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Mothers' Expressed Emotion and Narrative Coherence: Associations with Preschoolers' Behavior Problems in a Multiethnic Sample

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Abstract This study integrated two views on parents' narratives regarding their child, the psychiatric model of expressed emotion (EE) and the attachment model of narrative coherence (NC), to examine common and unique associations of maternal EE and NC with preschoolers' behavior problems across families from varied ethnicities. The five minute speech samples (FMSSs) of 212 Hispanic (59.9 %), Black (18.9 %), and White (21.2 %) mothers were evaluated using Magana-Amato (Manual for coding expressed emotion from the five minute speech sample: UCLA family project, UCLA, Los Angeles, 1993) FMSS-EE coding protocol and a novel FMSS-NC coding system. Preschoolers' behavior problems were assessed with both maternal and observer reports. Across ethnic groups, EE positive comments were related to mother-ratings of fewer behavior problems, whereas NC was associated with observer-ratings of fewer behavior problems. EE negative comments were associated with mother-ratings of more behavior problems, but only among White and Black mothers and not among Hispanic mothers. These findings illustrate the merits of integrating semantic and organizational dimensions of mothers' narratives to understand children's behavioral adjustment. Implications for research and practice are discussed with an emphasis on applications for developmentally and culturally sensitive work with families of preschoolers.

Keywords FMSS expressed emotion · Coherence · Behavior problems · Ethnicity · Preschool

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Introduction

Preschoolers' behavior problems often persist into adolescence (Campbell 1995; Mesman et al. 2001) and predict other difficulties, such as academic and social problems (Qi and Kaiser 2003). Therefore, efforts to elucidate factors underlying preschoolers' behavioral adjustment are of theoretical and practical importance. Parents' representations of their preschooler, as reflected in their narratives regarding the child, presumably guide the affective quality of the parent–child relationship and shape the emergence and maintenance of child behavioral adjustment (Caspi et al. 2004; Oppenheim 2006). As such, asking parents to narrate about their offspring is common in family research and practice (see Fiese and Spagnola 2005 for review). Yet there is no consensus regarding which specific features of the narrative (and their corresponding representations) are most strongly related to preschoolers' behavioral adaptation. The psychiatric model emphasizes the affective content of parental narratives via expressed emotion (EE; Hooley 2007), whereas attachment theory highlights the salience of parents' narrative coherence (Oppenheim 2006) for understanding child adjustment.

The concept of EE originated in adult psychiatry to assess the emotional content of caregivers' narratives about a relative with mental illness. As assessed in the context of the five minute speech sample (FMSS; Magana et al. 1986), which prompts caregivers to describe their relationship with the patient for 5 uninterrupted minutes, high EE characterizes narratives that are critical (i.e., communicating dislike or disapproval) or emotionally overinvolved (i.e., communicating overprotection or exaggerated positivity). EE presumably reflects caregivers' attributions regarding the patient, which in turn, guide their behavior towards the patient (Barrowclough and Hooley 2003).

Thus, EE is thought to capture the emotional climate of the relationship, with high EE related to critical or enmeshed interactions, which in turn increase patients' arousal, symptoms, and relapse risk (Hooley 2007).

In the past decade, developmental and pediatric researchers have begun to examine the developmental implications of EE in the narratives of parents of young children. As with adults, parental criticism is thought to reflect negative parental attributions, guide maladaptive parenting behaviors, and contribute to children's emotion dysregulation and behavior problems (Wamboldt et al. 2000). However, affective content that is considered emotionally overinvolved and maladaptive in the context of parenting adult offspring may be developmentally appropriate in the context of parenting young children. Themes that reflect overprotectiveness in a relationship with an adult may indicate healthy emotional support when parenting a young child. Similarly, a high number of positive comments and willingness to do anything for one's child, which are considered exaggerated positivity in the context of parenting an adult, may reflect normative parental affection and warmth when parenting a young child, and may contribute to improved child adjustment (Peris and Baker 2000; Wamboldt et al. 2000). Thus, the psychiatric categorization of high versus low criticism and emotional overinvolvement in adult research has been supplanted by indices of negativity and positivity in developmental research with children (Daley et al. 2003).

This developmental conceptualization of EE is well supported from infancy to adolescence (e.g., Gravener et al. 2012; Sonuga-Barke et al. 2009). Evidence suggests that emotional overinvolvement is a low base rate phenomenon (e.g., Delvecchio et al. 2013; Kershner et al. 1996) that is not significantly related to the quality of parent–child interaction or to child behavior problems (Christiansen et al. 2010; McCarty et al. 2004; Peris and Baker 2000; Wamboldt et al. 2000). However, more EE positive comments and fewer EE negative comments relate to more responsiveness and less negativity from parents during observed parent–child interactions (Daley et al. 2003; McCarty et al. 2004; Scott et al. 2011), as well as to fewer behavior problems among preschoolers (Baker et al. 2000; Christiansen et al. 2010; Kim-Cohen et al. 2004), even after controlling for prior behavior problems (Caspi et al. 2004; Odgers et al. 2012). In line with prior studies of EE, the current investigation of mother-preschooler dyads evaluated mothers' positive and negative comments in the FMSS.

