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Brief Report: Toddlers' context-varying emotions, maternal responses to emotions, and internalizing behaviors

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Abstract

Relations of toddlers' observed negative affect in high- and low-threat contexts to maternal perceptions of their toddlers' internalizing problems and to mothers' responses to emotions (RTE) for fear and sadness were examined. *Child-driven*, *parent-driven*, and *reciprocal* transactional models across 1 year were directly compared. Two-year old toddlers (N=106) participated in lab-based activities to elicit distress, and their negative affect was coded. Mothers completed measures of their child's internalizing behaviors and their responses to their toddler's fear and sadness at ages 2 and 3. At age 2, only negative affect in low-threat contexts was associated with greater internalizing problems. Mothers' punishing and minimizing RTE at age 2 predicted an increase in internalizing problems across 1 year. Age 2 internalizing problems predicted an increase in mother's use of supportive RTE over time. Results highlight the importance of considering the context of toddlers' negative affective displays and supported a reciprocal conceptualization of toddlers' internalizing behaviors and mothers' RTE.

Keywords

negative affect; internalizing; emotion socialization; toddlers

Children who display considerable negative affect early in life are at risk for later internalizing problems (Rothbart & Bates, 2006). Consideration of the context in which negative affect is displayed may more precisely predict which children are at risk for maladjustment (Eisenberg et al., 2001; Rothbart & Bates, 2006). For example, toddler fear expressed in low-threat contexts is more strongly associated with concurrent physiological reactivity and risk for later internalizing problems than is fear expressed in situations that more universally elicit distress (Buss, in press; Buss, Davidson, Kalin, & Goldsmith, 2004). As these studies suggest, toddlers' displays of negative affect in situations where most toddlers remain neutral or experience pleasure represent emotion dysregulation and vulnerability to maladaptation. Just as research has identified that context matters regarding negative affect's link to internalizing behaviors, so too might mothers make context-based decisions about which emotion-related behaviors are problematic. The context of negative affect displays may determine whether mothers perceive it as salient and, subsequently, whether it is problematic or extreme (Hane, Fox, Polak-Toste, Ghera, & Guner, 2006). That

is, if a mother routinely encounters situations in which her child displays negative affect when other toddlers do not, she may perceive her child as more withdrawn, sad, or fearful (i.e., internalizing-spectrum behaviors). Together, these studies informed our hypothesis that negative affect displayed in low-threat situations would more strongly relate to maternal perceptions of internalizing problems than negative affect in high-threat situations.

Children's negative affect may also influence mothers' responses to emotions (RTE), which include both verbal and behavioral reactions to toddlers' expressions and comprise an important piece of the broader construct of emotion socialization (Eisenberg, Cumberland, & Spinrad, 1998). Inherent in current measures of RTE is the idea that parents react to their children's negative emotional displays with either supportive (i.e., encouragement of emotion expression, problem-solving) or non-supportive (i.e., punishing expressions, minimizing children's emotional experiences) strategies. For example, preschoolers' negative reactivity was positively associated with mothers' elaborative discussions of past negative emotion, suggesting that mothers may respond by encouraging emotion expression when they perceive their children as higher in negative affect (Laible, 2004). Yet, no relation was found between infants' negative affect and mothers' responding with emotion talk, suggesting that an evocative process may not develop until the toddler/preschool years (Garrett-Peters et al., 2008). Regarding context effects, Eisenberg and colleagues' (1998) theorize that the context of children's displayed emotion influences broader emotion socialization practices, but few empirical studies exist (particularly in toddlerhood) of how the context of negative affect relates to RTE. Consistent with previous expectations, we expected that both supportive and non-supportive RTE would relate more strongly to negative affect in *low-threat* situations at this age.

