cues (Beebe et al., 2007), and mothers who reported higher trait levels of anxiety showed both lowered coordinated affect in response to infant affective cues and heightened coordinated touch in response to infant touch cues (Beebe et al., 2011). These studies demonstrate that mothers' stable characteristics (e.g., maltreatment risk, self-criticism, anxiety) may predict changes in parenting only on certain occasions, based on within-person fluctuations in maternal physiology as well as infants' emotions and behaviors.

The Current Study

Our main objective was to examine the extent to which mothers' dispositional distress reactivity predicted their supportive behavior in moments when their toddler-aged children displayed higher levels of aversive behavior than their own average. In doing so, our objective aligned with theoretical and empirical approaches that integrate trait characteristics and social determinants to gain a more fine-grained understanding of parenting behavior (Beebe et al., 2007, 2011; Bornstein, 2015; Dix, 1991; Skowron et al., 2013). Mother–toddler dyads were observed during a snack-delay task in which the toddlers were required to wait to receive an attractive snack that was visible but not accessible to them, and maternal support and child aversive behavior during the task were coded in 15-s intervals.

We adopted a multilevel modeling approach that enabled us to parse between- and within-person variation in maternal supportive behavior. Specifically, we examined mothers' dispositional distress reactivity as a predictor of fluctuations in maternal support when children displayed within-person fluctuations in aversive behavior in both concurrent (i.e., child behavior assessed in the same 15-s interval) and time-lagged (i.e., child behavior assessed in the prior 15-s interval) moments. Although time-lagged associations capture the theorized temporal ordering of the association (i.e., mothers' dispositional distress reactivity predicts decreases in maternal support when children show increases in aversive behavior in the prior moment), we also tested concurrent associations, as it possible that mothers' dispositional distress reactivity predicts relatively immediate changes in maternal behavior when children display aversive behavior. Based on prior theoretical work (Dix, 1991; Gottman et al., 1996, 1997), we hypothesized that mothers who report higher levels of dispositional distress reactivity would respond less supportively to their children both during and following moments when child aversive behavior is higher than the child's own average level.

We included several covariates in our model tests. First, we controlled for time-based variables (i.e., linear change in maternal support and autoregressive effects) to strengthen the internal validity of our inferences (see Bolger & Laurenceau, 2013; Curran & Bauer, 2011; Gollob & Reichardt, 1987). Second, because maternal dispositional distress reactivity has shown positive modest correlations with trait-level anger (Fabes et al., 2002), we controlled for mother-reported negative emotional expressiveness in the home to assess the unique contributions of mothers' dispositional distress reactivity to parenting behavior. Third, child negative temperament has been associated with less supportive parenting (see Bates, Schermerhorn, & Petersen, 2012), and, thus, we controlled for between-child differences in aversive behavior, which captures a "trait-like" or temperamental characteristic that varies between children.

Method

Participants

One hundred twenty-eight toddlers (66 girls) and their parents participated in a short-term longitudinal study of children's social development. Families were recruited via birth announcements and flyers sent to local daycare centers and community organizations. Children were between 31 and 35 months of age (M = 32.7 months, SD = .76) at the first time point. Mothers averaged 32.80 years of age (SD = 5.63) and 16.39 years of education (SD = 2.46). Fathers averaged 34.27 (SD = 5.69) years of age and 16.17 (SD = 2.70) years of education. Mothers and fathers were 3% and 4% African American, 6% and 3% Asian American, 82% and 86% European American, 1% and 1% Hispanic, 2% and 4% Native American, and 6% and 2% more than one race, respectively. Both parents were European American for 76% of the sample. The median family income was $65,000 ($SD$ = $33,180). Eighty-nine children had siblings in the home (33 were first-born, 42 were second-born, and 14 were third- or later-born). Data from one family were excluded from this report because the mother and child did not speak in English during the observational session.

Procedure

Data were collected at multiple time points when children were 2.5 to 5 years of age, and data from the first time point were utilized for this report. Mother–child dyads were videotaped in a variety of interactive tasks during a 90-min laboratory visit. The tasks included a modified Strange Situation, play, clean up, snack delay, snack, picture book task, and Empty Box procedure (see McElwain, Holland, Engle, & Wong, 2012 for further details). For the purposes of the current report, we used data from the 5-min snack-delay task, in which mother–child dyads were seated together at a child-sized table and mothers were instructed to have their children wait for the snack (teddy grahams, banana, juice, and water bottle) while they completed some paperwork. The mother was given a word puzzle to complete, and a transparent box containing the snack items was placed on the table in front of the child. A knock at the end of 5 min signaled the end of the delay task. To minimize the child's awareness of the task objectives, mothers received written instructions for the snack delay. At the end of the laboratory visit, mothers were given a questionnaire packet, which included items assessing maternal distress reactivity to children's negative emotions and maternal negative emotional expressiveness, to complete at home and return by mail.

Measures

Maternal dispositional distress reactivity. Mothers' dispositional distress reactivity was measured using the Distress Reactions subscale of the Coping with Toddlers' Negative Emotions Scale (CTNES; Spinrad, Eisenberg, Kupfer, Gaertner, & Michalik, 2004). Mothers were presented with 12 hypothetical situations and rated their distress reactions to each situation on a 7-point scale (1 = *very unlikely*, 7 = *very likely*; a = .84; e.g., "If my child becomes angry because he/she wants to play outside and cannot do so because he/she is sick, I would feel upset myself"). Ratings were averaged across the 12 items. The CTNES, which was adapted from the Coping with Children's Negative Emotions Scale (Fabes et al., 2002) for use with parents of toddlers, has shown good internal consistency and test–retest reliability across a period of two to four months (Spinrad, Eisenberg, et al., 2004).

Maternal negative expressiveness. Mothers also completed the short form of the Self-Expressiveness in the Family Questionnaire (SEFQ; Halberstadt, Cassidy, Stifter, Parke, & Fox, 1995), which taps positive (12 items) and negative (12 items) expressiveness in situations with family members. The Negative Expressiveness subscale (e.g., "expressing anger at someone else's carelessness"; "showing how upset you are after a bad day") was examined in this report. Mothers rated each item on a 9-point scale ranging from 1 (*not at all frequently*) to 9 (*very frequently*), and responses were averaged across items (α = .84). The SEFQ has demonstrated good internal consistency, test–retest reliability, and construct validity (Halberstadt et al., 1995).

