Meaning making in mothers' and children's narratives of emotional events

Robyn Fivush a, Jessica McDermott Sales a; Jennifer G. Bohanek b

a Emory University, Atlanta, GA, USA

b University of North Carolina, Chapel Hill, NC, USA

First Published on: 28 May 2008

To cite this Article: Fivush, Robyn, McDermott Sales, Jessica and Bohanek, Jennifer G. (2008) 'Meaning making in mothers' and children's narratives of emotional events', Memory, 16:6, 579 — 594

To link to this article: DOI: 10.1080/09658210802150681
URL: http://dx.doi.org/10.1080/09658210802150681

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: http://www.informaworld.com/terms-and-conditions-of-access.pdf

This article maybe used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.
Meaning making in mothers’ and children’s narratives of emotional events

Robyn Fivush and Jessica McDermott Sales
Emory University, Atlanta, GA, USA

Jennifer G. Bohanek
University of North Carolina, Chapel Hill, NC, USA

Narrative coherence and the inclusion of mental state language are critical aspects of meaning making, especially about stressful events. Mothers and their 8- to 12-year-old children with asthma independently narrated a time they were scared, frustrated, and happy. Although mothers’ narratives were generally more coherent and more saturated with mental state language than children’s narratives, for both mothers and children narratives of negative events were more coherent and contained more mental state language than narratives of positive events overall, and narratives of scary events contained more mental state language than narratives of frustrating events. Coherence appears to be multifaceted, in that the three dimensions of coherence coded, context, chronology, and theme were not strongly interrelated within narratives of the same event, but use of mental state language, including cognitive-processing and emotion words, appears to be more integrated. Moreover, while thematic coherence seems to be a consistent individual narrative style across valence of event being narrated, mental state language appears to be a consistent style only across the two stressful event narratives. Finally, and quite surprisingly, there were virtually no relations between mothers’ and children’s narrative meaning making.

Narratives are the way in which humans make sense of the world (Bruner, 1990; McAdams, 2001). It is as we create organised, explanatory accounts of actions in the world, which are integrated with subjective thoughts and emotions about those actions and outcomes, that we create meaning from these experiences. Especially in the case of negative and stressful events, which create a problem to be solved, the ability to construct a coherent narrative that allows for the expression and regulation of thoughts and emotions may be a critical aspect of meaning making (Bartlett, 1932; Fivush & Baker-Ward, 2005; Pennebaker, 1997). Thus the major objectives of this research were to examine meaning making through narrative coherence and the inclusion of mental state language in mothers’ and children’s narratives of stressful and positive events.

A great deal of research has examined the amount and accuracy of recall for stressful events and, although there are many nuances to these findings, the general conclusions are that children and adults recall more overall about stressful events than neutral events (for reviews see Christianson, 1992; Fivush, 1998; Fivush & Sales, 2003; Pezdek & Taylor, 2001; Reisberg & Hertel, 2003). However, there is also some suggestion that as level of stress increases, amount of recall may decrease. For example, children recall more about a very stressful, highly invasive catheterisation...
procedure, a voiding cystouretherogram (VCUG), than about a less stressful well-doctor visit (Ornstein, 1995). However, those children who were rated by observers as more stressed by the VCUG procedure recalled less about the event than less-stressed children (Merrit, Orstein, & Spicker, 1995). However, those children who were rated by observers as more stressed by the VCUG procedure recalled less about the event than less-stressed children (Merrit, Orstein, & Spicker, 1995).

Similarly, Bahrick, Parker, Fivush, and Levitt (1998) studied children’s memories of Hurricane Andrew, a devastating storm during which many children experienced their houses literally being blown apart while they and their families were inside. Preschool children experiencing the highest levels of stress, as ascertained by amount of damage to the house, recalled less information overall than children experiencing moderate stress, although both moderately and highly stressed children recalled more than children experiencing low stress. Six years later the children who experienced the highest levels of stress still recalled less in free recall than moderately stressed children, although there were no differences in cued recall, suggesting that more highly stressed children remembered as much information but were either unable or unwilling to retrieve this information on their own (Fivush, Sales, Goldberg, Bahrick, & Parker, 2004).

Interestingly, mothers of these children were also interviewed about the storm and, similar to children, those experiencing low stress recalled less than those experiencing higher levels of stress. However, those experiencing the highest levels of stress showed decreased recall, but only for information pertaining to internal states (Parker, Bahrick, Fivush, & Johnson, 2006). Similarly, Fivush, Edwards, and Mennuti-Washburn (2003) examined college students’ narratives of the 9/11 disaster and found that individuals who knew someone who was killed, and therefore were presumably highly stressed by the attacks, included fewer cognitive-processing and emotion words in their narratives of the event than individuals who did not know someone who was killed. Internal state language, especially words focused on emotion and cognitive processing (e.g., think, understand, realise) are indicative of efforts after meaning (Fivush & Baker-Ward, 2005; Fivush, Bohanek, Marin, & Sales, in press). Inclusion of this kind of language in recall indicates that the narrator is trying to make sense of the event through integrating what happened in the world with a subjective perspective on one’s thoughts and emotional reactions (Fivush & Haden, 2005; Fivush & Nelson, 2006). Thus decreasing use of this kind of language at high levels of stress may indicate a disruption in the meaning-making process.

Indeed, for recall of Hurricane Andrew the children experiencing the highest levels of stress also included fewer cognitive-processing and emotion words in their initial recall, but 6 years later these children actually included more internal state language than children who had initially been less stressed, suggesting that difficulty in creating meaning in the weeks following the event led to an ongoing effort after meaning as time passed (Sales, Fivush, Parker, & Bahrick, 2005). Similar to children experiencing a natural disaster, Wolitzky, Fivush, Zimand, Hodges, and Rothbaum (2005) found that paediatric cancer patients undergoing a painful medical procedure who were more stressed included less internal state language in their subsequent narratives of the procedure than children who were less stressed. Likewise, Peterson and Biggs (1998) examined children’s narratives of an injury requiring emergency room treatment. Again, those children who were more highly stressed by the event showed decreased use of evaluative devices in their narratives. While they are a broader category than internal state language per se, narrative evaluations include thoughts and emotions, again suggesting that higher levels of stress might disrupt the meaning-making process. In line with this interpretation, more highly stressed children also told less-coherent narratives than less-stressed children. Coherence, broadly defined, captures the extent to which the narrative is told in a meaningful chronological order of actions that maintains topic and is successfully resolved (Peterson & McCabe, 1982). Thus coherence is another critical aspect of meaning making in that it reflects the extent to which the narrator is able to explain and understand how and why the event unfolded as it did.