Attachment theorists also view parents' narrative affective content as reflecting their attributions regarding the child. However, attachment theory suggests that, relative to affective content, parents' organization of the narrative, namely narrative coherence (NC), will be more strongly related to parenting and child adjustment because it reflects information processing rules that guide the formation, storage, and retrieval of relational attributions (Bowlby 1969/1982; Hesse 2008). Parents who process information about their preschooler openly and free from defense will construct complex yet integrated attributions regarding the child, which are accessible to consciousness and responsive to real-time feedback during parent–child interactions. These parents tend to construct *coherent* narratives about their child that are clear, consistent, multifaceted, and believable. Importantly these parents maintain their coherence when relating not only to positive but also to negative features of the child or the relationship (i.e., expressed emotion). The same information processing that contributes to NC underlies accurate interpretation of the child's signals and supports sensitive parenting (Main et al. 1985) thereby facilitating preschoolers' behavioral adjustment (Erickson et al. 1985). In contrast, parents who defend against difficult feelings about the child may produce incoherent narratives that are inconsistent, meager and emotionally disengaged, or unilaterally idealizing or rejecting. These defensive processes may underlie inaccurate interpretations of the preschooler's signals and insensitive caregiving that undermines preschooler's behavioral adaptation (Bretherton and Munholland 1999; George and Solomon 1996; Greenberg et al. 1993).

Employing extensive semi-structured interviews, prior studies have shown that parents' NC when narrating about their caregivers (i.e., the Adult Attachment Interview, AAI; Main et al. 2003) or their child (e.g., the Insightfulness Assessment, IA; Koren-Karie and Oppenheim 2004; The Working Model of the Child Interview, WMCI; Zeanah et al. 1996) relates to sensitive caregiving (e.g., Korja et al. 2010; Schechter et al. 2008; Slade et al. 1999; Sokolowski et al. 2007) and fewer preschooler behavior problems (Greenberg et al. 1993; Oppenheim et al. 2004). Moreover, AAI studies indicate that parents' NC predicts child outcomes beyond parents' descriptions of their caregivers as loving or rejecting (Pearson et al. 1994; Phelps et al. 1998). Thus, although EE and NC may be modestly related, as when a narrative with high frequencies of positive comments may be unilaterally idealizing and a narrative with high frequencies of negative comments may be unilaterally rejecting, and thus less coherent (Oppenheim 2006), attachment literature suggests that parental NC may be incrementally important for understanding preschoolers' behavioral adjustment beyond EE.

Because the EE and NC literatures developed in parallel, EE studies have not assessed NC, and attachment studies have examined NC in isolation (Oppenheim et al. 2004), or with idiosyncratic content scales, rather than EE (Pearson et al. 1994; Phelps et al. 1998). Thus, the first goal of this study was to examine both maternal EE and NC to

elucidate the common and unique associations of maternal EE and NC with preschooler behavioral adjustment.

The second goal of this investigation was to address another limitation of the extant literature, namely the dearth of research on EE in non-White families of young children. Maternal NC may be robust to cultural influences because it reflects universal features of human language and communication (Bakermans-Kranenburg and van IJzendoorn 2009). Previous research using the WMCI or AAI supports the cultural validity of NC (Bakermans-Kranenburg and van IJzendoorn 2009), including for Mexican–American (Howes et al. 2011), Dominican–American (Schechter et al. 2008), and African-American parents (Schechter et al. 2008; Sokolowski et al. 2007; Teti et al. 2008).

In contrast, EE may vary across ethnic groups because culture frames norms about child behavior and parenting (Halgunseth et al. 2006). Cultural norms may influence both the form of EE, as when child behaviors that are praiseworthy in one culture are disavowed in another, and the meaning of EE, as when expressions of rejection in one culture may connote caring and nurturance in another (Jenkins and Karno 1992; Weisman de Mamani et al. 2007). EE research on families of adults with schizophrenia suggests that negative EE may be particularly toxic for offspring in White Western cultures that emphasize independence and an internal locus of control. However, rather than hostility or rejection, negative EE may connote cultural socialization in Hispanic families (e.g., educación; Halgunseth et al. 2006), or engagement and support in Black families (e.g., Rosenfarb et al. 2006). In support of these views, EE criticism does *not* predict psychiatric relapse among Hispanic (e.g., López et al. 2004, but see Aguilera et al. 2010, for exception) and Black adults (e.g., Tompson et al. 1995).

To our knowledge, only two studies have examined EE in minority families of young children. In a study of caregiver-*infant* dyads with a large Hispanic subsample, only EE positive comments, but not EE negative comments, correlated with observed parental sensitivity, though the researchers did not examine the moderating role of ethnicity (Kaugars et al. 2007). Another study of Black *school-aged* children did not find consistent relations between mothers' EE and children's behavior problems (Kwon et al. 2004). Moreover, because Kwon et al. (2004) used the adult designation of high versus low EE, rather than child-validated indices of positive and negative comments, it is not clear if and how positive and negative comments were related to the children's adaptation. Given these limited studies, we examined the consistency of the associations of maternal EE positive comments, EE negative comments, and NC, with child behavior problems across Hispanic, Black, and White families.

In the current study, we evaluated both EE and NC in the narratives of Hispanic, Black, and White mothers who completed a FMSS regarding their preschooler. EE was assessed using Magana-Amato's (1993) FMSS-EE protocol, as adapted for parents of young children by Wamboldt et al. (2000). To assess NC, we employed a novel FMSS-NC coding system that was adapted from the Insightful Assessment (Koren-Karie and Oppenheim 2004). Preschooler behavior problems were reported by mothers and observers.

Following the attachment literature, we hypothesized that both EE and NC would be associated with child behavior problems, but NC would explain variance in preschoolers' behavior problems beyond EE. Specifically, maternal NC was expected to relate to fewer preschooler behavior problems, after controlling for the predicted associations of more EE positive comments and fewer EE negative comments with fewer preschool behavior problems.

Second, we hypothesized that the link between maternal NC and fewer behavior problems would be consistent across ethnic groups, whereas the association between maternal EE negative comments and more preschooler behavior problems would be stronger for White mothers compared to Black and Hispanic mothers. In light of limited prior research, no specific hypothesis was formulated with respect to the consistency of relations between EE positive comments and preschooler behavior problems across ethnic groups.