Observed mother and child behavior. From digital video recordings of the 5-min snack delay, two separate pairs of trained and reliable coders assessed: (1) maternal support and nonsupport; and (2) child disruptive behavior and negative affect using coding schemes developed for this study. Following prior research that has rated maternal behaviors on a continuous scale (e.g., Belsky, Rovine, & Taylor, 1984), we coded in 15-s intervals because such intervals were long enough to rate on a continuum the quality of maternal behavior in the context of, and in response to, child cues, yet brief enough to capture relatively rapid moment-to-moment change in maternal behavior as it unfolded across real time. Coders were blind to all other study data. Intervals were synchronized in time across mother and child behaviors using Datavyu (Datavyu Team, 2014), a computerized video coding tool.

Maternal support (e.g., responding to the child's bids in a positive manner, providing explanations or reasons, praising the child, distracting the child away from the snack box, validating the child's affect) and *nonsupport* (e.g., ignoring the child's bids, physically moving the child or taking the snack box away from the child, interrupting the child, threatening to punish the child, engaging in sarcastic or derogatory remarks) were each rated on a 4-point scale, ranging from 0 (*no evidence of behavior*) to 3 (*intense, enduring, and/or frequent occurrences of behavior*), during each 15-s interval. Interobserver reliability, calculated on 25% of the protocols, was high (intraclass correlation coefficients [ICCs] = .90 and .84 for maternal support and nonsupport, respectively). Interval scores of maternal support and nonsupport

showed a negative, moderate correlation ($r = -.51$). To obtain a more representative measure of maternal support, ratings of support and nonsupport (reverse scored) were summed within each 15-s interval, with higher scores indicating more support (possible range = 0 to 6).

Child disruptive behavior (e.g., grabbing the mother's pen, attempting to open the box, noncompliance) and *child negative affect* (e.g., frowning, whining, frustrated tones; this code was modified from Cole, Barrett, & Zahn-Waxler, 1992) were each rated on a 4-point scale, ranging from 0 (*no evidence of behavior*) to 3 (*intense, enduring, and/or frequent occurrences of behavior*), during each 15-s interval. Twenty-five percent of the protocols were double-coded, and the scales showed good interobserver reliability (ICCs = .85 and .83 for child disruptive behavior and negative affect, respectively). Interval scores of child disruptive behavior and negative affect were positively correlated ($r = .22$), although the association was weak because of relatively low levels of negative affect. To obtain a more representative measure, the two scales were summed to obtain a score of *child aversive behavior* for each 15-s interval, with higher scores indicating more negative behavior and affect (possible range = 0 to 6).

Data Analytic Strategy

We first conducted preliminary analyses to (a) identify potential covariates to include in our main model tests, and (b) to estimate the proportions of between- and within-person variability in maternal and child behavior by computing ICCs from random intercept models. To test our main hypothesis that dispositional distress reactivity will predict decreases in maternal support during and following moments when children show increased child aversive behavior, we estimated two multilevel models using Mplus 7.4 (Muthén & Muthén, 1998–2015). For each model, we tested a cross-level interaction between mothers' dispositional distress reactivity (Level 2 predictor) and within-child aversive behavior (Level 1 moderator) predicting maternal support. In Model 1, we examined the effects of mothers' dispositional distress reactivity on maternal support when children showed within-person fluctuations in the same 15-s interval (see Model 1 in Figure 1). In Model 2, we added a lagged ($t - 1$) variable of aversive child behavior to Model 1 to test the effects of dispositional distress reactivity on maternal support in the next interval when children showed within-person fluctuations in aversive behavior in the prior 15-s interval (see Model 2 in Figure 1). Between-child aversive behavior (i.e., ratings of aversive behavior averaged across all 15-s intervals of the snack delay) and maternal negative emotional expressiveness were included as covariates at Level 2 in both models. Further, to isolate the within-person estimates of maternal support from systematic between-person differences in mothers' rate of change, we controlled for linear change in maternal support over the course of the 5-min snack delay (Bolger & Laurenceau, 2013; Curran & Bauer, 2011). Additionally, because an individual's behavior in a particular interval is likely to be more strongly related to the individual's behavior in proximal versus distal intervals (e.g., Bolger & Laurenceau, 2013; Gollob & Reichardt, 1987), we controlled for autoregression in maternal support and child aversive behavior, respectively, to minimize such nonindependence or "carryover effects" from biasing our estimates of within-person fluctuations.

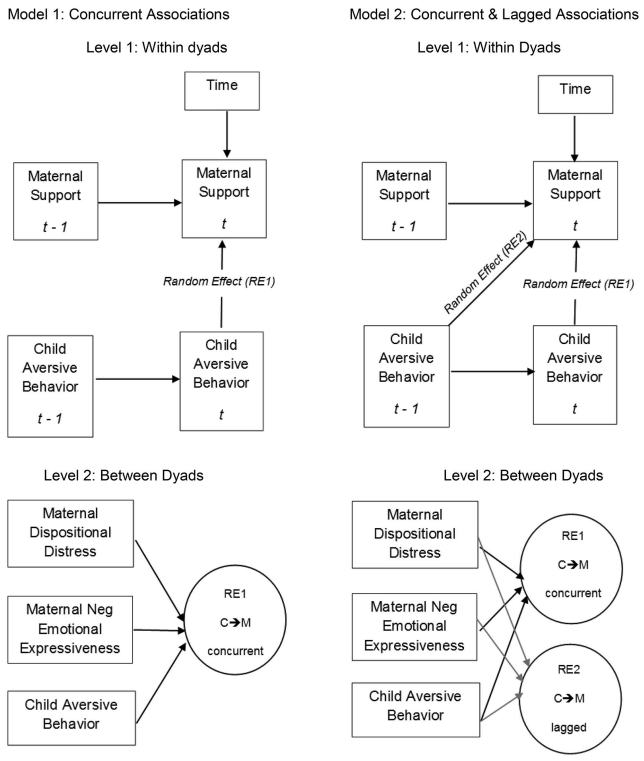

Figure 1. Data analytic plan for Model 1 (concurrent effects) and Model 2 (concurrent and time-lagged effects). C = child aversive; M = maternal support; RE = random effect.