One limitation of these studies is that only stressful events were considered. Certainly stressful events create a problem to be solved, and therefore may lead to greater efforts after meaning than neutral or positive events. On the other hand, it is also possible that highly arousing emotions, whether negative or positive, would lead to changes in processing (Hamann, Ely, Grafton, & Kilts, 1999) resulting in a greater effort after meaning. Adults’ narratives of negative events tend to be longer, more vivid, to contain more passive sentences, and be more structurally complex than narratives of positive
events (Bohanek, Fivush, & Walker, 2004; Peace & Porter, 2004). Specific to meaning making, Bohanek et al. (2004) compared adults’ narratives of events varying by valence (positive versus negative) and intensity (moderate versus intense). Negative narratives contained more negative emotion and more cognitive-processing words than did positive narratives, suggesting greater efforts after meaning. However, the intensely positive narratives were the most coherent. Interestingly, individuals showed little consistency in their use of cognitive-processing or emotion words across the four events narrated, suggesting that meaning making may be more dependent on the type of event being narrated than on individual narrative style.

In the developmental literature there have only been a handful of studies that have examined children’s narratives of positive and negative events. Fivush, Hazzard, Sales, Sarfati, and Brown (2002) found that negative narratives of 5- to 12-year-old children growing up in a violent inner-city neighbourhood contained more internal state language and were more coherent than the positive narratives. Similarly, Baker-Ward, Eaton, and Banks (2005) asked children who had either won or lost a soccer championship to recall the game—this is a lovely control as all children were recalling the same event, but for some it was positive and for some it was negative. Children who lost the game included more cognitive-processing language in their narratives than did children who had won, suggesting that a negative valence elicits more efforts after meaning than the same event with a positive valence. Peterson and Biggs (2001) expanded the simple dichotomy of positive and negative event narratives, and asked children to narrate a time when they were happy, surprised, and angry. Surprise is an ambiguous emotion in that it often comprises both positive and negative components. Peterson and Biggs found that children used more emotion words and more narrative evaluations when narrating the angry event than either surprise or happiness, suggesting that clearly negative emotions may create a greater need to engage in meaning making than positive or ambiguous emotions.

Overall, the research with both children and adults is consistent in finding more internal state language in narratives of negative than of neutral or positive events, although there is some suggestion that at very high levels of stress internal state language may decrease. In terms of coherence, the findings are mixed. However, an issue in comparing across studies is differences in methodology. Some studies directly compare positive to negative event narratives, whereas others ask individuals who vary naturally on the level of stress experienced to recall the same event. The first approach controls for narrative style, in that all participants recall events varying by valence (and sometimes intensity as in the Bohanek et al., 2004, study) whereas the second methodology controls for the event recalled, in that all participants recall a similar event but vary in the level of experienced stress (or sometimes valence as in the Baker-Ward et al., 2005, study). In order to gain a more complete understanding of narrative meaning making it is necessary to compare the same individuals narrating similar events that vary by level of stress experienced as well as valence.

Moreover, a developmental perspective focuses on the process by which individuals may come to engage in meaning making. There is a substantial body of research which demonstrates that children are learning how to narrate their past experiences in adult-guided reminiscing (for reviews see Fivush, Haden, & Reese, 2006; Nelson & Fivush, 2004). More specific to the issues discussed here, mothers who use more internal state language in co-constructing narratives about the past with their preschool children have children who, by the end of the preschool years, come to use more internal state language in their own personal narratives (Fivush & Haden, 2005, Fivush & Nelson, 2006; Rudek & Haden, 2005). In terms of coherence, mothers who use more contextual information in their co-constructed narratives, placing the event in time and place, have preschool children who tell more contextualised narratives 1 and 2 years later (Haden, Haine, & Fivush, 1997; Peterson & McCabe, 1992, 1996), and mothers who use more causal terms, linking actions together in a coherent sequence, have preschool children who independently use more causal terms a year later (Fivush 1991; Peterson & McCabe, 1992).

Mothers also differ in how they co-construct narratives about positive versus negative events. When talking about negative events mothers use more causal language, suggesting a greater focus on providing a coherent explanatory framework for negative than positive events (Ackil, Van Abbema, & Bauer, 2003; Sales, Fivush, & Peterson, 2003). But it also matters what kind of negative event is being recalled. In a study
examining children with asthma and their mothers, co-constructed narratives of an everyday stressful event, such as a parent-child conflict, included more causal language than co-constructed narratives of a highly stressful life-threatening asthma attack (Sales & Fivush, 2005), again suggesting that extremely high levels of stress may disrupt the meaning-making process. In terms of internal state language, the findings are complicated. Sales et al. (2003) found that mothers include more emotion overall in co-narrations of positive events but specifically more negative emotion in co-narrations of an injury event. Bauer et al. (2005) found no differences in mothers’ use of internal state language regarding a highly stressful tornado that devastated the town compared to co-narrations of a positive event either 4 or 10 months after the storm, but older children in these conversations (7- to 11-year-olds) included more emotion and cognition words at the later recall than at the earlier recall (younger children showed no change). In addition, maternal use of mental state words at the earlier interview was related to children’s use of mental state words at the later interview, supporting the interpretation that children are learning how to create meaning through participating in parentally scaffolded co-narrations. Finally, Burch, Austin, and Bauer (2004) found few differences in how mothers co-narrated positive and everyday mildly stressful events, but they did not specifically examine either maternal internal state language or coherence. However, they did examine children’s use of internal state language in these two co-constructed narrative contexts, and found that children did include more internal states and causal references for the negative than the positive events.