Over time, mothers' RTE may influence children's development of internalizing problems through its effect on arousal and arousal regulation (Eisenberg, Cumberland, & Spinrad, 1998). Indeed, supportive RTE reduce young children's arousal, allowing them to learn self-regulation of negative emotion (Spinrad et al., 2007; Spinrad, Stifter, Donelan-McCall, & Turner, 2004), protecting against internalizing problems (Hastings et al., 2008; Rubin, Burgess, & Hastings, 2002). Conversely, non-supportive RTE relate to children becoming overaroused and to poorly regulating their emotions, putting them at risk for internalizing behaviors (Eisenberg et al., 1999; Hastings & De, 2008; Rydell, Thorell, & Bohlin, 2007). Given that depression and anxiety, the major components of internalizing problems, appear to result from ineffective regulation of sadness and fear specifically (Kovacs & Lopez-Duran, 2010), and that one important mean by which young children develop emotion regulation capacities is through their parents' reactions to emotions (Kopp, 1989), parental responses to sadness and fear were the major focus of the current study. Overall, we expected supportive RTE to have a negative relation and non-supportive RTE to have a positive relation to internalizing problems.

Relations between RTE and internalizing problems, however, may not only be parent-driven processes. Children's internalizing problems, as perceived by parents, may also elicit different RTE. In their heuristic model, Eisenberg et al. (1998) suggested that children's emotional competence (or lack thereof in the case of internalizing problems) feeds back to influence parents' RTE. Because mothers of more negative children display more supportive RTE such as emotion expression (Laible, 2004), it could be expected that internalizing problems would elicit supportive maternal RTE. Yet, Eisenberg and colleagues (1999) found that mothers' punitive RTE were predicted by their perceptions of their daughters' internalizing problems. However, children in that study were much older (6–12 years), and parents may react more negatively to older children who they expect to be better regulated. This relation would be less likely to occur during toddlerhood when children are still learning basic skills in the regulation of negative emotions. Overall, transactional influences

between RTE and internalizing problems would be expected, with perceptions of internalizing problems more strongly predicting supportive than non-supportive RTE in toddlerhood.

Few studies, especially in the toddler years when emotion socialization is particularly salient for later adjustment (Kopp, 1989; Spinrad et al., 2007), have examined individual differences in negative affect displays in various threatening contexts, or how context-specific affective displays relate concurrently and prospectively to internalizing problems and maternal RTE. Internalizing problems during toddlerhood appear to be predictive of later maladjustment (Mathiesen, Sanson, Stoolmiller, & Karevold, 2009). Understanding the specific contexts in which toddlers' negative affect and mothers' RTE relate to early internalizing problems will foster the development of appropriate prevention. Therefore, we examined the relations of toddlers' observed negative affect in high- and low-threat contexts to maternal perceptions of internalizing problems and to mothers' reported RTE for fear and sadness. Because out-of-context displays of distress are most related to risk for internalizing problems (Buss, in press) we predicted that negative affect displayed in low-threat situations would relate to maternal perceptions of internalizing problems and both supportive and non-supportive RTE more strongly than negative affect in high-threat situations.

Subsequently, we examined transactional relations between maternal perceptions of internalizing problems and RTE across one year of toddlerhood. Specifically, a *child-driven* model, in which age 2 internalizing behaviors were posited to predict age 3 RTE, and a *parent-driven* model, in which age 2 RTE were posited to predict age 3 internalizing behaviors, were tested against our hypothesized *reciprocal* model, in which internalizing at age 2 predicted RTE at age 3 and RTE at age 2 predicted internalizing at age 3 (Figure 1, top panel). We expected that internalizing problems would be predicted negatively by supportive and positively by non-supportive RTE. Finally, we hypothesized that maternal perceptions of internalizing problems would predict later supportive RTE.

Method

Participants and Procedure

One hundred and six 2-year-old toddlers (age: $M = 24.74$ months, $SD = 0.71$ months, $range = 23.93$ to 28.90 months; 45 female) were recruited from local birth records via mail ($n = 93$) and in person at Women, Infants, and Children (WIC) meetings ($n = 13$). Variables of interest did not differ among the two recruitment groups. On average, participants came from middle-class backgrounds but represented a range of socioeconomic status (Hollingshead Index: $M = 50.78$, $SD = 11.23$, $range = 17$ to 66). Ninety participants (85%) were European American, 5 (4.7%) were African American, 9 (8.5%) were Asian American, 1 (1%) mother described her child as bi-racial, and 1 (1%) mother described her child's ethnicity as "other" without providing more detail. Five participants (4.7%) described themselves as Latin American /Hispanic.