To increase interpretability of model parameters, mothers' dispositional distress reactivity and negative emotional expressiveness were grand-mean centered (i.e., individual's score on the variable minus the group mean) and entered as Level 2 predictors. Child aversive behavior, assessed in 15-s intervals, was also grand-mean centered and entered as a predictor at both Levels 1 and 2. Mplus automatically separates within- and between-person variability when the grand-mean centered variable is entered at both levels. The lagged variable of within-child aversive behavior examined in Model 2 was person-mean centered (i.e., raw score for interval *t–1* minus the child's mean level of aversive behavior across the snack delay). Statistically significant interactions were probed by testing model constraints for simple slopes at low (1 *SD* below the mean) and high (1 *SD* above the mean) values of within-child aversive behavior, for which the *SD*s were estimated as the square root of the within-person variance.

Data on maternal dispositional distress reactivity were missing for seven mothers because they did not complete the questionnaire measures. *T* tests between mothers with and without missing data indicated no significant differences on observed maternal or child behavior ($t \leq -1.65$, $p \geq .10$) To account for these missing data, full-information maximum likelihood (FIML) estimation was used. FIML utilizes all data available and provides less biased estimates compared with other methods such as listwise deletion (Schafer & Graham, 2002). Thus, the sample size for model tests was 127.

Results

Preliminary Analyses

We first examined child gender, maternal years of education, and family income as potential third variables. None of these demographic variables were associated with both the predictor and outcome variables, and we did not include the demographic measures in the main models. Descriptive statistics and intercorrelations for the between-person raw scores of maternal support and child aversive behavior (i.e., ratings averaged across all intervals), maternal dispositional distress reactivity, and maternal negative emotional expressiveness are reported in Table 1. Mothers who reported higher levels of negative emotional expressiveness in the home tended to show less support during the snack delay and reported higher levels of dispositional distress reactivity. Higher mean levels of child aversive behavior were also associated with lower mean levels of maternal support. Thus, we controlled for both maternal negative emotional expressiveness and between-child aversive behavior in the main models.

The random intercept model for maternal behavior showed that the ICC for maternal support was .24, indicating that 24% of the variation in maternal support was between mothers (i.e., individual differences in maternal support) and 76% of the variation was within mothers (i.e., time-specific deviations from the mother's own mean level of support). Likewise, a random intercept model of child behavior showed that the ICC for child aversive behavior was .23, indicating that 23% of the variation was between children and 77% was within children.

A preliminary unconditional growth model for maternal support indicated that, on average, maternal support decreased over the course of the snack delay ($b_{slope} = -.009$, $SE = .004$, $p = .025$; $b_{intercept} = 3.664$, $SE = .057$, $p < .001$). We also tested two separate models without predictors or covariates to estimate autoregression in maternal and child behavior, respectively. On average, mothers did not show stability in support ($b = .021$, $SE = .024$, $p = .367$), but children showed stability in aversive behavior from one interval to the next ($b = .108$, $SE = .024$, $p < .001$). A third model estimating the association between autoregressive effects in maternal and child behavior (with no other predictors or covariates) showed that autoregression in maternal support and child aversive behavior were positively associated ($b = .015$, $SE = .008$, $p = .05$). This suggested that stability from one 15-s interval to the next in the mother's behavior occurred in relation to stability in the child's behavior. As recommended by Bolger and Laurenceau (2013), Curran and Bauer (2011), and Gollob and Reichardt (1987), fixed effects for the linear slope of maternal support and autoregression of maternal and child behavior were included in the main models to adjust the within-person effects for these broader temporal trends.

Main Model Tests

To address our main research question, we tested the unique contribution of mothers' dispositional distress reactivity to maternal support during and following moments when children showed within-person fluctuations in aversive behavior, controlling for maternal negative emotional expressiveness and between-child aversive behavior (see Figure 1 for details). Unstandardized parameter estimates for both models are shown in Table 2, and we also report the unstandardized parameter estimates for tests of simple slopes. All Level 1 residual covariances were estimated in each model and were nonsignificant.

In Model 1, maternal dispositional distress reactivity and maternal negative emotional expressiveness were nonsignificant predictors, whereas between-child aversive behavior emerged as a significant predictor of maternal support during intervals when children showed within-person fluctuations in aversive behavior (see Table 2). This finding remained significant in Model 2. We probed this cross-level interaction in Model 2 at high (1 *SD* above the mean) and low (1 *SD* below the mean) levels of within-child aversive behavior ($SD_{\text{child aversive behavior}} = .916$). As shown in Figure 2, greater between-child aversive behavior was related to lower levels of maternal support in intervals when within-child aversive behavior was high ($b = -.356$, $SE = .119$, $p = .003$) but not in intervals when within-child aversive behavior was low ($b = -.047$, $SE = .165$, $p = .773$). In sum, children who showed higher mean levels of aversive behavior across the snack delay tended to have mothers who were less supportive, but only on occasions when these children showed higher aversive behavior than their average.

Turning to tests of time-lagged associations in Model 2, between-child aversive behavior and maternal negative emotional expressiveness were nonsignificant, whereas a significant cross-level interaction

Table 1
Descriptive Statistics and Correlations Among Study Variables

Measures	1	2	3	4
1. Mothers' dispositional distress reactivity	—			
2. Child aversive behavior (mean score)	−.039	—		
3. Maternal support (mean score)	−.135	−.292***	—	
4. Mothers' negative emotional expressiveness	.389***	.056	−.183*	—
N	120	127	127	122
Mean	3.09	.63	3.66	47.76
SD	1.01	.49	.59	13.23
Range	1.25–6.33	0–3.47	1.95–4.90	21–76

Note. The *SD*s for maternal support and child aversive behavior mean scores were estimated as the root of between-person variance from random intercept models of maternal support and child aversive behavior, respectively.
* $p < .05$. *** $p \leq .001$.