Thus it seems clear that mother-child conversations about past stressful events are more causally coherent than conversations about positive events, but how internal state language may be integrated into these conversations is less clear. For the highly stressful tornado event there were no differences in comparison to positive events, but for the less stressful injury event mothers included more negative emotion than in the positive event narratives, as did children for everyday stressful events as well. This pattern again suggests that at high levels of stress, such as precipitated by the tornado, internal state language may decrease. Importantly, across studies, mothers’ and children’s use of emotion and cognitive processing words are correlated, suggesting that children may be learning how to construct meaning through participating in mother-scaffolded co-narrations.

Whereas research has shown longitudinal relations between maternal co-constructed narrative style early in development and children’s independent narrative style later in development, only one study has examined parents’ and children’s independent narratives of a stressful event. That is, children may develop the ability to create meaning both through participating in co-constructed mother–child narratives and also by modelling independent parental narratives. Peterson and Roberts (2003) asked mothers, fathers, and children to independently narrate the same stressful event, an injury of the child that required emergency room treatment. Only the mother and daughter narratives were correlated for level of detail and coherence (they did not assess narrative evaluations or internal state language). Mothers’ and sons’ narratives were not related, nor were fathers’ narratives related to those of either sons or daughters. This pattern suggests that children’s modelling of narrative style may be at least partially linked to gender, but clearly additional research is needed.

Thus, in this research we extended previous research on narrative meaning making in several ways, focusing on three broad questions. First, we examined how valance (positive or negative) and stress level (high versus low) would influence the narrative meaning-making process. Our narrative analysis focused on mental state language, specifically emotion and cognitive-processing words, and coherence, as these are two critical dimensions that are theoretically related to meaning making (Fivush & Baker-Ward, 2005; Pennebaker, 1997). Further, we used a more fine-grained, multidimensional measure of coherence than has been used in previous literature in order to provide a more nuanced examination of this construct. Whereas previous measures of coherence tend to rely on one overall global assessment, we assessed coherence along three separate dimensions that assess context (placing the event in time and place), chronology (relaying the component actions in a comprehensible temporal order), and theme (maintaining topic and providing a resolution). This measure has been jointly developed by Baker-Ward et al. (2007), and has been shown to be a reliable and developmentally sensitive measure of narrative coherence. Second, by directly comparing the same individuals narrating these different events we could address the
question of how both the type of event and individual differences in narrative style might influence the meaning-making process. Thus we compared how coherence and mental state language were interrelated both within specific event narratives and across narratives. Finally, by asking both mothers and their children to independently narrate the same types of events we could address the socialisation of narrative meaning making.

In order to accomplish these goals we asked children with asthma and their mothers to tell us about a time when they were scared and a time when they were frustrated related to the child’s illness, as well as about a positive event. We chose to study children with asthma for several reasons. First, chronic illness is a common source of stress for families. Asthma is by far the most common chronic illness, affecting approximately 9 million children in the United States alone (Summary Health Statistics for U.S. Children, 2004). Moreover, asthma is characterised by both frequent, mildly stressful, frustrating events—such as inability to engage in sports—and less frequent but highly stressful and frightening asthma attacks. Thus we were able to use open-ended emotion cues to generate a set of narratives about very similar events from mothers and children.

Because negative events create a problem to be solved, we expected the negative event narratives to be longer, to include more mental state language, and to be more coherent than the positive event narratives, as has been found in most of the previous research, although we note that there have been some discrepant findings in the literature (i.e., Bohanek et al., 2004, for coherence, and Bauer et al., 2006, for internal state language). Based on previous research we also expected higher levels of stress to disrupt the meaning-making process, and therefore we expected the scary event narratives to include less internal state language and to be less coherent than the frustrating event narratives. Finally we expected these effects to be similar for children and their mothers, but we also expected individual differences in narrative meaning-making skills, such that mothers who include more internal state language and create more coherent narratives would have children who show these same patterns for both positive and negative narratives. In terms of individual narrative style, because few studies have examined individual consistency in narrative meaning making across different types of events, we made no predictions.

### METHOD

#### Participants

Families of children with mild to moderate asthma were contacted through paediatric pulmonary clinics and summer camps for children with asthma. A total of 89 ethnically and economically diverse mothers and their 8- to 12-year-old children (mean age = 10.2 years, $SD = 1.47$, 54 males and 35 females) agreed to participate in a larger study of families coping with asthma. Approximately 70% of the sample were Caucasian, 25% African American, and 5% were of Asian or multi-racial backgrounds. Of the mothers, 14% had completed some high school or a high school degree, 37% had some college, 32% had a college degree, and 17% had a postgraduate degree. The majority of children recruited into the study had been diagnosed with asthma before the age of 4. After dyads had agreed to participate, a first home visit was scheduled and fully informed consent and assent was obtained from the mother and child, as approved by the university’s Institutional Review Board. Of those contacted, 80% agreed to participate in the study. Due to interviewer error, not all mothers and their children were asked about all three events. In addition 13 children refused to provide at least one of the narratives requested (nine of these were the scary narrative), yielding 56 mothers and 51 children who provided all three narratives. All analyses are based on this set of data.

#### Procedure

*Interviews.* Families were visited in their homes by one of three female research assistants on three separate occasions over a 6-month period. The narrative data described here were collected from the children at the second home visit and from the mother at the third home visit, separated by about 3 months. Each participant was interviewed independently in a quiet place in the home out of earshot of each other. Thus mothers and children were independently asked to provide three narratives, two concerning stressful events associated with the child’s asthma and one positive event not necessarily associated with asthma. More specifically, for the stressful events the participant was asked: “I know that having asthma can sometimes be scary [frustrating]. Can
you think of one time that you were really scared [frustrated] about your [your child’s] asthma, and tell me about it?” Only non-directive prompts were used (“Tell me more”, “Anything else?”). Order of the two stressful events was counterbalanced. For the positive event participants were asked: “Tell me about a time that you were really happy, it doesn’t have to be about your [your child’s] asthma, just a time that you were really happy.” Order of the positive and stressful events was counterbalanced.

Coding. All narratives were transcribed verbatim and checked for accuracy before coding began. Coding focused on two major aspects of the narratives: coherence and mental state language. In addition, length of each narrative was assessed as number of words.