After scheduling a laboratory visit with mothers, they were sent a consent form and questionnaires to complete before the visit. At the laboratory, a female experimenter told the mother that her toddler would be participating in a variety of activities, always in her presence. The toddler then participated in these videotaped activities ("episodes"). Mothers were compensated and children received a small gift as appreciation for participation.

Data from two episodes theoretically designed to elicit little distress for most toddlers (Clown and Puppet Show), and two designed to elicit high distress (Robot and Spider), were used. Episodes were chosen from standardized protocols in the toddler temperament literature (Buss & Goldsmith, 2000; Nachmias, Gunnar, Mangelsdorf, Parritz, & Buss,

1996). In the Clown episode, a second female experimenter, dressed in a costume, interacted with the child in a friendly manner, and invited the child to participate in three 1-minute activities (blowing bubbles, catch, musical instruments). In the Puppet Show episode, the child watched two friendly animal puppets that talked with each other and invited the child to participate in three 1-minute activities (catch, fishing, sticker presentation). In the Robot episode, the child sat on the mother's lap in one corner of the room, and a 12-inch tall robot, controlled by remote from behind a one-way mirror, moved and randomly made noises in an opposing corner. After it stopped, the primary experimenter entered the room and asked the child to touch the robot with up to three prompts. In the Spider episode, the child again sat on the mother's lap, and in the other corner sat a large stuffed animal spider affixed to a hidden remote-controlled truck. From behind the mirror, an experimenter moved the spider towards and away from the child twice, pausing 10 seconds between movements. The experimenter then re-entered the room and asked the child to touch the spider with up to three prompts. Given a lack of carryover effects demonstrated previously (Kiel & Buss, 2010), episodes proceeded as follows: Robot, Clown, Puppet Show, and Spider, each lasting three minutes, with a two minute break in between episodes to allow the child's affect to return to baseline.

When children were approximately age 3, mothers were contacted regarding participation in a follow-up portion of the study. They were mailed a packet including a new consent form and questionnaires. Of 106 mothers who participated when children were age 2, 30 did not participate when children were age 3 (10 declined, 16 did not respond to repeated phone and mail contacts, 4 were sent but did not return measures when children were age 3 despite repeated phone calls to encourage follow-up participation). Four additional mothers returned the ITSEA, but not the CTNES.

Measures

Negative affect—Trained coders globally assessed toddlers' negative affect in each episode on a 5-point Likert-style scale (1 = *no display*, 2 = *one or two displays that may be mildly intense or brief*, 3 = *longer displays or an intense expression*, 4 = *several intense expressions or mild expressions that last almost the whole episode*, 5 = *many intense displays or displays that last the entire episode*). Specific behaviors that comprised displays of negative affect included negative facial expressions of fear and sadness, as well as negative vocalizations such as crying or statements about discomfort. A master coder double-scored approximately 20% of episodes, yielding good inter-rater reliability ($ICC = .84$). A composite score of negative affect in low-threat contexts was calculated as the mean of negative affect in the Clown ($M = 1.45$, $SD = 0.82$) and Puppet Show ($M = 1.29$, $SD = 0.55$) episodes ($r = .30$, $p < .01$). Negative affect in high-threat contexts was calculated as the mean of negative affect in the Robot ($M = 2.02$, $SD = 1.17$) and Spider ($M = 2.44$, $SD = 1.27$) episodes ($r = .51$, $p < .01$).

Internalizing behaviors—At age 2 and at age 3, mothers completed the 193-item Infant-Toddler Social and Emotional Assessment–Revised (ITSEA; Carter & Briggs-Gowan, 2000). Parents rated adjustment problems they observed in their children in the last month on a 0–2 scale (0 = *not true or rarely true*; 1 = *somewhat or sometimes true*; 2 = *very true or often true*). The current study used the Internalizing domain ($\alpha_{age2} = .79$, $\alpha_{age3} = .75$), comprised of the subscales of Depression (9 items; e.g., *Seems withdrawn*), General Anxiety (10 items; e.g., *Seems nervous, tense, or fearful*), Inhibition to Novelty (5 items; e.g., *Is shy with new adults*), and Separation Distress (6 items; e.g., *Demands a lot of attention*). The ITSEA reliably and validly measures early problem behaviors in children ages 12 to 36 months, and relates to independent evaluators' ratings of child behavior problems (Carter, Briggs-Gowan, Jones, & Little, 2003).