Method

Participants

The sample was drawn from a study of representation and regulation among 250 preschooler-caregiver dyads. Participants in these analyses were 212 dyads where the caregiver was the child's biological mother who self-identified as Hispanic (59.91 %), U. S. born Black (18.87 %), or U. S. born White (21.22 %). The sample was representative of the diverse community from which it was drawn (U. S. Census Bureau 2011). The Hispanic subsample was primarily US-born (65.35 %) and largely consisted of mothers of Mexican heritage, with a subset of mothers who self-identified as of Puerto Rican, Central or South American heritage. Non-biological caregivers (e.g., foster mothers; 8.8 %), mothers self-identifying as multi-ethnic (3.6 %) or other ethnicities (e.g., Asian, Native American; 2 %), and two mothers (.8 %) who completed the FMSS while their spouse was in the interviewing room were excluded from these analyses.

The mean age of participating children (48.6 % female) was 49.14 months ($SD = 2.88$). Children's mean IQ score,

based on the block design and vocabulary subtests of the Wechsler Preschool and Primary Scale of Intelligence (Wechsler 2002), was 95.15 ($SD = 13.59$). Mothers' average age was 30.61 ($SD = 6.12$) and 82.5 % were married or cohabiting with a partner. Average family socioeconomic status (SES), based on the Hollingshead (1975) Four-Factor Index, was 31.76 ($SD = 12.32$), corresponding to clerical/sales work.

Procedure

Mothers were recruited via flyers in childcare centers. Exclusionary criteria included children who were developmentally disabled, outside 45–54 months of age, and/or not able to understand English. Dyads completed a 3-h laboratory assessment. Mothers' informed consent was obtained in writing. Mothers were paid $75 and children received a small bag of toys totaling $5. Procedures were approved by the University's Human Research Review Board.

Measures

The Five Minute Speech Sample (FMSS; Magana-Amato 1993)

Mothers were audio-recorded while speaking for five uninterrupted minutes about what kind of a person their child is, and how the two of them get along. The FMSS of 7 (3.3 %) mothers who responded in Spanish were translated to English for coding and back-translated by two native Spanish speakers. Transcripts were assigned double blinded serial codes to avoid recognition of the mothers.

Expressed Emotion (EE) Positive and Negative Comments

In accordance with the scoring procedures outlined by Magana-Amato (1993) and adapted by Wamboldt et al. (2000), FMSS were transcribed and each FMSS transcript was rated by 3–6 independent coders. After initial scoring, coders reviewed the FMSS audio recording to assess critical tone. All coders were blind to other information about the family and did not train to code NC. Only one of the 9 coders took part in maternal data collection, accounting for 5.66 % of cases. None of the coders took part in child data collection. Consistent with prior studies of young children (Daley et al. 2003), our analyses focused on *EE positive comments,* which were indicated by the number of positive comments (e.g., "s/he is very smart;" ICC = .97), and *EE negative comments*, which were indicated by the number of negative comments, including statements of criticism (e.g., "John is a lazy child;" ICC = .88) and milder dissatisfaction (e.g., "I'd rather he was not like that; "ICC = .69"), using a weighted composite (i.e., 2*criticism + 1*dissatisfaction; ICC = .88). This weighted score was based on the coding procedures of Magana-Amato (1993) and its recent adaptation to samples of young children (e.g., Gravener et al. 2012), in which dissatisfaction is considered a weak/borderline expression of criticism. Coders were trained to reliability (i.e., 85 % agreement for all categories across training cases) by an expert consultant. Reliability scores were similar or somewhat higher for Hispanic relative to non-Hispanic mothers. Differences across individually coded cases were resolved through discussion until consensus was reached.

Narrative Coherence

FMSS transcripts were coded for NC using scales that were adapted from the Insightfulness Assessment (IA; Koren-Karie and Oppenheim 2004; Sher-Censor et al. 2013). The IA is a lengthy semi-structured interview in which mothers view video clips of their interactions with their children and respond to questions tapping their ability to relate to the child's motives, thoughts, and feelings which underlie her/his behavior in the video clips. Although coherence is a central aspect of this coding system, and mothers are classified as insightful only if they are coherent, coherence is coded with respect to mothers' reflective explanations of their child's video-recorded behaviors. In contrast, the FMSS is not based on a specific set of observed child behaviors and does not directly invite mothers to reflect about the motives that underlie their child's behavior. Given differences in the structure and emphasis of these interviews, we adapted the IA by omitting three scales that were relevant only in the context of viewing video clips and/or to direct probing regarding child motivation (i.e., *Insight into child's motives*; *Openness/flexibility of thought* with respect to the information arising from the videotaped observations*; Anger* of the mother when viewing the video clips). We also adapted the content of the rating scales to fit general descriptions of the child and the relationship rather than specific explanations regarding discrete child behaviors in specific moments of the video clips. Finally, because FMSS transcripts are much shorter than IA transcripts, the rating scales were changed from 9 to 7 point scales. Importantly, all changes were made in consultation with the IA authors.

Transcripts were first coded on six 7-point rating scales including: (1) *Focus*—keeping the focus of the FMSS on the child and/or the mother–child relationship, which relates to the internal consistency aspect of coherence; (2) *Elaboration*—richness of details that facilitate a believable narrative; (3) *Separateness*—portrayal of the child as a unique person with characteristics and behaviors that are separate from the mother. Difficulties in separateness may

lead to a biased narrative that would not be multifaceted and believable; (4) *Concern/worry*—concerns about the child and/or maternal functioning. Thematic concern, even if related to the child, deviates from the required topic of describing who the child is, and diminishes NC; (5) *Acceptance/rejection*—acceptance of the full range of the child's behaviors and characteristics. Rejection undermines coherence because it reflects inflexibility in viewing alternative (potentially positive) explanations for child misbehaviors and weaknesses; (6) *Complexity*—vivid descriptions of the child that were balanced with both positive and negative features and supported by examples from everyday life, which contributes to the multifaceted and believability aspects of coherence.