Coherence was conceptualised along three dimensions: context, chronology, and theme, following a scheme developed by Baker-Ward et al. (2007). This scheme allows an analysis of narrative components that contribute to overall coherence, yet each dimension is theoretically independent. Each dimension is coded along a 4-point scale, where 1 represents absence of this characteristic in the narrative and 4 represents a fully coherent use of this dimension. More specifically:

1. **Context** was defined as the inclusion of information that places the event in place and time. No mention of place or time scored 1; general mention of either place (“at the mall”) or time (“once”, “a long time ago”) scored 2; specific mentions of either scored 3; and specific mention of both place (“at my friend Sally’s house”, “in my bedroom”) and time (“last Friday”, “when I was in second grade”) scored 4.

2. **Theme** referred to the sense of topic in the narrative. A narrative with no apparent topic was scored 1; a narrative that stayed mostly on topic with little elaboration or causal connections was scored 2; increasing elaboration and causal connections scored 3; and 4 was scored when the narrative included a resolution and/or a link to other life events or self-descriptions.

3. **Chronology** assessed the level of temporal sequencing apparent in the narrative, with 1 being an unordered collection of actions, 2 being a minority of actions presented in a comprehensible sequence, 3 being about half of the actions presented in a comprehensible sequence, and 4 being the majority of actions told in a comprehensible temporal order.

Two coders independently coded 25% of the narratives on each dimension for each event. Intraclass correlations for context were .92 for the scary event, 1.00 for the frustrating event, and 1.00 for the happy events; for theme, 1.0 for the scary event, .89 for the frustrating event, and 1.00 for the happy event; and for chronology, .80 for the scary event, 1.00 for the frustrating event, and .90 for the happy event, all ps < .01. The remaining narratives were coded by one of the coders.

Mental state language was conceptualised as the number of words used referring to cognition (e.g., think, know, understand), to negative emotions (e.g., scary, sad, angry), and to positive emotions (e.g., happy, glad, enjoy). Emotional behaviours (e.g., scream, cry, laugh) were also coded as emotions. Use of these words was identified and counted in 25% of the narratives by two independent coders who achieved 96% agreement. The remaining narratives were coded by one of the coders.

**RESULTS**

Our results focus on three questions. We first examined group differences between mothers and children in order to assess similarities and differences in narrative meaning making as a function of valence and stress level of the event. Means and standard deviations for length, coherence, and mental state words are displayed in Table 1. We then turned to the question of narrative style and, through a series of Pearson correlations, examined relations between coherence and mental state language both within events, to assess how meaning making may involve independent or integrated narrative processes, and across events, to examine whether individuals show a consistent style of narrative meaning making across events varying in valence and stress level. Finally, we conducted Pearson correlations between mothers’ and children’s narrative meaning making in order to examine the process of narrative socialisation. Because initial analyses revealed no gender differences, gender is not included in any of the presented analyses.
Mean number of words, mean coherence scores, and mean number of mental state words (SD) for mothers and children by event type

<table>
<thead>
<tr>
<th>Event Type</th>
<th>Number of words</th>
<th>Context</th>
<th>Theme</th>
<th>Chronology</th>
<th>Cognition words</th>
<th>Negative emotions</th>
<th>Positive emotions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mothers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scary</td>
<td>119.11 (79.04)</td>
<td>1.54 (0.79)</td>
<td>2.28 (0.76)</td>
<td>3.03 (0.92)</td>
<td>4.73 (4.18)</td>
<td>5.55 (4.30)</td>
<td>0.88 (1.64)</td>
</tr>
<tr>
<td>Frustrating</td>
<td>95.41 (67.40)</td>
<td>1.02 (0.86)</td>
<td>2.13 (0.74)</td>
<td>3.07 (1.28)</td>
<td>3.31 (3.74)</td>
<td>4.15 (2.99)</td>
<td>0.86 (1.25)</td>
</tr>
<tr>
<td>Happy</td>
<td>135.45 (124.01)</td>
<td>1.31 (1.03)</td>
<td>1.54 (0.75)</td>
<td>2.16 (1.03)</td>
<td>0.96 (1.24)</td>
<td>0.25 (0.65)</td>
<td>3.86 (2.97)</td>
</tr>
<tr>
<td><strong>Children</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scary</td>
<td>262.84 (231.64)</td>
<td>1.09 (0.86)</td>
<td>1.93 (0.82)</td>
<td>2.67 (0.73)</td>
<td>2.02 (2.62)</td>
<td>2.61 (2.02)</td>
<td>0.34 (0.79)</td>
</tr>
<tr>
<td>Frustrating</td>
<td>195.31 (142.63)</td>
<td>0.96 (0.85)</td>
<td>1.59 (0.80)</td>
<td>2.73 (0.66)</td>
<td>0.93 (1.57)</td>
<td>2.04 (1.75)</td>
<td>0.21 (0.76)</td>
</tr>
<tr>
<td>Happy</td>
<td>133.08 (98.56)</td>
<td>1.12 (1.03)</td>
<td>1.53 (0.74)</td>
<td>1.97 (1.28)</td>
<td>0.84 (1.19)</td>
<td>0.18 (0.66)</td>
<td>1.98 (2.45)</td>
</tr>
</tbody>
</table>

Narrative description and length

To place the analyses in context, we first provide a description of the types of events that mothers and children selected to narrate. Across mothers and children, the overwhelming majority of narratives of scary events were about an asthma attack (72%), with most of the remaining narratives being about the first diagnosis of asthma (10%), or medication problems (6%). The frustrating events focused on issues of medication adherence (25%), inability to participate in sports and leisure activities (28%), and frequent doctor visits (22%). Happy events, unrelated to the child’s asthma, focused on entertainment outings either with the whole family (53%) or just the mother and child (19%); 15% of the mothers narrated an event about having some time alone.