Responses to emotions—At both assessments, mothers completed the Coping with Toddlers' Negative Emotions Scale (CTNES; Spinrad, Eisenberg, Kupfer, Gaertner, & Michalik, 2004). Because we focused on internalizing behaviors, we used seven vignettes depicting fear or sadness, and included a mix of both common and novel situations that parents and children may encounter. For each vignette, mothers indicated the likelihood they would respond with one of six strategies on a 1 (*very unlikely*) to 7 (*very likely*) scale. Following Spinrad and colleagues (2007), we created a composite of "Supportive RTE" ($\alpha_{\text{age2}} = .83$, $\alpha_{\text{age3}} = .87$) as the mean of expressive encouragement (*Tell my child it is okay to feel sad about the loss*), emotion-focused reactions (*Comfort my child*), and problem-focused reactions (*Help my child figure out how to feel better*). A composite labeled "Punitive/Minimization RTE" ($\alpha_{\text{age2}} = .87$, $\alpha_{\text{age3}} = .72$) was computed as the mean of punitive (*Tell him to shape up or he won't be allowed to do something he likes to do*) and minimization (*Tell my child its nothing to get upset about*) strategies. The CTNES also contains subscales assessing maternal distress reactions and wish-granting RTE strategies that were not included in the current analyses.

Results

Attrition Data

Mothers who completed all age 3 questionnaires did not differ on demographics or age 2 variables from those who did not. Additionally, using the Missing Value Analysis in SPSS 16.0 (SPSS, 2008), Little's MCAR test was non-significant, $\chi^2(15) = 17.22$, $p = .31$, suggesting that missing data likely occurred at random. To avoid parameter bias and loss of power resulting from excluding participants with missing data (Howell, 2007; Widaman, 2006), we used the EM algorithm (with gender, age 2 variables, and available values of age 3 variables) to impute missing data.

Primary Analyses

Means, standard deviations, and intercorrelations for the dataset with imputed values are presented in Table 1. For comparison, intercorrelations for the sample of children with complete data are also shown. Correlations were consistent in magnitude and patterns of significance, with the following exception: the relation of age 2 internalizing behavior to age 3 supportive RTE was slightly larger and significant in the imputed data set ($r = .26$, $p < .01$) versus complete dataset ($r = .21$, $p = .07$). Imputed scores are used for primary data analyses. Notably, sample scores on the ITSEA reflect normative levels of internalizing behaviors, but did include a small portion of children (13% at age 2; 5% at age 3) scoring above the extreme 10th percentile cut-points provided in the ITSEA manual. As a manipulation check, we compared mean negative affect levels in low-threat episodes to mean levels in high-threat episodes using a paired-samples t test. As expected, negative affect was significantly greater in high-threat than low-threat episodes, $t(105) = 8.94$, $p < .01$.

Using the imputed dataset, we examined concurrent relations of toddlers' negative affect in high- and low-threat contexts to maternal perceptions of internalizing problems and to mothers' supportive and non-supportive RTE. Consistent with hypotheses, toddlers' greater observed negative affect, in low-threat contexts only, was related to mothers' concurrent perceptions of more internalizing behaviors (Table 1). Unexpectedly, negative affect was unrelated to mother-reported RTE regardless of context. Notably, however, mothers who perceived greater internalizing behaviors also reported that they typically engaged in more punishing/minimization *and* more supportive RTE when their children displayed fear and sadness. Table 1 also reports bivariate relations across time, with subsequent analyses described below testing specific longitudinal relations.