Second, a global rating of coherence was provided on a seven-point *Narrative Coherence* scale that integrated the six previous scales to consider the organization, internal consistency, and authenticity of the whole narrative. The scale ranged from 1 (The mother doesn't cooperate with the interviewer and her FMSS does not provide a description of the child); to 3 (The mother provides a meager and unidimensional description of the child as all-positive or all-negative, or is overwhelmed with concern, or evidences significant difficulties in separateness from the child); to 5 (The FMSS is credible, the mother is not overwhelmed with concern, does not manifest significant problems in separateness from the child, and her statements are well-supported suggesting that she is accepting the child for better or worse. However, a small portion of the speech lacks coherence); to 7 (The caregiver constructs a comprehensive, integrative, and complex portrayal of the child and their relationship). Thus, in a coherent FMSS (i.e., a score of 5 or higher), the mother focused on the child as the subject of discussion to create a consistent, elaborated, complex, and believable narrative about the child. Incoherence could take several forms, but all shared a quality of incompleteness. Incoherent FMSS were characterized by difficulty keeping the child as the focus, inconsistent and contradictory descriptions of the child, failure to provide a sense of who the child is, one-sided descriptions of the child as all-positive or all-negative, and/or overwhelming concern or difficulties maintaining separateness between the mother and child.

The first author coded FMSS-NC, and 24 % of the cases were rated by a second coder. Coders were blind to other information, and not trained to code EE. The first coder did not take part in data collection. Of the cases that were rated by second coder, 25.42 % were collected by this same coder. Yet, as mentioned earlier, FMSS-NC was coded only from transcripts, and their numeric codes were double blinded to avoid recognition of the mother by coders. Scale reliabilities ranged from .53 (Focus) to .89 (Coherence), with an average ICC of .75. Only the Focus scale had an ICC below .71 and this likely reflected its low variability (i.e., all double coded FMSS were rated between 5 and 7). Reliability scores were comparable or somewhat higher for Hispanic relative to non-Hispanic mothers. Disagreements between coders were resolved through discussion until consensus was reached. Following previous NC studies (Oppenheim 2006), coherence scores were dichotomized to highlight the distinction between coherent and incoherent narratives and deemphasize individual differences within the coherent range (i.e., ratings of 5–7) and within the incoherent range (i.e., ratings of 1–4; Kappa = .83).

Child Behavior Problems

The Child Behavior Checklist for ages 1.5–5 (CBCL/1.5–5; Achenbach and Rescorla 2000) and the Test Observation Form (TOF; McConaughy and Achenbach 2004) evaluated mother- and observer-reported child behavior problems, respectively. The CBCL/1.5–5 is a widely used measure of child behavior problems across multiple dimensions (e.g., attention problems, aggressive behavior) that has been validated across cultures (Ivanova et al. 2010). Mothers were asked to rate the frequency of 99 child behaviors on the CBCL during the preceding 2 months from 0 (not true) to 2 (very true or often true). The TOF is a standardized form for rating observations of behavior, affect, and test-taking style during assessments with children aged 2–18. Immediately after the laboratory visit, the examiner rated the child's behavior on 125 problem items, using a four-point scale, from 0 (no occurrence) to 3 (definite occurrence with severe intensity). The developers of the TOF reported good internal consistency (alphas = .74 − .94), interrater reliabilities (*rs* = .42 − 73), and test–retest reliabilities (*r*s = .53 − 87) for both the subscales (e.g., anxious, oppositional) and total score in their validation sample (McConaughy and Achenbach 2004). Criterion validity was demonstrated by higher scores for clinically referred than non-referred children (McConaughy and Achenbach 2004). Moreover, there were no significant differences in behavior problem scores across ethnic groups in the diverse validation sample (McConaughy and Achenbach 2004). As in prior studies (McConaughy et al. 2010; Rettew et al. 2006), TOF scores were based on a single rater, namely the child examiner. The total behavior problems scores of the CBCL and the TOF were used in these analyses because prior work suggests that maternal EE and NC are related to both internalizing and externalizing behavior problems (e.g., Gravener et al. 2012; Oppenheim et al. 2004).

The Shipley Hartford Institute of Living Scale (SILS; Shipley 1940)

We assessed maternal receptive vocabulary using the SILS vocabulary subscale. The SILS is widely used as a brief

Table 1 Descriptive statistics for study variables by maternal ethnicity

	Maternal ethnicity			Univariate F/χ^2
	White ($n = 45$) *M* (SD)/n (%[a])	Black ($n = 40$) *M* (SD)/n (%[a])	Hispanic ($n = 127$) *M* (SD)/n (%[a])	Maternal ethnicity
Maternal EE positive comments	3.20 (2.72)	3.18 (2.33)	3.18 (2.72)	.001
Maternal EE negative comments	.23 (.44)	.36 (.66)	.27 (.57)	.59
Maternal NC				
Coherent	21 (46.67)	13 (32.50)	39 (30.71)	3.83
Incoherent	24 (53.33)	27 (67.50)	88 (69.29)	
Maternal reports of child behavior problems	31.76 (17.48)	38.02 (22.02)	37.74 (21.70)	1.48
Observer reports of child behavior problems	38.29 (35.46)	39.95 (39.49)	40.45 (32.21)	.07
Maternal receptive vocabulary	106.95 (6.57)	103.54 (7.41)	102.63 (7.21)[b]	6.13*
Child IQ	101.71 (15.59)	93.54 (13.64)[b]	93.33 (12.14)[b]	7.05**
Child age	49.89 (2.79)	48.58 (2.95)	49.19 (2.88)	1.21
Family SES	35.31 (13.98)	32.55 (13.25)	30.25 (12.32)	2.95
Maternal age	30.56 (6.30)	30.56 (4.97)	30.61 (6.12)	.003
Single parent status				
Married or cohabiting mothers	41 (91.11)	30 (75.00)	104 (81.89)	3.91
Single, divorced, separated, or widowed	4 (8.89)	10 (25.00)	23 (18.11)	