The means and standard deviations of number of words in each narrative type (shown in the first column of Table 1) indicate that both mothers and children told fairly long narratives of these events, although there were extremely large individual differences. A 2 (narrator: mother or child) by 3 (event type: scary, frustrating, or happy) repeated-measures ANOVA on number of words, with narrator as a between-participants variable and type of event as a within-participants variable, revealed a main effect of narrator, $F(1, 105) = 255.05, p < .001$, a main effect of event, $F(2, 105) = 8.51, p < .001$, and an interaction between narrator and event, $F(2, 105) = 13.24, p < .001$. Interestingly, overall, children told longer narratives (mean = 197.08 words, $SD = 124.01$) than did their mothers (mean = 116.65 words, $SD = 75.35$). Follow-up paired samples $t$-tests on the interaction revealed that children told longer narratives about the frustrating event, $t = 18.17, p < .001$, and the scary event, $t = 13.10, p < .001$, than did the mothers, but there were no differences in the length of the happy event narrative (see Table 1). In addition, children told longer narratives about the scary event than the frustrating event, $t = 2.19, p < .05$, and the happy event, $t = 4.26, p < .001$, and longer narratives about the frustrating event than the happy event, $t = 3.43, p < .001$. Mothers, in contrast, told longer narratives about the scary event, $t = 2.79, p < .05$, and the happy event, $t = 2.90, p < .05$, than about the frustrating event, but the scary and happy event did not differ from each other. Thus, overall, children told longer narratives about the negative events than did the mothers, and children told the longest stories about the scary events, followed by the frustrating events, and happy narratives were the shortest. Mothers, in contrast, told the longest stories about the happy events than either the scary or frustrating events, which did not differ from each other.

Because there were differences in overall length of the narratives by narrator and event type, we were concerned that length might be related to any obtained differences in the coherence and mental state measures. Thus Pearson correlations were computed between the length of each narrative type and the coherence scores and number of mental state words used in those narratives for mothers and children separately. Of these 36 correlations, 2 were significant: The number of positive emotion words used in the frustrating narrative was correlated with overall number of words for both mothers, $r = .27, p = .05$, and children, $r = .36, p < .05$. The remaining 34 correlations were all $p > .10$. Because length of narrative was largely unrelated to the other measures of interest, narrative length was not controlled for in the analyses.

Narrative coherence. As described in the coding section, coherence was conceptualised along
three dimensions: context, theme, and chronology. Coherence scores are displayed in Table 1 by event and dimension for mothers and children. A 2 (narrator: mother or child) by 3 (event type: scary, frustrating, or happy) by 3 (dimension: context, chronology, or theme) repeated-measures ANOVA, with narrator as a between-participants variable and type of event and coherence dimension as within-participants variables, revealed a main effect of narrator, indicating that mothers scored higher on all three dimensions of coherence than did children across all three event types, \( F(1, 91) = 7.25, p < .01 \). In addition there were main effects of event, \( F(2, 182) = 19.29, p < .001 \), and coherence dimension, \( F(2, 182) = 177.31, p < .001 \), and an interaction between event and coherence dimension, \( F(4, 364) = 9.28, p < .001 \).

For mothers, context scores were higher for the scary narrative than the frustrating narrative, \( t(55) = 3.70, p < .01 \), but the happy narrative did not differ from either negative narrative. Theme scores were similar for the scary narrative and the frustrating narratives, and both were higher than for the happy narrative, \( t(55) = 6.34, p < .001 \) for the scary narrative, and \( t(55) = 5.23, p < .001 \) for the frustrating narrative. Chronology showed the same pattern, with no difference between the scary and frustrating narratives, but both differed from the happy narrative, \( t(55) = 4.55, p < .01 \) for the scary narrative and \( t(55) = 3.92, p < .01 \) for the frustrating narrative.

For children, there were no differences across the three events for context, but theme scores were higher for the scary narrative than for the frustrating narrative, \( t(55) = 3.03, p < .01 \), and for the happy narrative, \( t(55) = 3.10, p < .01 \), which did not differ from each other. For chronology, the scary narrative and the frustrating narrative did not differ from each other, but both were higher than the happy narrative: \( t(55) = 3.34, p < .05 \) for the scary narrative and \( t(55) = 3.55, p < .05 \), for the frustrating narrative.

Overall, then, mothers provided more coherent narratives than did their children. But both mothers and children showed higher levels of coherence for the scary narrative than the happy narrative (on both theme and chronology for mothers and children), and higher levels of coherence for the frustrating narrative than the happy narrative (on theme and chronology for mothers and chronology for children). However, the two stressful narratives showed little difference in thematic or chronological coherence.

Children showed no differential use of context information across the narratives, and mothers provided less context for the frustrating narrative than the scary or happy narrative.

**Mental state language.** The second narrative component examined was the inclusion of mental state language, including words indicative of cognition and emotion. Table 1 displays the mean number of each type of mental state word used by mothers and children in each event narrative. A 2 (narrator: mother or child) by 3 (event type: scary, frustrating, or happy) by 3 (mental state word: cognition, negative emotion, or positive emotion) repeated-measures ANOVA revealed main effects of narrator, \( F(1, 106) = 29.93, p < .001 \), event, \( F(2, 212) = 34.13, p < .001 \), mental state word, \( F(2, 212) = 30.78, p < .001 \), as well as two-way interactions between event and narrator, \( F(2, 212) = 8.37, p < .001 \), mental state word and narrator, \( F(2, 212) = 4.20, p < .05 \), and event and mental state word, \( F(4, 424) = 95.90, p < .001 \), which all must be interpreted within a three-way interaction between narrator, event, and mental state word, \( F(4, 424) = 13.96, p < .001 \).