Table 2
Maternal Dispositional Distress Reactivity as a Predictor of Maternal Support During and Following Within-Person Fluctuations in Children's Aversive Behavior

Parameters	Model 1 (concurrent associations) Est. (*SE*)	*p*	Model 2 (concurrent and time-lagged associations) Est. (*SE*)	*p*
Intercept	3.824 (.067)	<.001	3.819 (.067)	<.001
Level 1 predictors				
Time → maternal support$_t$	–.012 (.004)	.009	–.011 (.004)	.011
Maternal support$_{t-1}$ → maternal support$_t$	.001 (.024)	.958	.0003 (.024)	.997
Child aversive behavior$_{t-1}$ → child aversive behavior$_t$	.133 (.025)	<.001	.134 (.025)	<.001
Child aversive behavior$_t$ → maternal support$_t$	–.052 (.03)	.083	–.045 (.03)	.137
Child aversive behavior$_{t-1}$ → maternal support$_t$			012 (.029)	.678
Level 2 predictors of intercept				
Maternal dispositional distress reactivity	–.098 (.073)	.178	–.097 (.073)	.185
Between-child aversive behavior	–.182 (.128)	.154	–.202 (.127)	.111
Maternal negative emotional expressiveness	–.003 (.005)	.535	–.003 (.005)	.555
Level 2 predictors of concurrent association				
Maternal dispositional distress reactivity	–.018 (.032)	.587	–.011 (.032)	.729
Between-child aversive behavior	–.170 (.079)	.033	–.169 (.074)	.023
Maternal negative emotional expressiveness	.002 (.003)	.480	.002 (.003)	.541
Level 2 predictors of lagged association				
Maternal dispositional distress reactivity			–.055 (.028)	.047
Between-child aversive behavior			–.048 (.065)	.462
Maternal negative emotional expressiveness			.003 (.002)	.160
Random effects				
Residual variance (within): maternal support	1.017 (.051)	<.001	1 (.051)	<.001
Residual variance (within): child aversive behavior	.793 (.057)	<.001	.793 (.057)	<.001
Residual variance (between): intercept	.285 (.062)	<.001	.285 (.062)	<.001
Residual variance (between): concurrent effects	.023 (.013)	.08	.021 (.012)	.081
Residual variance (between): lagged effects			.019 (.012)	.111
Model fit				
Parameters	35		45	
−2LL	15,679.256		15,663.606	

Note. The maternal dispositional distress reactivity, maternal negative emotional expressiveness, and between-child aversive behavior predictors were grand-mean centered for the model tests. Residual covariances of the Level 1 variables were estimated for each model but are not shown. All covariance estimates were nonsignificant.

emerged between mothers' dispositional distress reactivity and child aversive behavior in interval $t - 1$ (see Model 2, Table 2). In probing the significant cross-level interaction, we examined the association between maternal dispositional distress reactivity and maternal support at high (1 *SD* above the mean) and low (1 *SD* below the mean) levels of within-child aversive behavior in interval $t - 1$ ($SD_{\text{child aversive behavior}} = .916$). This interaction is plotted in Figure 3. Although simple slope analyses were calculated using values at ±1 *SD* of within-child aversive behavior, we present the interaction using a broader range of values (±1.5 *SD*s) of mothers' dispositional distress reactivity as it is more visually representative of the interaction effects present. The values for ±1.5 *SD*s of mothers' dispositional distress reactivity were within the range in our sample. As shown in Figure 3, greater maternal dispositional distress reactivity marginally predicted less maternal support in a given interval when within-child aversive behavior in the prior interval was high ($b = -.148$, $SE = .076$, $p = .053$). The simple slope became significant at 1.039 *SD*s of within-child aversive behavior ($b = -.15$, $SE = .077$, $p = .05$). In contrast, maternal dispositional distress reactivity did not predict maternal support when within-child aversive behavior was low ($b = -.047$, $SE = .079$, $p = .554$). In sum, mothers who reported higher levels of dispositional distress reactivity showed *less* supportive behavior during the snack delay, but only when their children showed higher aversive behavior than their average in the prior 15-s interval.

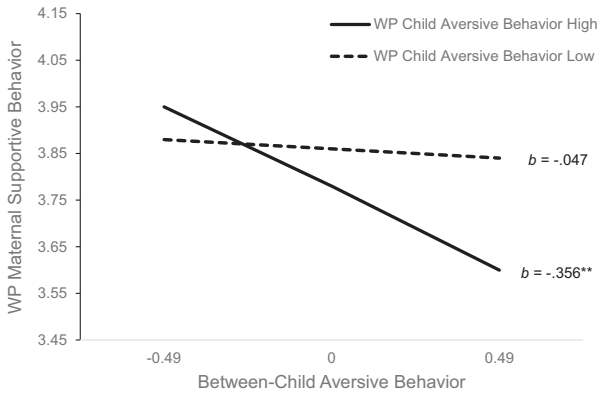

Figure 2. Associations between between-child aversive behavior and maternal support as a function of within-child aversive behavior. WP = within-person. ** $p < .01$.

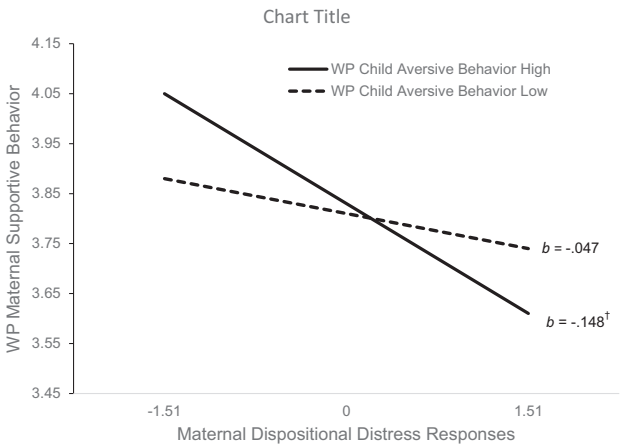

Figure 3. Associations between maternal dispositional distress reactivity and maternal support as a function of within-child aversive behavior in the prior interval. WP = within-person. † $p = .053$.