[a] Percentage within maternal ethnicity

[b] Significantly different from White

* $p < .05$; ** $p < .01$

assessment of intellectual ability, and has been employed in samples with Black and Hispanics adults (Bowers and Pantle 1998). Mothers were asked to circle a word with the same meaning as a target word from four possible options. Correct answers were summed over 40 items. The SILS was not administered to the seven mothers who completed the FMSS in Spanish.

The Wechsler Preschool and Primary Scale of Intelligence: III (WPPSI-III; Wechsler 2002)

Children completed the Vocabulary and Block Design subtests of the WPPSI-III, which yielded an abbreviated assessment of child IQ (Wechsler 2002). Verbal IQ was assessed using the Vocabulary subtest, including a receptive test in which children <48 months point at pictures to identify orally presented words, and an expressive test in which children ≥48 months verbally explain what orally-presented words mean. Performance IQ was assessed using the Block Design subtest in which children were asked to assemble blocks to match models.

Data Preparation and Missingness

All data were examined for nonnormality (Affifi et al. 2007). Maternal EE negative comments were positively skewed (skew = 2.87 and kurtosis = 8.70), and were square root transformed (skew = 1.82 and kurtosis = 2.04) for analyses. Missing data were estimated using the expectation maximization algorithm in SPSS 20.0 for maternal receptive vocabulary in the SILS (9.2 %) and behavior problems scores in the TOF (1.8 %) as supported by Little's (1988) MCAR test, χ^2 (123) = 105.56, $p = .87$.

Results

Means and standard deviations of study and background variables are presented in Table 1. As shown in Table 1, these variables did not vary significantly by maternal ethnicity, except for maternal receptive vocabulary, which was lower for Hispanic mothers compared to White mothers (Scheffe = 4.32, $p = .030$), and child IQ, which was lower for Hispanic and Black children compared to White children (Scheffe = −8.38, $p = .002$ and Scheffe = −8.17, $p = .019$, respectively). None of the variables differed significantly between males and females (all *p*s > .29).

The background and control variables were associated sporadically with study variables. Mothers of older children reported fewer child behavior problems, $r = -.17$, $p = .014$. Child IQ was associated with fewer observer-reported behavioral problems, $r = -.19$, $p = .005$. Higher SES was correlated with *fewer* EE positive comments,

Table 2 Bivariate correlations among study variables (N = 212)

Variable	1	2	3	4	5
1. Maternal EE positive comments	–	−.11	.09	−.29***	−.05
2. Maternal EE negative comments		–	−.21**	.05	−.08
3. Maternal NC[a]			–	−.08	−.18**
4. Maternal reports of child behavior problems				–	.25**
5. Observer reports of child behavior problems					–

** $p < .01$; *** $p < .001$

[a] Maternal NC is coded as follows: 0 = incoherent ($n = 139$; 65.6 %), 1 = coherent ($n = 73$; 34.4 %)

$r = -.14$, $p = .040$ and with fewer observer-reported behavioral problems, $r = -.14$, $p = .044$. Older mothers produced more EE negative comments, $r = .17$, $p = .015$. Single, widowed, and divorced mothers reported more child behavior problems ($M = 44.43$, $SD = 25.91$) than married or cohabiting mothers ($M = 34.85$, $SD = 19.47$), t (210) = 2.56, $p = .011$. Finally, coherent mothers had higher receptive vocabulary ($M = 105.42$, $SD = 7.82$) than incoherent mothers ($M = 102.82$, $SD = 6.86$), t (210) = 2.50, $p = .013$. Because maternal ethnicity was related to maternal receptive vocabulary, we further examined both as predictors of NC. A binary logistic regression analysis in which maternal ethnicity and her receptive vocabulary served as predictors of maternal NC, suggested that only maternal receptive vocabulary was significantly related to NC ($\beta = 1.05$, $p = .02$). Neither maternal ethnicity ($\beta = 1.03$, $p = .94$ for Hispanic versus non-Hispanic mothers; $\beta = .64$, $p = .33$ for White versus non-White mothers), nor the interactions between ethnicity and receptive vocabulary were significant ($\beta = 1.013$, $p = .87$ for receptive vocabulary * Hispanic versus non-Hispanic mothers; $\beta = .93$, $p = .50$ for receptive vocabulary * White versus non-White mothers). These preliminary analyses informed our decision to include child age, child IQ, family SES, maternal age, maternal marital status, and maternal receptive vocabulary as covariates in the regression analyses.

As shown in Table 2, bivariate relations among the study variables indicated that EE positive comments were not associated with EE negative comments, nor with NC. EE positive comments were associated with maternal reports of fewer child behavior problems, but not with observed child behavior problems. As expected, EE negative comments were related to incoherence. However, EE negative comments were not associated with mother- or observer-reported child behavior problems. NC was not associated with mother-rated child behavior problems, but was related to fewer observed child behavior problems. Mother-reported behavior problems were related to observer-reported problems.

Importantly, a post hoc comparison of relations between mother- and observer-reported child behavior problems by NC revealed significantly stronger concordance for coherent mothers, $r = .44$, n = 73, $p < .001$, than for incoherent mothers, $r = .17$, n = 139, $p = .04$ (Fisher's z = 2.04, $p = .04$). This finding speaks to the validity and putative accuracy of the reports of coherent mothers.