In order to examine differences between mothers and children in their use of mental state words, separate 2 (narrator) by 3 (event type) repeated-measures ANOVAs on each mental state word category were conducted, which revealed that, for cognition words, there was a main effect of narrator, \( F(1, 106) = 9.83, p < .01 \), and event, \( F(2, 212) = 49.34, p < .001 \), and an interaction between narrator and event, \( F(2, 212) = 14.49, p < .001 \). Independent samples t-tests comparing mothers and children in use of each type of mental state word indicated that mothers used more cognition words than children in their scary narratives, \( t(106) = 4.07, p < .001 \), and frustrating narratives, \( t(106) = 4.87, p < .01 \), but there were no differences for happy narratives. Negative emotion words showed the same pattern; mothers used more negative emotion words than children in the scary narrative, \( t(106) = 4.61, p < .001 \), and the frustrating narrative, \( t(106) = 4.54, p < .001 \), but there were no differences for the happy narrative. Finally, for positive emotion words, mothers used more positive emotion than did children for the scary narrative, \( t(106) = 2.22, p < .05 \), the frustrating narrative, \( t(106) = 3.30, p < .001 \), and the happy narrative, \( t(106) = 3.77, p < .001 \).
In addition, separate one-way repeated-measures ANOVAs followed up with paired samples t-tests on mothers’ and children’s use of each mental state category across event type revealed that mothers used more cognition words for the scary narrative than the frustrating narrative, \( t(55) = 2.72, p < .01 \), and more for the frustrating narrative than the happy narrative, \( t(55) = 4.63, p < .001 \). Negative emotion words showed the same pattern, with more for the scary narrative than the frustrating narrative, \( t(55) = 2.49, p < .05 \), and more for the frustrating narrative than the happy narrative, \( t(55) = 9.23, p < .001 \). Finally, mothers used more positive emotion words in the happy narrative than the frustrating narrative, \( t(55) = 6.70, p < .001 \), or the scary narrative, \( t(55) = 6.66, p < .001 \), which did not differ from each other.

Children used more cognition words in the scary narrative than the frustrating narrative, \( t(55) = 3.65, p < .01 \), or the happy narrative, \( t(55) = 3.56, p < .01 \), but the frustrating and happy narratives did not differ from each other. Children also used more negative emotion words in the scary narrative than the frustrating narrative, \( t(55) = 1.97, p < .05 \), and more in the frustrating narratives than the happy narrative, \( t(55) = 8.24, p < .001 \). For positive emotion words, children used more positive emotion words in the happy narrative than in the frustrating narrative, \( t(55) = 5.23, p < .01 \), or the scary narrative, \( t(55) = 4.53, p < .01 \), which did not differ from each other.

In summary, compared to children, mothers used more cognition words in the scary narrative, more negative emotion words in the scary and the frustrating narratives, and more positive emotion words in all three narratives. Looking across event type, mothers used more cognition and negative emotion words in the scary narrative than the frustrating narrative, and more in the frustrating narrative than the happy narrative. Children used more cognition and negative emotion words in the scary narrative than the frustrating or happy narratives, and more negative emotion words in the frustrating narrative than the happy narrative. Finally, both children and mothers used more positive emotion in the happy narrative than in either of the two stressful narratives, which did not differ from each other.

### Relations between coherence and mental state language

The next set of analyses focused on relations between narrative coherence and the use of mental state language for mothers and children separately. This was examined in two ways, as within-event relations and as across-event relations. The first is a question of narrative type: Are individuals consistent in their use of coherence dimensions and mental state language when narrating specific types of emotional events? The second is a question of narrative style: Are individuals consistent in their use of coherence dimensions and mental state language across different types of event narratives? Note that, for children, all correlations were computed with age as a control.

**Narrative type.** The first set of within-event correlations examined the extent to which the three dimensions of coherence were interrelated within each narrative, and the three types of mental state words were interrelated within each narrative. Thus Pearson correlations were computed between individuals’ scores on each coherence dimension (content correlated with theme and with chronology and theme correlated with chronology) and on each mental state word (cognition words correlated with negative emotion and positive emotion words and negative emotion correlated with positive emotion). These correlations are shown in Table 2. As can be seen, in general the coherence dimensions were empirically separate indices of overall narrative coherence. Although mothers showed similar levels of contextual and thematic coherence for the frustrating and happy event narratives, and children showed similar levels of chronological coherence to contextual and thematic coherence for the scary narrative, only 4 of 18 correlations achieved significance. In contrast, mental state language showed substantial interrelations. Both mothers and children who used more cognitive processing words also used more negative emotion words across all three narrative types. Children were also consistent in their use of negative and positive emotion across all three event types.

The second set of within-event correlations examined relations between coherence and mental state language. Thus each coherence dimension was correlated with each mental state word.
These correlations are shown in Table 3 for mothers (the left side) and children (the right side). As can be seen, there were few relations between mother’s coherence and mental state language. The only consistent pattern to emerge was that negative narratives that were more thematically coherent tended to include more internal state language across the three event types; only one other correlation reached statistical significance.

For children there were many more relations between coherence and mental state words. Similar to mothers, the most consistent pattern is relations between thematic coherence and the use of mental state language across all three event types, but here most of these correlations did reach significance (seven of these nine correlations were significant). Interestingly, there were many relations between coherence dimensions and mental state words for the happy narrative, with both context and theme significantly correlated with all three types of mental state words. In addition, both positive and negative emotion words were negatively related to chronological coherence for the frustrating narrative.

Overall analyses on narrative type suggests that coherence is composed of separate dimensions, but mental state language may reflect a more integrated narrative characteristic. In particular cognitive processing and negative emotion words may be used in an integrated fashion in an effort after meaning. Finally, coherence and mental state language seem to be relatively independent aspects of meaning making.
Narrative style. The second question concerns narrative style, the extent to which individuals are consistent in their narrative coherence and mental state language across types of event. In order to assess this, Pearson correlations were computed for each coherence dimension and each mental state word between the scary and the frustrating narrative, the scary and the happy narrative, and the frustrating and the happy narrative (see Table 4). For mothers (top panel), two patterns are obvious. First, thematic coherence cuts across event narratives; those mothers who provided a thematically focused narrative for the scary event did so for frustrating and happy events as well. Second, mothers’ use of mental state language was similar across the two stressful event narratives, but neither stressful event was consistent with the happy event.

For children (bottom panel) similar patterns emerged. Children were consistent in their thematic focus across the three event types. Although they were also consistent in context between the frustrating and happy narratives, context was negatively related between the scary and the happy narratives, suggesting little consistency in contextual coherence. Again, similar to mothers, children were consistent in their use of mental state words for the two stressful events, but there was little consistency between the stressful narratives and the happy narrative.