To address direction of effects, three competing path analyses of the prospective relations among negative affect, maternal RTE, and toddlers' internalizing behaviors were tested using AMOS 18.0 (Arbuckle, 1983–2009). Recall, a *child-driven* and *parent-driven* model were each tested against our hypothesized *reciprocal* model (Figure 1, top panel). Because punitive/minimization and supportive RTE were unrelated as per bivariate correlations both within and across timepoints, paths from one type of RTE at age 2 to the other type at age 3 were not estimated. Residual variances were allowed to covary within timepoint, but are not shown in Figure 1 for ease of presentation. Preliminary bivariate relations indicated that SES was inversely related to age 2 punitive/minimization RTE ($r = -.22, p < .05$), and children identified as minorities experienced greater age 2 internalizing behaviors ($t = 2.15, p < .05$) and age 2 punitive/minimization RTE ($t = 2.47, p < .05$) than Caucasian children. Thus, these specific covariate paths were included in tested models. Multiple indices were used to test overall model fit, with the following values indicating acceptable fit: non-significant χ^2 value, χ^2/df ratio < 2 , comparative fit index (CFI) $> .95$, and root mean square error of approximation (RMSEA) $< .08$ (Kline, 1998). We used chi-square difference tests to compare nested models.

Overall, our hypothesized reciprocal model fit the data well ($\chi^2[11] = 16.48, p = .12, \chi^2/df = 1.50$; CFI = .98; RMSEA = .07). The *parent-driven* model, ($\chi^2[13] = 22.68, p = .05, \chi^2/df = 1.74$; CFI = .97; RMSEA = .08), though more parsimonious, fit significantly less well than the *reciprocal* model, $\chi^2_{diff}(2) = 6.20, p < .05$. On the other hand, the *child-driven* model ($\chi^2[13] = 20.86, p = .08, \chi^2/df = 1.60$; CFI = .97; RMSEA = .08) did not fit significantly less well than the *reciprocal* model, $\chi^2_{diff}(2) = 4.38, p = .11$. However, the χ^2/df ratio and the Akaike Information Criteria, another index used to compare models (102.47 vs. 102.87, for *reciprocal* and *child-driven*, respectively), were both lower in the *reciprocal* model than the *child-driven* model. Although differences between these latter two models were small, the results do provide additional support for the hypothesized *reciprocal* model.

Standardized regression weights for the *reciprocal* model are shown in Figure 1, bottom panel.¹ Maternal RTE and internalizing behaviors showed significant and considerable stability over time. Regarding relations among these constructs, both parent-driven and child-driven effects were found. Specifically, mothers' use of more punitive/minimization RTE at age 2 predicted a significant increase in internalizing behaviors at age 3 (i.e., parent-driven effect). Supportive RTE at age 2 were unrelated to change in internalizing symptoms across time. Conversely, toddlers internalizing symptoms at age 2 predicted an increase in mothers' supportive RTE at age three (i.e., child-driven effect). Age 2 internalizing behaviors were unrelated to change in punitive/minimization RTE.

Finally, indirect effects from age 2 negative affect to age 3 internalizing behaviors and RTE were tested using bias-corrected bootstrapping methods with 500 bootstrapped samples and 95% confidence intervals (MacKinnon, Lockwood, & Williams, 2004). No significant indirect effects emerged from age 2 displays of negative affect in low-threat situations to either type of RTE at age 3 (indirect effects ranged from $\beta = .02$ to $\beta = .14$, all 95% CI included 0). A significant indirect path from negative affect to age 3 internalizing behavior mediated through age 2 internalizing behaviors ($\beta = .19, p < .01, 95\% \text{ CI} = .09, .30$) did

¹The reciprocal model was also tested using non-imputed data only ($N=72$). Results should be interpreted cautiously in light of the small ratio of participants to parameters estimated and research suggesting biased parameter estimates and lowered power when using listwise deletion (Widaman, 2006). Two notable differences emerged. The pathways from age 2 Pun./Min. RTE to age 3 internalizing behaviors, and from age 2 internalizing behaviors to age 3 supportive RTE were each significant in the imputed model, but non-significant in the non-imputed model. Examination of standardized betas and standard errors (SEs) indicated that for both cases, the effect was slightly attenuated and the SEs augmented, such that $p > .05$. Full analyses using the non-imputed dataset are available from the primary author.

emerge, suggesting that negative affect in low-threat contexts influences later problems via stability of problematic behaviors.