Next, we conducted two hierarchical regressions to examine the relations of EE positive comments, EE negative comments, and NC with preschooler behavior problems after accounting for covariates. These analyses evaluated our hypothesis that NC would explain variance in child behavior problems beyond EE, and explored if and how maternal ethnicity moderated these relations.

The regression analysis of mother-reported child behavior problems included in the first block the covariates that were related to mothers' EE, NC, or maternal reports of child behavior problems (i.e., family SES, child age, mother's age, single parent status, and mother's receptive vocabulary) as well as mother's ethnicity (i.e., Hispanic versus non-Hispanic; White versus non-White). The regression analysis of observer-reported child behavior problems included in the first block the covariates that were associated with maternal EE, NC or observers' reports of child behavior problems (i.e., family SES, child IQ, mother's age, and mother's receptive vocabulary) as well as mother's ethnicity (i.e., Hispanic versus non-Hispanic; White versus non-White). In both models, EE positive comments and EE negative comments were entered in the second block followed by NC in the third block. The fourth block included 6 interaction terms between the 3 FMSS variables (EE positive comments, EE negative comments, and NC) and the 2 ethnicity codes (Hispanic versus non-Hispanic; White versus non-White). Continuous predictors were centered to facilitate interpretation and reduce collinearity (Holmbeck 2002).

As shown in Table 3, only EE positive comments, but neither EE negative comments nor NC, were related to *maternal* reports of fewer child behavior problems in all ethnic groups. However, the interaction term between EE negative comments and mothers' Hispanic/non-Hispanic ethnicity was significant. Examination of the simple slopes (Schubert and Jacoby 2004) revealed that EE negative comments were associated with maternal reports of more behavior problems among non-Hispanic mothers (i.e., White and Black, $\beta = .27$, $p = .050$), but not among Hispanic mothers ($\beta = -.05$, $p = .535$).

As can be seen in Table 4, only NC, but not EE positive or negative comments, was associated with fewer *observer-*

Table 3 Regression results of mother-reported child behavior problems on EE, NC, and their interactions with maternal ethnicity (N = 212)

Variables in regression	β	ΔR^2
Block 1		.08*
SES	−.05	
Child age	−.18**	
Maternal age	.04	
Single parent status[a]	−.18**	
Maternal receptive vocabulary	.05	
Maternal ethnicity		
Non-Hispanic = 0; Hispanic = 1	.03	
Non-White = 0; White = 1	−.07	
Block 2		.08***
Maternal EE positive comments	−.29***	
Maternal EE negative comments	.04	
Block 3		.001
Maternal NC (0 = incoherent, 1 = coherent)	−.03	
Block 4		.02
EE positive comments * non-Hispanic/Hispanic	.05	
EE negative comments * non-Hispanic/Hispanic	−.25*	
EE positive comments * non-White/White	−.02	
EE negative comments * non-White/White	−.10	
Coherent/incoherent * non-Hispanic/Hispanic	.03	
Coherent/incoherent * non-White/White	−.01	
Total R^2	18*	
Final model	F (16, 195) = 2.74***	

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

[a] Single, divorced, separated, or widowed mothers = 0; married or cohabiting mothers = 1

Table 4 Regression results of observer-reported child behavior problems on EE and NC (N = 212)

Variables in regression	β	ΔR^2
Block 1		.05
SES	−.10	
Child IQ	−.17*	
Maternal age	−.08	
Maternal receptive vocabulary	.04	
Maternal ethnicity		
Non-Hispanic = 0; Hispanic = 1	−.001	
Non-White = 0; White = 1	.02	
Block 2		.01
Maternal EE positive comments	−.06	
Maternal EE negative comments	−.06	
Block 3		.03**
Maternal NC (0 = incoherent, 1 = coherent)	−.18*	
Total R^2	.09	
Final model	F (9, 202) = 2.19*	

* $p < .05$; ** $p < .01$

rated child behavior problems. The interaction effects between maternal FMSS variables and maternal ethnicity were not significant (not shown).

Discussion

As a period of rapid development and marked sensitivity to parental influence, the preschool years are of particular interest to researchers and practitioners seeking to understand and protect emergent patterns of behavioral adjustment. Despite modest effect sizes (Cohen 1992), our study contributes to these efforts through a novel integration of EE and NC models and an extension of these distinct approaches to a large, multiethnic sample of mother-preschooler dyads. We found that mothers' EE was related to their own reports of their preschoolers' behavior problems but not to observers' reports. In contrast, maternal NC was associated with observer-rated child behavior problems, but not with mothers' reports. Finally, interactive analyses revealed that EE negative comments varied in meaning across ethnic groups, whereas, EE positive comments and NC did not. Thus, although EE negative comments and NC were related because high rates of negative comments preclude a multidimensional description of the child, our study points to the importance of independently assessing both semantic (i.e., EE) and organizational (i.e., NC) dimensions of mothers' narratives to understand preschooler behavioral adjustment.

Our first hypothesis that NC would account for variance in child behavior problems beyond EE was partially supported because NC, but not EE, was associated with fewer observer-reported child behavior problems. This result strengthens and extends prior attachment research, which has documented links between NC and non-parental reports of child well-being (e.g., Oppenheim et al. 2004). However, extant attachment studies assessed narrative affective content using idiosyncratic coding scales and focused primarily on the associations between parental NC and parental sensitivity or child security of attachment (Oppenheim 2006; Vreeswijk et al. 2012). To our knowledge, the current study is the first to systematically evaluate both narrative affective content and coherence as related to child behavioral adjustment while employing an

independent content coding system (i.e., EE) that has demonstrable predictive validity for child adjustment (Caspi et al. 2004).

