JEALOUSY COMPREHENSION DURING MIDDLE CHILDHOOD:

THE ROLES OF PERSPECTIVE TAKING, GENDER, AND MATERNAL REMINISCING WITHIN NARRATIVE CONSTRUCTION

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ABSTRACT

JEALOUSY COMPREHENSION DURING MIDDLE CHILDHOOD:
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By

Naomi J. Aldrich

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The aim of the current study was to provide an extensive assessment of the socio-cognitive development of children's jealousy understanding during middle childhood within the context of narrative construction. In doing so, influences of perspective-taking ability, gender, and maternal reminiscing on children's ability to understand –and talk about– jealousy (a *complex* emotion) between the ages of 5 and 11 were examined. In total, 40 girls (*M* age = 8y;2m, *SD* = 2y;1m), 40 boys (*M* age = 8y;7m, *SD* = 2y;0m), and their mothers participated.

Children completed a series of narrative tasks that were coded for emotion understanding: a fictional narrative about a frog experiencing jealousy, post-story probe questions, an individual autobiographical narrative about their own experience of jealousy, and a co-constructed personal narrative in which children and their mothers were asked to talk about a time their child experienced jealousy. Additionally, mothers completed the fictional narrative task for an adult comparison to children's abilities. Children were also administered measures of socio-cognitive development (Test of Emotion Comprehension, Test of Perspective-Taking Ability) and intellectual development (Verbal Intelligence – PPVT, Nonverbal Intelligence – TONI), and mothers were administered a measure of Verbal Intelligence (PPVT).

Overall, findings from the current study provide evidence that (1) children exhibit an increased understanding of jealousy across multiple measures of emotion understanding between the ages of 5 and 11, (2) there is considerable overlap in the feelings of jealousy and envy during middle childhood, (3) perspective taking is linked to children's abilities to talk about another's feelings during middle childhood, and (4) girls' emotion understanding is displayed and acquired in a more interpersonal context than boys'. Furthermore, the present study extends the literature on maternal-guided reminiscing to include assessment during middle childhood, examining the roles of both style and content, and through evaluating both parties' discourse. In doing so, maternal elaboration was found to be beneficial for children's autobiographical narrative abilities during middle childhood. Results are discussed in relation to socialization practices behind children's expression of jealousy –a negative emotion associated with interpersonal rivalry– that is frequently experienced, but that American culture says should not be expressed.

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CHAPTER 1

Introduction

Overview

Taking into consideration the prominence of bullying among today's youth, and resultant issues of peer rejection and social isolation, understanding children's capabilities to discern others' emotions in relation to themselves is essential. Research indicates that jealousy (i.e., a ubiquitous complex emotion that fundamentally concerns interpersonal rivalry and potential loss of an important relationship) is often associated with feelings of rejection, anger, and resentment (Smith, Kim, & Parrott, 1988). Furthermore, it has been suggested that jealousy, and its perceived relationship exclusion, is a powerful motivator for bullying, especially for girls (Delgado, 2012; Turkel, 2007). With widespread attention turning to a possible bullying epidemic in the United States (Dubreuil & McNiff, 2010; Phoenix & Honda, 2012) children's thinking about interpersonal rivalry and the feelings associated with these experiences is becoming an increasingly important topic.

Given the social nature of jealousy and its pervasiveness in everyday life, many researchers have investigated individual differences in the affective experiences and effects of this emotion from as young as 6-months-old (Hart & Carrington, 2002), and into older ages: preschool (Bauminger, Chomsky-Smolkin, Orbach-Caspi, Zachor, & Levy-Shiff, 2008), early adolescence (Parker, Low, Walker, & Gamm, 2005), and adulthood (Shackelford et al., 2004). Apart from this literature focusing on the external expression and personal experiences of jealousy, what remains to be understood is how children come to understand the concept itself. More specifically, what capabilities do children have in discerning specific components of

jealousy, such as the presence of a rival or the threat of loss of a relationship, at an age when research shows they are experiencing a burgeoning awareness of other people's mentality? In addition, what can researchers learn about children's emotion understanding through their stories? These are the questions I sought to answer when conducting my master's thesis research. In an effort to gain an understanding of children's comprehension of jealousy, my earlier research specifically focused on children's ability to talk about jealousy and the role of perspective taking in this ability during middle childhood (Aldrich, Tenenbaum, Brooks, Harrison, & Sines, 2011). By asking 5- to 8-year-olds to narrate a fictional story about a big frog who becomes jealous and increasingly aggressive towards his owner's new frog, we ascertained that children's ability to identify a rival is one of the first components of jealousy to emerge, and that for children in this age range, the basic emotion of anger is most often associated with feelings of jealousy. Furthermore, we found children's ability to tell a coherent narrative and to take on the perspectives of the characters to be predictive of their understanding the jealousy theme of the story.