Discussion

Understanding how toddlers' emotional displays influence mothers' perceptions of problem behavior is important not only because maternal report is utilized widely in research and clinical practice, but also because these perceptions influence mothers' responses to emotions like sadness and fear. Consistent with previous research (Buss, in press; Buss et al., 2004), in our study negative affect in low-threat, but not high-threat, situations related to maternal report of internalizing behaviors. Maternal report and observation of emotions tend to align more closely when assessed in similar situations (Hane et al., 2006; Seifer, Sameroff, Barrett, & Krafchuk, 1994). Low-threat contexts in our study may more closely resemble situations in which mothers judge their children to display inordinate distress, whereas negative affect would be considered more normative and less salient in high-threat situations. This context-specific finding also has methodological implications. Researchers with limited resources interested in observed emotion processes as risks for internalizing problems may be best served using low-threat situations that, although lower in overall mean levels of elicited distress, seem to highlight individual differences relevant to maladjustment.

Contrary to hypotheses, observed negative affect at age 2 was unrelated to mothers' reports of RTE for fear or sadness, nor did an indirect effect emerge from negative affect to RTE through internalizing behaviors. This lack of a relation may be partly explained developmentally. Whereas displayed negative affect has been linked to mothers' emotion talk in three to five year olds (Laible, 2004), a similar relation has been tested but not found in infants (Garrett-Peters et al., 2008). Ideally, observation of negative affect at age three would have allowed us to better answer questions about potential developmental processes. Alternatively, this null result may reflect our methodology, again highlighting the importance of context. Our episodes were likely novel for toddlers, whereas the CTNES assesses reactions to everyday stressful events. How mothers respond to their toddlers' everyday emotional experiences may differ from their responses when context novelty varies.

Somewhat surprising given other work suggesting a modest inverse relationship (Spinrad et al., 2007), mothers' punitive/minimization and supportive RTE were unrelated to each other. Yet, *both* RTE were positively associated with internalizing behaviors when toddlers were age 2. Whereas mothers' punishing and minimizing RTE have been linked with internalizing behaviors (Eisenberg et al., 1999), supportive RTE have actually been found to buffer maladjustment (Hastings et al., 2008; Rubin et al., 2002). Taken together, it may be that mothers who are more reactive (for better or worse) have children who display more internalizing problems. Alternatively, these results also suggest the possibility of two distinct groups of children scoring high on reported internalizing behaviors: those with mothers likely to use punitive/minimization practices and those likely to respond with supportiveness. Future work is needed to identify characteristics that might moderate such relationships (e.g., maternal warmth, mothers' own regulation of or beliefs about emotion, the discrete types of negative emotions that elicit maternal responses to begin with). Our transactional model, however, elucidated the nature of this somewhat curious effect further, with results suggesting both parent- and child-driven effects regarding the interplay of RTE and toddlers' internalizing behaviors.

A parent-driven effect emerged such that mothers who responded to their toddlers' emotions in punishing or minimizing ways had toddlers who increased in internalizing behaviors over

time. Toddlers receiving adverse reactions from parents when expressing negative affect may learn to suppress emotions (Eisenberg et al., 1999) and fail to regulate their arousal (e.g., Eisenberg et al., 1999; Hastings & De, 2008). When placed in emotionally arousing situations, these young children are likely to display emotions in dysregulated ways such as by withdrawing or crying, which mothers appear to perceive as problematic.

Child-driven processes also emerged. Mothers' perceptions of their toddlers' internalizing behaviors at age two predicted increased supportive RTE over time. Although we assessed RTE and internalizing behaviors broadly, our findings are consistent with micro-level studies showing that toddlers higher in distress are more likely to use mother-oriented, support-seeking strategies to reduce negative emotionality in distressing situations (e.g., Buss & Goldsmith, 1998; Moore & Calkins, 2004). Mothers who perceive high levels of child distress may feel compelled to become more encouraging and problem-focused when their child displays sadness or fear. Despite this elicitation of supportive behavior, our data did not suggest that supportive RTE are predictive of decreased internalizing behaviors over time, as theory suggests (e.g., Eisenberg et al., 1998).