Narrating in an organized, consistent, and believable manner regarding the child presumably reflects a parent's capacity to flexibly access a full range of thoughts and feelings in relation to the child. Such information processing enables parents to interpret their child's cues accurately, and remain self-regulated, engaged, and responsive to their child, even in highly emotional situations (Main et al. 1985; Slade et al. 2005). Sensitive caregiving is vital to children's emergent sense of mastery and self-regulation (Cassidy 1994). Contradictory, one-sided, disengaged, and meager (i.e., incoherent) parental narratives are thought to reflect defensive processes, such as denial or distortion of thoughts and feelings regarding the child. These defensive processes might underlie parents' misinterpretations of their child's signals, poorer parental affect regulation, and inappropriate responsiveness to the child in day-to-day interactions. Thus, narrative incoherence may serve as a marker for problematic and defensive information processing that renders the parent more readily overwhelmed, intrusive, hostile, or withdrawn, particularly in highly emotional situations when the child's need for sensitive parenting is magnified (Benoit et al. 1997; Slade 2005; Zeanah and Benoit 1995). In this context, children might internalize their parents' defenses (Fonagy and Target 1997), learn to restrict or exaggerate their emotional expressions (Cassidy 1994), and develop behavior problems (Bates and Bayles 1988).

In support of our interpretation that coherent mothers more accurately perceive their preschooler's signals, post hoc comparisons of mother- and observer-reported child behavior problems as a function of NC revealed strong agreement between observers and coherent mothers, and only modest concordance between observers and incoherent mothers. Indeed, the surprising finding that mothers' NC was not associated with their own reports of child behavior problems may reflect the less accurate perceptions of incoherent mothers.

Although the CBCL and TOF assess child behavior in different contexts, the striking congruence between observer- and coherent mother-ratings speaks to the comparability of these measures in some families and suggests that discordance likely reflects an informant effect, rather than an artifact of the differential scope of the measures. This finding contributes to extant research on informant bias in the assessment of child behavior (De Los Reyes and Kazdin 2005; Seifer et al. 2004) by demonstrating that mothers' narrative incoherence may underlie at least some cross-informant discrepancies. Despite this provocative finding, more research is needed to assess the potential explanatory role of observed maternal sensitivity in mediating the relation between maternal NC and child behavior adjustment as rated by multiple informants, including parents, observers, and teachers. In addition, an important question for future studies is whether individual differences in NC indeed reflect information processing rules which are specific to the relationship with the child or whether they reflect a general trail-like cognitive ability of narrating coherently about any topic. Initial support for the interpretation of NC as a relationship specific construct comes from an AAI study in which adults' NC when narrating regarding early childhood experiences with their own parents did not relate to their NC when narrating about their employment experience (Crowell et al. 1996).

In support of prior assertions that narrative affective content reflects parental attributions regarding the child (Caspi et al. 2004), EE positive comments were related to mothers' reports of fewer child behavior problems, and EE negative comments were associated with increased child behavior problems as rated by Black and White, but not Hispanic, mothers. The absence of significant associations between maternal EE and *observer*-reported child behavior problems was unexpected. We are aware of four EE studies with community preschoolers that employed non-parental reports of child behavior problems. Baker et al. (2000) and Kim-Cohen et al. (2004) combined the reports of mothers and teachers, precluding evaluation of distinct relations with teachers. Caspi et al. (2004) and Tully et al. (2004) evaluated mother and teacher ratings separately. In these samples of more than 1,000 mothers, EE was related to teacher reports, but these links were substantially weaker than those with mother ratings. Additional research employing non-maternal reports of preschoolers' behavior problems is needed to clarify whether or not mothers' EE is a valid indicator of preschoolers' behavioral adjustment, beyond mothers' subjective perceptions.

Higher SES was unexpectedly associated with fewer maternal EE positive comments. We are aware of only one previous study that evaluated this association (Wamboldt et al. 2000). In this study, the link between SES and positive comments was not significant. Further examination of the association between family SES and maternal positive comments is needed to clarify if and how family factors shape maternal EE. Moreover, studies of other family background variables, such as child birth order, are needed to enhance our understating of the development of maternal EE and NC, as well as their relations with child adjustment.

In line with our second hypothesis, only the association between EE negative comments and maternal reports of child behavior problems varied with maternal ethnicity. Thus, our study extends prior works on White families and suggests that NC and EE positive comments may have the same developmental meaning across Hispanic, Black, and White families of preschoolers.

Our finding that EE negative comments were *not* related to Hispanic mothers' reports of child behavior problems is consistent with research by Kaugars et al. (2007), which did not find significant links between EE negative comments and parents' sensitivity toward their infants. However, although their sample included a large proportion of Hispanics, these authors did not explicitly test the moderating role of ethnicity. The current finding is also consistent with adult research showing that caregivers' EE negative comments were associated with relapse among White, but not Hispanic, patients (e.g., López et al. 2004). Together, these results raise concern about the validity of the EE negative comments construct for Hispanics.

The lack of significant association between EE negative comments and maternal report of child behavior problems among Hispanic mothers may be interpreted in three ways. First, the meaning of narrated negative comments may vary with culture. Criticism and dissatisfaction in the context of Hispanic families may not reflect parents' resentment or negative attributions regarding the child, and thus they may not relate to maternal reports of more child behavior problem. This interpretation echoes the literature on parents' controlling practices, which incorporates demands and restrictions placed on the child, as well as the parents' articulation of dissatisfaction with the child as intended to modify child behavior (Schaefer 1965). Research suggests that Hispanic parents in the U.S. are more authoritarian and less authoritative than European American parents (Darling and Steinberg 1993), and may exercise control to teach toddlers and preschoolers to internalize Hispanic cultural values (Halgunseth et al. 2006). In this cultural context, parental restrictions and the expression of dissatisfaction may not stem from a negative view of the child, but rather from normative socialization goals of the parent, which entail instilling the child with a sense of Hispanic culture and cultural values. Thus, parental control may occur without accompanying negative affect, may be viewed by both parent and child as a culturally normative socialization strategy, and may not be interpreted by the child as a rejection (Grusec et al. 1997; Halgunseth et al. 2006). As such, EE negative may not be consistently related to poor child outcomes in Hispanic families.