Relations between mothers and children

The final set of analyses focused on relations between mothers’ narratives and children’s narratives in order to examine the possibility of socialisation of narrative structure. Table 5 displays correlations between mothers and children on the coherence dimensions and on mental state words for each event. As can be seen, there were virtually no relations between mothers’ and children’s coherence in any of the narratives on any dimension. The one exception is a negative correlation between mothers’ and children’s chronological structure for the scary narrative. Similarly, there were no correlations between mothers and children’s use on mental state words in any of the event narrative types.

DISCUSSION

In this research we examined mothers’ and children’s narratives of stressful and positive

### TABLE 4

<table>
<thead>
<tr>
<th></th>
<th>Context</th>
<th>Theme</th>
<th>Chronology</th>
<th>Cognition words</th>
<th>Negative emotion</th>
<th>Positive emotion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mothers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scary to Frustrating</td>
<td>.28*</td>
<td>.48**</td>
<td>.01</td>
<td>.55**</td>
<td>.42**</td>
<td>.34*</td>
</tr>
<tr>
<td>Scary to Happy</td>
<td>.12</td>
<td>.42**</td>
<td>-.03</td>
<td>.19</td>
<td>-.13</td>
<td>.12</td>
</tr>
<tr>
<td>Frustrating to Happy</td>
<td>.20</td>
<td>.44**</td>
<td>-.05</td>
<td>.24</td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td><strong>Children</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scary to Frustrating</td>
<td>.01</td>
<td>.47**</td>
<td>-.15</td>
<td>.25**</td>
<td>.50**</td>
<td>.29**</td>
</tr>
<tr>
<td>Scary to Happy</td>
<td>-.28*</td>
<td>.33*</td>
<td>.01</td>
<td>.24**</td>
<td>.05</td>
<td>.15</td>
</tr>
<tr>
<td>Frustrating to Happy</td>
<td>.32*</td>
<td>.24</td>
<td>.19</td>
<td>.06</td>
<td>.12</td>
<td>.18</td>
</tr>
</tbody>
</table>

**p < .01, *p < .05.

### TABLE 5

<table>
<thead>
<tr>
<th></th>
<th>Context</th>
<th>Theme</th>
<th>Chronology</th>
<th>Cognition words</th>
<th>Negative emotion</th>
<th>Positive emotion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scary</td>
<td>.22</td>
<td>-.15</td>
<td>-.45**</td>
<td>.12</td>
<td>.03</td>
<td>.15</td>
</tr>
<tr>
<td>Frustrating</td>
<td>-.24</td>
<td>-.18</td>
<td>.10</td>
<td>.19</td>
<td>.06</td>
<td>.03</td>
</tr>
<tr>
<td>Happy</td>
<td>.02</td>
<td>.22</td>
<td>-.10</td>
<td>-.12</td>
<td>-.02</td>
<td>.12</td>
</tr>
</tbody>
</table>

**p < .01, *p < .05.
events for evidence of efforts after meaning. Both mothers and children told longer narratives about a scary event than about a frustrating event, although somewhat surprisingly, children's negative narratives were longer than mothers', perhaps indicating the extent to which a chronic illness is the focus of these children's everyday lives. Regardless of length, mothers told more coherent narratives, both negative and positive, saturated with more mental state language than those of children. Further, other than differences in length, the patterns among the three types of events were remarkably similar for mothers and children. Narratives of negative events were more coherent and contained more mental state language than narratives of positive events overall, and narratives of scary events contained more mental state language than narratives of frustrating events. Coherence seems to be a multifaceted and empirically separable narrative element, whereas mental state language seems to be a more integrated aspect of narrative meaning making. Moreover, while thematic coherence seems to be a consistent narrative style across valence of event being narrated, mental state language appears to be an individually consistent style only across the two stressful event narratives. Finally, and quite surprisingly, there were virtually no relations between mothers' and children's narrative meaning making.

That negative event narratives were more coherent and contained more mental state language than positive event narratives confirms previous research (Baker-Ward et al., 2005; Bohanek et al., 2004; Fivush et al., 2002), and supports the interpretation that negative events create a problem to be solved, necessitating efforts after meaning. Differences in length are harder to interpret, as mothers and children differed, and both patterns found here were different from those found in previous research. More specifically, previous research with adults has found that negative event narratives are longer than positive event narratives (Bohanek et al., 2004), and mother-child co-constructed narratives are generally longer for negative than for positive events (Bauer et al., 2005; Sales et al., 2003). In contrast, research with children has generally found no differences in overall length of positive and negative events narratives (Baker-Ward et al., 2005; Fivush et al., 2002). Here, mothers' narratives were longer for positive than negative events and children's narratives were longer for negative than positive events. Although it is not clear exactly how to interpret these findings, two points should be emphasised. First, length was unrelated to either coherence or internal state language. Second, regardless of differences in length, for both mothers and children narratives of negative events were more coherent and more saturated with internal state language than were narratives of positive events. Thus it seems that length may not be an integral aspect of meaning making.

Interestingly, and against our predictions, narratives about scary events, which are presumably associated with high levels of stress, included more cognitive-processing words and more negative emotion than did narratives of frustrating events, which are presumably associated with lower levels of stress. We had expected that as stress increased, efforts after meaning would be disrupted, as has been found in some previous research (Fivush et al., 2003; Parker et al., 2006). In contrast, we found that for the scary events both mothers and children seemed to increase in their effort after meaning. It has been argued that the effects of stress may follow more of an inverted U-shape function, with higher levels of stress increasing efforts after meaning to a point where the stress becomes overwhelming, and therefore disrupts meaning (Easterbrook, 1959; see Fivush, et al., in press, for a discussion). It is possible that we did not assess events that were stressful enough to disrupt the meaning-making process. Indeed, the previous research finding decreased mental state language at increased levels of stress focused on natural disasters (Parker et al., 2006; Sales et al., 2005), painful medical procedures associated with a life-threatening disease (Wolitzky et al., 2005), and narratives of the 9/11 disaster (Fivush et al., 2003)—arguably more stressful events than studied here.