We also note that maternal dispositional distress reactivity, maternal negative emotional expressiveness, and between-child aversive behavior were nonsignificant predictors of the intercept of maternal support (see Table 2). Thus, taking into account within-person variation, dispositional characteristics of the parent and child did not predict between-person differences in maternal support. We also conducted sensitivity analyses to examine whether the effects of maternal dispositional distress reactivity on maternal support during and following moments when children showed within-person fluctuations in aversive behavior varied as a function of between-child aversive behavior. To this end, we added the interaction between maternal dispositional distress reactivity and between-child aversive behavior to Models 1 and 2, respectively. In all cases, this interaction was nonsignificant.

Discussion

Parenting is theorized to be shaped by dispositional characteristics of the parent, but this influence may be stronger on certain occasions based on social determinants—including the child's moment-to-moment emotions and behaviors (Bornstein, 2015; Dix, 1991; Jones & Gerard, 1967; Mischel & Shoda, 1995; Thomas & Martin, 1976). The findings provide support for these theoretical premises by demonstrating that mothers' dispositional distress reactivity (i.e., a trait-level characteristic) predicted decreases in mothers' supportive behavior in moments following within-person increases in children's aversive behavior (i.e., social determinants). Importantly, this finding emerged above and beyond mother-reported negative emotional expressiveness in the home and observed mean levels of child aversive behavior across the 5-min snack delay. Our models also controlled for linear change in maternal support as well as autoregressive effects, thereby isolating variance of within-person fluctuations in maternal and child behavior in a given moment from systematic change across the snack delay or carryover effects from prior intervals.

Our finding is consistent with prior studies showing that parents' distress reactivity is related to less supportive parenting behaviors (e.g., Fabes et al., 2002; Leerkes, 2010; Lorber & Slep, 2005). In these prior studies, however, maternal support was assessed as a global construct that only varied between mothers. We extended this work by assessing within-person fluctuations in parenting to shed light on specific circumstances under which maternal dispositional distress reactivity predicts decreases in support. As hypothesized, we found that mothers who reported higher levels of dispositional distress reactivity showed less supportive behavior toward their children, but only when their children showed higher aversive behavior than their average in the prior 15-s interval. Neither dispositional distress reactivity nor within-child aversive behavior uniquely predicted maternal support, highlighting the importance of considering interactive contributions of dispositional characteristics and social determinants to maternal behavior.

Although past empirical work has also demonstrated contributions of maternal dispositional characteristics to within-person fluctuations in parenting, these associations have been investigated during mother–infant play interactions (Beebe et al., 2007, 2011) or in relation to maternal physiological processes during mother–child interaction (Skowron et al., 2013). Our investigation of within-person fluctuations is unique in that it focused on mothers of toddlers during an emotionally challenging situation and examined within-person fluctuations in maternal support in response to toddlers' affective and behavioral cues. Compared with other developmental periods, toddlerhood is one in which regulatory skills are rapidly developing, and disruptive behavior and negative affect are increasing (Brownell & Kopp, 2010). Patterson (2002) posited that when mothers fail to respond supportively to toddlers' displays of aversive behavior, they may reinforce toddlers' anger or resistance, which, in turn, causes mothers to respond harshly and may result in a cycle of coercive interaction. Coercive interactions reinforce children's difficult behavior and may lead to the development of externalizing behavior problems over time (Patterson, 2002). As such, it seems especially important to investigate parenting processes during emotional challenges with toddler-aged children.

We consider several alternative explanations for our key finding that mothers' dispositional distress reactivity predicts decreases in maternal support following children's displays of aversive behavior. First, in his model of the affective organization of parenting, Dix (1991) posits that parents' dispositional tendency to experience negative emotions influence parenting behavior via emotion-related processes during real-time interactions with children, particularly parents' heightened emotional arousal when confronted with children's aversive behavior. Such "online" emotion-related processes are likely to be a mechanism through which maternal dispositional distress reactivity affects supportive parenting. When confronted with children's aversive behavior, mothers high on dispositional distress reactivity may experience heightened emotional arousal (and may even become "flooded" by their emotional state; see Gottman et al., 1996; Lorber, Mitnick, & Slep, 2016) and, as a result, respond less supportively.

Second, maternal cognitions may act as an alternate or complementary mechanism. Mothers who have a tendency to become distressed in response to children's negative emotions and behaviors may adopt goals that are focused on reducing their own arousal, which can interfere with cognitive processing of the child's perspective (Dix, 1991). Further, Gottman et al.'s (1996, 1997) theoretical work on meta-emotions suggests that parents who experience distress reactivity adopt more parent-centered

goals or dismissive beliefs about children's negative emotions and, as a result, may respond less supportively when their children display aversive behavior. Additionally, both Dix (1991) and Gottman et al. (1996) discuss that mothers who make more negative attributions about their children's behavior may exhibit less supportive parenting. Indeed, empirical studies show that parents' trait levels of negative affect predicted increases in real-time cognitive processes such as self-focused goals and negative attributions about the child's behavior, which, in turn, were associated with less supportive parenting (Dix et al., 2004; Leerkes et al., 2015; Lorber & O'Leary, 2005).

In accordance with prior literature, our interpretations emphasize the detrimental effect that maternal dispositional distress reactivity may have on parenting behavior. However, it is equally important to recognize that the plots of the simple slopes also indicated that lower levels of maternal dispositional distress reactivity predicted *more* supportive maternal behavior when children displayed higher levels of aversive behavior in the prior moment. Mothers who reported lower levels of dispositional distress reactivity may experience minimal negative emotional arousal in response to child aversive behavior, may be better able to adopt child-centered goals in such moments, and/or may hold more accepting beliefs about children's negative emotions. As a result, they may be able to increase their level of supportiveness in accord with increases in children's negative emotional and behavioral cues.