A second alternative is that parental criticism and dissatisfaction have the same meaning across ethnocultural groups, but culture moderates their effects. As suggested by adult EE researchers, in Hispanic families in which family ties (i.e., Familismo) are highly valued, a dearth of positive regard might be a stronger indicator of difficulties in the relationship than the presence of criticism (e.g., López et al. 2004).

Third, mothers from different cultural backgrounds may emphasize different aspects of child behavior and characteristics in their FMSS. It is possible that when criticizing or displaying dissatisfaction during the FMSS, White and Black mothers focused on behaviors, such as lack of independence, immaturity, or showing poor pre-academic performances (e.g., not sitting still, short attention span), which are similar to the behavior problems included in the CBCL. Hispanic mothers may have been more likely to criticize the child for behaviors that are not in line with Familismo (e.g., having too much distance from the family or not getting along with siblings), and which are not tapped by the CBCL items. Furthermore, behavior problems that are part of the CBCL, such as "does not want to sleep alone," "clings to adults or too dependent," even if characterizing the child and reported by Hispanic mothers on the CBCL, may have not have been mentioned in the FMSS and/or accompanied by negative affective comments. This latter interpretation deserves further attention in future studies focusing on cultural differences in the content of parents' speech (i.e., which personality and behavioral characteristic of the child and which features of mother–child the relationship are salient for mothers from difference cultures).

Given the unique nature of our Hispanic subsample, which was largely fluent in English, and the notable heterogeneity across this subsample with regard to country of origin, there is a need for additional research that includes non-English-speaking Hispanic participants and measures of acculturation, to further examine the meaning of negative EE for Hispanic mother-preschooler dyads. Given the significant cultural variability among Hispanic families (Calzada et al. 2012; Fuller and García Coll 2010; Halgunseth et al. 2006), future FMSS studies should include larger and more varied groups of Hispanic families, including those from Central and South American countries, to explore the developmental meaning of EE within each of these cultures.

The current study also sheds new light on the meaning of EE negative comments for Black families. EE researchers have suggested that expressions of criticism and dissatisfaction may connote involvement and care in Black families (Rosenfarb et al. 2006). Prior studies found that EE negative comments were not perceived as critical by Black adult patients and were not consistently related to the well-being of Black adults (e.g., Weisman et al. 2006). However, our results qualify these prior interpretations because EE negative comments *were* related to Black mothers' reports of *more* preschooler behavior problems. Additional EE studies on Black families of preschoolers and older children are needed to clarify the meaning of EE negative comments for Black families, particularly as it meaning may vary across the developmental continuum.

Finally, just as child behavior may be influenced by mothers' representations, so, too, might these constructs be influenced by child behavior (Yates et al. 2010). For

example, it could be easier for mothers to narrate coherently (i.e., to portray the child in a consistent and balanced manner) when the child is behaviorally-regulated. In contrast, when a preschooler exhibits more behavior problems, it might be more challenging for mothers to accept the child's difficulties and succeed in creating an integrated and balanced portrayal of the child that is not unduly influenced by the behavior problems. Our study builds on previous narrative research, which suggests that maternal representations influence child adaptation. For example, Caspi et al. (2004) found that maternal EE predicted an increase in child behavior problems above and beyond prior problems. Similarly, prospective relations were found between parents' NC assessed prenatally and children's subsequent adjustment (Benoit et al. 1997; Fonagy et al. 1991), and between maternal NC and a decrease in behavior problems of preschoolers who participated in a therapeutic preschool program (Oppenheim et al. 2004). Future studies employing longitudinal designs and parallel assessments of parental EE and NC, observed parental sensitivity, and child behavioral adjustment may clarify transactional relations that could not be examined here.

In conclusion, this investigation offers new insights and raise important challenges for future narrative research and practice with families of preschoolers. The FMSS-NC coding scheme is a valuable addition to our research armamentarium. Extant attachment NC measures (e.g., the AAI, Main et al. 2003; the Insightfulness Assessment, Koren-Karie and Oppenheim 2004) require lengthy interviews with cumbersome coding procedures, which preclude their widespread adoption in family research and effective translation to applied settings. Although the FMSS is far less nuanced than these measures, our data suggest that it elicits narratives that are rich enough to accommodate a reliable and meaningful assessment of NC. As such, the FMSS holds promise for researchers and practitioners who seek a timely, cost-effective, and culturally sensitive method for assessing parental NC.

Practitioners typically attend to parents' narrative content (e.g., the presenting complaint) to a greater degree than narrative organization. Our findings indicate that caution is needed when interpreting statements that appear to be critical or dissatisfied in the context of Hispanic families. Moreover, our results suggest that attention to both EE and NC is important. Through parents' affective content, we may learn how they perceive their child's behavioral adaptation, whereas parents' coherence may serve as a stronger indicator of the child's actual behavioral adjustment. Differing degrees of concordance between mother- and observer-reports among coherent versus incoherent mothers further suggests that a coherent narrative may reflect more realistic parental perceptions of the child. Thus, the present findings suggest that NC may serve as a relatively robust index of parents' narrative organization, probable parenting practices, and consequent child adjustment across cultures.

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