Future research should address our study's limitations. First, observing mothers' verbal and nonverbal reactions in contexts similar to our study's episodes would potentially reveal associations between RTE and context-varying negative affect and provide a more robust test of relations to internalizing and RTE by eliminating mono-method bias. Similarly, negative affect at age 3 was not observed, preventing us from testing if socialization strategies predicted change in displayed emotions. A third data-point would have provided the strongest test of transactional influences. Second, low-threat contexts were social in nature, but high-threat episodes were not, leaving open the possibility that the former may have elicited social inhibition whereas the latter may have elicited inhibition in response to the stimuli's sensory aspects. Third, the ratio of our sample size to parameters estimated in our path models was just above the recommended lower bound (e.g., Kline, 1998). Testing similar models with larger samples in the future is warranted. Finally, despite efforts to recruit an ethnically-diverse sample, we did not have the power to test ethnicity as a moderator, despite existing evidence that African-American parents and European-American parents may respond to emotions differently (Garrett-Peters et al., 2008).

Overall, our study provided evidence that the context in which toddlers display negative affect is important and may influence mothers' perceptions of internalizing behaviors. Further, reciprocal influences of toddlers' internalizing behaviors with distinct RTE were identified. Results add to a growing body of literature implicating the role of mothers' emotion socialization in the interplay between their children's emotion experiences and broader maladaptive outcomes.

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Figure 1.

Top panel shows proposed reciprocal model of displayed affect, maternal responses to emotion, and toddler internalizing behaviors. Paths labeled A were constrained to zero to test the parent-driven model, whereas those labeled B were constrained to zero to test the child-driven model. Bottom panel shows standardized regression coefficients for reciprocal model. Dotted paths are non-significant. With age 2 variables in the model, age 3 variables can be interpreted as change over time. The only significant indirect effect that emerged was from NA to Age 3 ITSEA via age 2 ITSEA ($\beta = .19, p < .01, 95\%CI = .09, .30$). NA = Negative Affect. CTNES = Coping with Toddler's Negative Emotion Scale. Pun./ Min. = Punitive / Minimization. ITSEA = Infant-Toddler Social and Emotional Assessment – Internalizing Behaviors. * $p < .05$. ** $p < .01$.

Table 1

Intercorrelations, Means, and Standard Deviations of All Study Measures

Age 2	Age 2				Age 3			
	1.	2.	3.	4.	5.	6. ^a	7. ^a	8. ^b
1. NA in Low-Threat	--	.38**	.12	.16	.33**	.07	.18	.19
2. NA in High-Threat	.38**	--	.05	-.03	.06	-.05	.02	-.02
3. Support. RTE	.12	.05	--	.06	.19*	.74**	-.15	.10
4. Pun./Min. RTE	.16	-.03	.06	--	.19*	-.09	.69**	.27*
5. Internalizing Behaviors	.33**	.06	.19*	.19*	--	.21	.14	.50**
Age 3								
6. Support. RTE	.06	.02	.79**	-.02	.26**	--	-.21 ^a	.07 ^a
7. Pun./Min. RTE	.09	-.05	-.05	.76**	.05	-.15	--	.16 ^a
8. Internalizing Behaviors	.18	.02	.15	.27**	.57**	.15	.16	--
Using Non-Missing Data								
Mean	1.37	2.24	5.78	2.54	0.54	5.88	2.58	0.47
SD	0.56	1.06	0.71	0.76	0.23	0.70	0.66	0.21
Using Imputed Data								
Mean	1.37	2.24	5.78	2.54	0.54	5.83	2.55	0.48
SD	0.56	1.06	0.71	0.76	0.23	0.65	0.61	0.19

Note. Correlations using imputed values for missing data are below the diagonal (N=106). Correlations using all available non-missing data (i.e., pairwise deletion) are above the diagonal (unless noted otherwise, N = 106). NA = Negative Affect. Support. = Supportive. Pun./Min. = Punitive / Minimization.

^a For correlations above diagonal that include age 3 Supportive RTE or age 3 Punitive / Minimization RTE, N = 72

^b For correlations above diagonal that include age 3 Internalizing Behaviors, N = 76

* $p \leq .05$.

** $p \leq .01$.