Interestingly, maternal dispositional distress reactivity predicted maternal support when child aversive behavior was high in the *prior* interval but not in the concurrent interval. Although the optimal time lag in models of causal behavioral processes is often underspecified by theory and, thus, poses empirical challenges (e.g., see Gollob & Reichardt, 1987), our findings suggest that a mother's trait-like tendency to experience distress in response to her child's negative emotions and behavior may have a somewhat delayed, rather than a more immediate, effect on her parenting behavior. To further understand such time-lagged associations, future research should examine within-person fluctuations in mothers' emotional experiences (e.g., arousal, flooding) and cognitions (e.g., maternal goals, child-related beliefs and attributions) as potential mechanisms by which dispositional distress reactivity disrupts supportive parenting, particularly when children display aversive behavior. Because variation in mothers' *expressed* emotions during laboratory tasks may be limited, physiological measures such as galvanic skin response or heart-rate variability could be used to unobtrusively and continuously assess within-person fluctuations in maternal emotion-related arousal in response to child cues (e.g., Leerkes et al., 2016; Skowron et al., 2013).

It is important to note that mothers' dispositional distress reactivity uniquely predicted decreased maternal support following instances of heightened child aversive behavior, over and above between-child aversive behavior and mother-reported negative emotional expressiveness. The latter covariate, notably, did *not* predict within-person fluctuations in maternal support—a finding that is consistent with Moed et al.'s (2016) report that mothers' negative emotions specifically *in response to* children's negative emotions and behaviors predicted children's adjustment longitudinally. Not all negative emotions that mothers express in the home are accompanied by a desire to meet the parent's rather than the child's goals (Dix, 1991), whereas distress reactivity is by definition accompanied by a parent-focused goal to reduce the parent's arousal (Fabes et al., 2002). Thus, dispositional distress reactivity—not negative emotions in general—may hamper mothers' ability to support children during challenging moments.

Although not central to our main objective, an additional finding is worth noting: Higher mean levels of child aversive behavior predicted lower levels of maternal support during moments when children displayed higher aversive behavior than their own average. This result is consistent with prior findings that child trait-level negative emotionality and aversive behavior are associated with less supportive parenting (see Bates et al., 2012). We extend this prior work by showing that such associations tend to occur uniquely in moments when children display more aversive behaviors *than they typically do*. Mothers whose children are generally more prone to displaying aversive behavior may be especially reactive to "in the moment" increases in such behavior. Between-child aversive behavior did not predict time-lagged associations, suggesting that the interaction of between- and within-child levels of aversive behavior predict relatively immediate change in parenting.

Our investigation has several methodological strengths. First, because we examined changes in maternal and child behavior relative to one's own mean, parents and children acted as their own controls. This increases the ability to draw causal inferences by eliminating the influence of time-invariant confounds such as genes, child sex, or socioeconomic status (Bolger & Laurenceau, 2013). Second, by controlling for systematic change in maternal support and stability in maternal and child behavior from one interval to the next (i.e., autoregressive effects), and by examining the time-lagged association between child aversive behavior and maternal support, we gained a better understanding of temporal relations between these constructs. Third, tests of the main models disentangled between- and within-person variation in maternal supportive behavior, whereas prior studies have typically used global or average indices of parenting. By parsing between- and within-person variation, we were able to specify both (a) the extent to which some mothers acted less supportively compared with other mothers, and (b) circumstances in which mothers may display less (or more) supportive behavior than they usually do (see Teti & Cole, 2011).

Our findings also have important applied implications. In particular, identifying specific circumstances in which parents may be less likely to display supportive behavior may inform preventive interventions. Mothers who report high levels of dispositional distress reactivity may benefit from interventions that help them regulate distress following their children's displays of aversive behavior. For instance, by promoting mothers' increased awareness of their distress reactivity and its triggers, as well as providing mothers with strategies to effectively manage distress reactivity (e.g., by reappraising the child's behavior; by focusing on child- vs. parent-oriented goals), mothers may be better able to provide consistent support to children during challenging moments. Enhancing maternal support in these ways may also promote children's own effective and age-appropriate strategies for managing emotions and behavior (Calkins et al., 1998).

This study is not without limitations. The sample was predominantly middle-class and European American, and the findings cannot be generalized to other populations. Relatedly, our sample was at relatively low risk for emotional difficulties; mothers did not report extreme levels of dispositional distress reactivity, and

children did not display extreme levels of aversive behavior during the snack delay. Future studies should examine whether more pronounced associations emerge for samples with higher risk for emotional difficulties. Second, we focused on mothers, yet we recognize the importance of investigating paternal dispositional distress reactivity in relation to fathers' provision of support during emotional challenges. Because males are more likely to inhibit or mask distress reactivity compared with females (e.g., Eisenberg, Fabes, Schaller, & Miller, 1989), it is important to test whether similar patterns emerge among dispositional distress reactivity, child aversive behavior, and paternal support. Finally, we examined maternal support during a task designed to elicit frustration in children, and these findings cannot be generalized to maternal support during other types of challenges. Parents may vary in their responses to different types of negative emotions (Eisenberg et al., 1998), and it is possible that mothers who are high on dispositional distress reactivity show different patterns of change in supportive parenting when confronted with children's sadness or anxiety.

Despite these limitations, this study is one of the first to adopt a within-person approach to examine the contributions of maternal dispositional distress reactivity to parenting behavior. Our findings demonstrate that mothers' dispositional tendencies may contribute to variation in mothers' supportive parenting across occasions based on within-person fluctuations in child affect and behavior. It is noteworthy that mothers' dispositional distress reactivity predicted decreases in supportive parenting following children's increased displays of aversive behavior during a relatively brief and moderately challenging laboratory task. We suspect that such associations will be pronounced in more intense or prolonged challenges that parents of young children regularly manage in their everyday lives.

References

Bates, J. E., Schermerhorn, A. C., & Petersen, I. T. (2012). Temperament and parenting in developmental perspective. In M. Zentner & R. L. Shiner (Eds.), *Handbook of temperament* (pp. 425–441). New York, NY: Guilford Press.