Another difference is that previous research that found disruption in meaning making examined individuals recalling the same event, but who varied in their level of experienced stress, defined either by subjective reports or objective criteria (e.g., amount of damage to the house following a hurricane, personal relation to 9/11). Thus all individuals experienced similar emotional reactions although to varying degrees. In this study we varied stress by varying the emotional resonance of the event. It is possible that frustrating events simply create a different emotional signature than do scary events. It is certainly the case that the frustrating events had more of an everyday
impact on both the mothers’ and the children’s lives.

Related to this, we allowed mothers and children to select for themselves the events to narrate because we wanted to ensure that the narratives would be about personally meaningful events. Because of the population studied, it was not surprising that the majority of scary narratives focused on medical issues concerning the child’s asthma, mostly asthma attacks, and the frustrating events focused on issues of managing asthma, including medical compliance and behavioural limitations. Thus there was a great deal of similarity in the events narrated. However, we did not collect information on either the frequency of these events (although we must assume compliance issues are very frequent and asthma attacks are substantially less frequent) or on time since the events’ occurrence. These are obviously both very important dimensions that might relate to how events are remembered and narrated, and need to be included in future research.

It is also possible that the disruption of meaning making is specific to particular individuals who have limited coping skills and therefore have more difficulty creating meaning from aversive experiences, and therefore experience more stress (e.g., Lazarus & Folkman, 1984; Pennebaker, 1997). Thus future research needs to consider both objective criteria of what is more or less stressful, as well as assessing individual differences in experienced levels of stress, and to compare a greater variety of negative events at these various stress levels. Nonetheless, our results indicate that both children and adults are actively engaged in meaning making about stressful events, and that as stress increases, these efforts may increase as well.

Moreover, our results point to coherence and mental state language as independent aspects of narrative meaning making. Further, coherence seems to be a more complex and more multifaceted construct than mental state language. Within the narrative literature, coherence is assumed to be a critical aspect of creating meaning, but there is no agreed definition of what coherence is (Neimeyer & Levitt, 2001). Here we used a new conceptualisation of narrative coherence that was developed based on both theoretical and empirical work, which conceptualises coherence along three critical dimensions (Baker-Ward et al., 2007), and found that these three dimensions are, indeed, empirically distinct. In contrast, mental state language is more empirically integrated. In particular, the use of cognitive-processing words and negative emotion seem to co-occur within a narrative, suggesting that individuals may be working to understand and process negative emotion, and some individuals engage in this reflection to a greater extent than others (e.g., Pennebaker, 1997).

There is also some suggestion that individuals develop a consistent narrative style (but see Bohanek et al., 2004). Specifically, both mothers and children were consistent in their thematic coherence across negative and positive events. Even more interesting, mothers and children were consistent in their use of mental state language, but only for the two negative event narratives. This further suggests that narrative style may be in the service of trying to create meaning. It may be that narrative style is a component of coping skills (Neimeyer & Levitt, 2001). A great deal of previous research has indicated that adults who are better able to create coherent and emotionally expressive narratives of stressful events subsequently show better physical and psychological health (Pennebaker, 1997). Intriguingly, this does not seem to hold for children, at least under the age of 14 (e.g., Soliday, Garafolo, & Rogers, 2004). Children who include more emotion and explanation when narrating the stressful events of their lives subsequently show increased levels of anxiety and depression (Fivush, Marin, Crawford, Reynolds, & Brewin, 2007). Yet children who engage in co-constructed narratives of stressful events with mothers who include more explanation and emotion display better coping skills and fewer internalising and externalising problems (Sales & Fivush, 2005). This pattern suggests that children may not yet have the narrative and/or emotional regulation skills to create coherent, emotionally expressive, and explanatory narratives that serve to regulate negative emotion on their own, and that they are dependent on adults to scaffold narrative meaning making. Certainly, we found here that mothers’ narratives were substantially more coherent and expressive of emotion and cognitive processing than were children’s narratives. Perhaps children of this age have difficulty creating meaning on their own.

This may provide one possible explanation for why mothers’ and children’s narratives were unrelated. It may be that children are still in the process of learning how to create meaning and cannot yet do it without an adult scaffold. However, it must be pointed out that previous
research has found relations between mothers’ use of mental state language in co-constructed narratives and children’s subsequent use of mental state language (Bauer et al., 2005; Rudek & Haden, 2005). And the one study that has examined relations between independent parent and child narratives did find relations between mothers’ and daughters’ narrative coherence (Peterson & Roberts, 2003), but in that study parents and children were asked to narrate the same event, an injury to the child resulting in emergency room treatment. In the present study, although mothers and children were asked to narrate the same type of event they were not necessarily narrating the same specific experience, nor were the experiences narrated here necessarily as distinct as an injury and emergency room visit, and this too might make a difference. Still, given previous research demonstrating the socialisation of narrative skills more generally, it really is not apparent why we did not find any relations in this study, and any explanation would be clearly post-hoc. The discrepancies between our findings and previous research must await further research to be resolved.

Finally, we note that these findings are based on a special population. Although we had a good-sized and diverse sample, all participants were coping with a child’s asthma. Living with chronic illness may create levels of stress, as well as opportunities for learning coping strategies, that may make this population somewhat different from healthy families. Further, although we attempted to extend previous literature by examining more than simply a positive and negative event (see also Peterson & Biggs, 2001), we are still limited by our choice of a frustrating and scary event, as well as by the fact that we did not assess individual levels of stress associated with each of these events. Future research should take a more inclusive approach, asking about multiple negative and positive events as well as assessing stress associated with each. Still, our results add to a growing body of literature examining not just amount of recall, but the qualitative aspects of recall that give events meaning (Fivush & Baker-Ward, 2005). Overall, the results indicate remarkable developmental continuity in efforts after meaning. Both mothers and children create more coherent narratives saturated with thoughts and emotions for stressful than for positive events. Certainly, how we remember the events of our lives is not just a function of what happened but also of how we strive to make meaning of these experiences.

REFERENCES


Fivush, R., & Baker-Ward, L. (2005). The search for meaning: Developmental perspectives on internal...
state language in autobiographical memory. *Journal of Cognition and Development*, 6, 455–462