Batson, C. D., Fultz, J., & Schoenrade, P. A. (1987). Distress and empathy: Two qualitatively distinct vicarious emotions with different motivational consequences. *Journal of Personality, 55,* 19–39. http://dx.doi.org/10.1111/j.1467-6494.1987.tb00426.x

Batson, C. D., O'Quin, K., Fultz, J., Vanderplas, M., & Isen, A. M. (1983). Influence of self-reported distress and empathy on egoistic versus altruistic motivation to help. *Journal of Personality and Social Psychology, 45,* 706–718. http://dx.doi.org/10.1037/0022-3514.45.3.706

Beebe, B., Jaffe, J., Buck, K., Chen, H., Cohen, P., Blatt, S., . . . Andrews, H. (2007). Six-week postpartum maternal self-criticism and dependency and 4-month mother-infant self- and interactive contingencies. *Developmental Psychology, 43,* 1360–1376. http://dx.doi.org/10.1037/0012-1649.43.6.1360

Beebe, B., Steele, M., Jaffe, J., Buck, K. A., Chen, H., Cohen, P., . . . Feldstein, S. (2011). Maternal anxiety symptoms and mother–infant self-and interactive contingency. *Infant Mental Health Journal, 32,* 174–206. http://dx.doi.org/10.1002/imhj.20274

Belsky, J., Rovine, M., & Taylor, D. G. (1984). The Pennsylvania Infant and Family Development Project, III: The origins of individual differences in infant-mother attachment: Maternal and infant contributions. *Child Development, 55,* 718–728. http://dx.doi.org/10.2307/1130124

Bolger, N., & Laurenceau, J. P. (2013). *Intensive longitudinal methods*. New York, NY: Guilford Press.

Bornstein, M. H. (2015). Children's parents. In R. M. Lerner (Ed.), *Handbook of child psychology and developmental science* (pp. 1–78). New York, NY: Wiley.

Brownell, C. A., & Kopp, C. B. (2010). *Socioemotional development in the toddler years: Transitions and transformations*. New York, NY: Guilford Press.

Calkins, S. D. (2002). Does aversive behavior during toddlerhood matter? The effects of difficult temperament on maternal perceptions and behavior. *Infant Mental Health Journal, 23,* 381–402. http://dx.doi.org/10.1002/imhj.10024

Calkins, S. D., Smith, C. L., Gill, K. L., & Johnson, M. C. (1998). Maternal interactive style across contexts: Relations to emotional, behavioral, and physiological regulation during toddlerhood. *Social Development, 7,* 350–369. http://dx.doi.org/10.1111/1467-9507.00072

Cole, P. M., Barrett, K. C., & Zahn-Waxler, C. (1992). Emotion displays in two-year-olds during mishaps. *Child Development, 63,* 314–324. http://dx.doi.org/10.2307/1131481

Curran, P. J., & Bauer, D. J. (2011). The disaggregation of within-person and between-person effects in longitudinal models of change. *Annual Review of Psychology, 62,* 583–619. http://dx.doi.org/10.1146/annurev.psych.093008.100356

Datavyu Team. (2014). Datavyu: A video coding tool. Databrary Project, New York University, New York, NY. Retrieved from http://datavyu.org

Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology, 44,* 113–126. http://dx.doi.org/10.1037/0022-3514.44.1.113

Davis, M. H., Luce, C., & Kraus, S. J. (1994). The heritability of characteristics associated with dispositional empathy. *Journal of Personality, 62,* 369–391. http://dx.doi.org/10.1111/j.1467-6494.1994.tb00302.x

Davis, M. H., Mitchell, K. V., Hall, J. A., Lothert, J., Snapp, T., & Meyer, M. (1999). Empathy, expectations, and situational preferences: Personality influences on the decision to participate in volunteer helping behaviors. *Journal of Personality, 67,* 469–503. http://dx.doi.org/10.1111/1467-6494.00062

Denham, S. A., Blair, K. A., DeMulder, E., Levitas, J., Sawyer, K., Auerbach-Major, S., & Queenan, P. (2003). Preschool emotional competence: Pathway to social competence? *Child Development, 74,* 238–256. http://dx.doi.org/10.1111/1467-8624.00533

Dix, T. (1991). The affective organization of parenting: Adaptive and maladaptive processes. *Psychological Bulletin, 110,* 3–25. http://dx.doi.org/10.1037/0033-2909.110.1.3

Dix, T., Gershoff, E. T., Meunier, L. N., & Miller, P. C. (2004). The affective structure of supportive parenting: Depressive symptoms, immediate emotions, and child-oriented motivation. *Developmental Psychology, 40,* 1212–1227. http://dx.doi.org/10.1037/0012-1649.40.6.1212

Eisenberg, N., Cumberland, A., & Spinrad, T. L. (1998). Parental socialization of emotion. *Psychological Inquiry, 9,* 241–273. http://dx.doi.org/10.1207/s15327965pli0904_1

Eisenberg, N., Fabes, R. A., Schaller, M., & Miller, P. A. (1989). Sympathy and personal distress: Development, gender differences, and interrelations of indexes. *New Directions for Child Development, 1989*(44), 107–126. http://dx.doi.org/10.1002/cd.23219894408

Eisenberg, N., Fabes, R. A., Shepard, S. A., Guthrie, I. K., Murphy, B. C., & Reiser, M. (1999). Parental reactions to children's negative emotions: Longitudinal relations to quality of children's social functioning. *Child Development, 70,* 513–534. http://dx.doi.org/10.1111/1467-8624.00037

Fabes, R. A., Poulin, R. E., Eisenberg, N., & Madden-Derdich, D. A. (2002). The Coping with Children's Negative Emotions Scale (CCNES): Psychometric properties and relations with children's emotional competence. *Marriage & Family Review, 34,* 285–310. http://dx.doi.org/10.1300/J002v34n03_05

Gollob, H. F., & Reichardt, C. S. (1987). Taking account of time lags in causal models. *Child Development, 58,* 80–92. http://dx.doi.org/10.2307/1130293

Gottman, J. M., Katz, L. F., & Hooven, C. (1996). Parental meta-emotion philosophy and the emotional life of families: Theoretical models and preliminary data. *Journal of Family Psychology, 10,* 243–268. http://dx.doi.org/10.1037/0893-3200.10.3.243

Gottman, J. M., Katz, L. F., & Hooven, C. (1997). *Meta-emotion: How families communicate emotionally*. Mahwah, NJ: Erlbaum.

Halberstadt, A. G., Cassidy, J., Stifter, C. A., Parke, R. D., & Fox, N. (1995). Self-expressiveness within the family context: Psychometric support for a new measure. *Psychological Assessment, 7,* 93–103. http://dx.doi.org/10.1037/1040-3590.7.1.93

Hoffman, L. (2015). *Longitudinal analysis: Modeling within-person fluctuation and change*. New York, NY: Routledge.

Jones, E. E., & Gerard, H. B. (1967). *Foundations of social psychology*. New York, NY: Wiley.

Konrath, S. H., O'Brien, E. H., & Hsing, C. (2011). Changes in dispositional empathy in American college students over time: A meta-analysis. *Personality and Social Psychology Review, 15,* 180–198. http://dx.doi.org/10.1177/1088868310377395

Leerkes, E. M. (2010). Predictors of maternal sensitivity to infant distress. *Parenting, Science and Practice, 10,* 219–239. http://dx.doi.org/10.1080/15295190903290840

Leerkes, E. M., Su, J., Calkins, S. D., Supple, A. J., & O'Brien, M. (2016). Pathways by which mothers' physiological arousal and regulation while caregiving predict sensitivity to infant distress. *Journal of Family Psychology, 30,* 769–779. http://dx.doi.org/10.1037/fam0000185

Leerkes, E. M., Supple, A. J., O'Brien, M., Calkins, S. D., Haltigan, J. D., Wong, M. S., & Fortuna, K. (2015). Antecedents of maternal sensitivity during distressing tasks: Integrating attachment, social information processing, and psychobiological perspectives. *Child Development, 86,* 94–111. http://dx.doi.org/10.1111/cdev.12288

Lorber, M. F., Mitnick, D. M., & Slep, A. M. S. (2016). Parents' experience of flooding in discipline encounters: Associations with discipline and interplay with related factors. *Journal of Family Psychology, 30,* 470–479. http://dx.doi.org/10.1037/fam0000176

Lorber, M. F., & O'Leary, S. G. (2005). Mediated paths to over-reactive discipline: Mothers' experienced emotion, appraisals, and physiological responses. *Journal of Consulting and Clinical Psychology, 73,* 972–981. http://dx.doi.org/10.1037/0022-006X.73.5.972

Lorber, M. F., & Slep, A. M. (2005). Mothers' emotion dynamics and their relations with harsh and lax discipline: Microsocial time series analyses. *Journal of Clinical Child and Adolescent Psychology, 34,* 559–568. http://dx.doi.org/10.1207/s15374424jccp3403_11

Lunkenheimer, E. S., Shields, A. M., & Cortina, K. S. (2007). Parental emotion coaching and dismissing in family interaction. *Social Development, 16,* 232–248. http://dx.doi.org/10.1111/j.1467-9507.2007.00382.x

McElwain, N. L., Holland, A. S., Engle, J. M., & Wong, M. S. (2012). Child anger proneness moderates associations between child-mother attachment security and child behavior with mothers at 33 months. *Journal of Family Psychology, 26,* 76–86. http://dx.doi.org/10.1037/a0026454

Mischel, W., & Shoda, Y. (1995). A cognitive-affective system theory of personality: Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psychological Review, 102,* 246–268. http://dx.doi.org/10.1037/0033-295X.102.2.246

Moed, A., Dix, T., Anderson, E. R., & Greene, S. M. (2017). Expressing negative emotions to children: Mothers' aversion sensitivity and children's adjustment. *Journal of Family Psychology: JFP: Journal of the Division of Family Psychology of the American Psychological Association (Division 43), 31,* 224–233. http://dx.doi.org/10.1037/fam0000239

Muthén, L. K., & Muthén, B. O. (1998–2015). *Mplus user's guide* (7th ed.). Los Angeles, CA: Author.

Patterson, G. R. (2002). The early developmental of coercive family process. In J. B. Reid, G. R. Patterson, & J. Snyder (Eds.), *Antisocial behavior in children and adolescents: Developmental theories and models for intervention* (pp. 25–44). Washington, DC: American Psychological Association. http://dx.doi.org/10.1037/10468-002

Rueger, S. Y., Katz, R. L., Risser, H. J., & Lovejoy, M. C. (2011). Relations between parental affect and parenting behaviors: A meta-analytic review. *Parenting: Science and Practice, 11,* 1–33. http://dx.doi.org/10.1080/15295192.2011.539503

Schafer, J. L., & Graham, J. W. (2002). Missing data: Our view of the state of the art. *Psychological Methods, 7,* 147–177. http://dx.doi.org/10.1037/1082-989X.7.2.147

Skowron, E. A., Cipriano-Essel, E., Benjamin, L. S., Pincus, A. L., & Van Ryzin, M. J. (2013). Cardiac vagal tone and quality of parenting show concurrent and time-ordered associations that diverge in abusive, neglectful, and non-maltreating mothers. *Couple and Family Psychology: Research and Practice, 2,* 95–115. http://dx.doi.org/10.1037/cfp0000005

Spinrad, T. L., Eisenberg, N., Kupfer, A., Gaertner, B., & Michalik, N. (2004, May). *The Coping with Toddlers' Negative Emotions Scale*. Poster presented at the biennial International Conference on Infant Studies, Chicago, IL.

Spinrad, T. L., Stifter, C. A., Donelan-McCall, N., & Turner, L. (2004). Mothers' regulation strategies in response to toddlers' affect: Links to later emotion self-regulation. *Social Development, 13,* 40–55. http://dx.doi.org/10.1111/j.1467-9507.2004.00256.x

Swartz, R. A., Speirs, K. E., Encinger, A. J., & McElwain, N. L. (2016). A mixed methods investigation of maternal perspectives on transition experiences in early care and education. *Early Education and Development, 27,* 170–189. http://dx.doi.org/10.1080/10409289.2016.1087777

Teti, D. M., & Cole, P. M. (2011). Parenting at risk: New perspectives, new approaches. *Journal of Family Psychology, 25,* 625–634. http://dx.doi.org/10.1037/a0025287

Thomas, E. A. C., & Martin, J. A. (1976). Analyses of parent-infant interaction. *Psychological Review, 83,* 141–156. http://dx.doi.org/10.1037/0033-295X.83.2.141

Received May 23, 2016
Revision received June 30, 2017
Accepted July 25, 2017 ■