This first study of jealousy added to the literature by linking emotion understanding to perspective taking, both of which are integral to socio-cognitive development during middle childhood. Even though narratives have been recognized as an important cultural tool for assessing children's socio-cognitive understanding, perspective taking had largely been ignored in research utilizing the narrative method. Apart from being unique in its focus on perspective taking, my previous research was also distinctive in that narratives were used to assess children's understanding of a *complex* emotion. Although this earlier study made, what I believe to be an important contribution to the literature, there were unexpected findings and limitations left to be addressed. To begin, while our findings revealed that older children (7- to 8-year-olds; $n = 9$)

tended to talk about the big frog's feelings more often than the younger children (5- to 6-year-olds; *n* = 3), the majority of children's (74% of sample; *n* = 35) stories did not include any references to the big frog's feelings whatsoever. These findings suggest that the perceived salient components of the story for the children in this sample did not include emotionally motivating factors of interpersonal rivalry. Apart from the lack of emotional discourse previously found, there were also two main limitations to this earlier study. First, as multiple measures were taken from the same fictional narratives, we had a limited assessment of children's perspective taking and their understanding of jealousy. Second, children's age was not coded as a continuous variable, thereby disallowing us to include more fine-grained analyses of the developmental progression of children's jealousy understanding during middle childhood.

Statement of the Problem

My dissertation work expands upon my previous research using a five-pronged approach that addresses the unexpected findings and limitations of the first study in an effort to further assess children's understanding of jealousy during middle childhood. To begin, given that in the first study the majority of children who talked about the big frog's feelings were between the ages of 7 and 8, the present study picked up where the first study left off by including children representative of the full age range of middle childhood (i.e., 5- to 11-years-of-age). Next, to enrich our findings of children's understanding of jealousy, I included children's age as a continuous variable for all analyses. Third, it has been suggested that in order to enhance the use of narratives in developmental queries, it is important to not rely only on one narrative activity, but instead to include multiple diverse contexts in which the speakers can become engaged with their audience (Daiute, 2011). Therefore, after narrating the fictional story, children were asked a series of probe questions to further elicit their understanding of the big frog's feelings. In

addition, I obtained autobiographical accounts of children's jealousy experiences (both individually constructed and co-constructed with their mother). Doing so allowed me to more fully examine children's understanding of jealousy across narrative contexts. Furthermore, I was able to document scaffolded conversations between mothers and their children about a complex emotional experience. Fourth, I have continued to integrate emotion understanding with perspective-taking ability in a way that allows for a more thorough examination than the previous study's methodology would allow. For instance, given the relationship of perspective taking to children's understanding of the big frog's jealousy shown in the previous study, I have included an independent assessment of perspective-taking ability (Selman & Byrne, 1974) as well as emotion understanding (TEC, Pons & Harris, 2000). I also assessed children's understanding of the big frog's jealousy while controlling for influences of receptive language ability (PPVT) and intellectual development (TONI). Finally, as an outgrowth of my previous research investigating gender socialization of more *basic* emotions (e.g., sadness, anger) between parents and their adolescent children (Aldrich & Tenenbaum, 2006), the current study investigated the influence of maternal reminiscing speech on children's emotion understanding by examining conversational patterns in mother-child dyads about past experiences of jealousy (i.e., co-constructed narratives). In doing so, I was able to examine the effects of maternal reminiscing speech on children's abilities to talk about their own previous emotion experiences. Overall, the current study sought to provide a more extensive assessment of the socio-cognitive development of children's jealousy understanding during middle childhood within the context of narrative construction. By doing so, I anticipate that the results will lead to an increased understanding of children's emotional growth and understanding of interpersonal rivalry, with

the possibility of helping develop better ways to assist children who have difficulties relating to others.

Definition of Terms

The following definitions are provided to maintain consistency and understanding of these terms throughout the dissertation. Terms not accompanied by a citation were developed by the researcher.

Jealousy: A complex, negative emotion centering around the threat of loss of an important relationship to another individual (Smith et al., 1988).

Perspective Taking: Ability to differentiate another's viewpoint from one's own that is required to infer another's feelings and potential reactions (Selman, 1971, 1980, 1981).

Socio-Cognitive Development: Elaboration of emotional intelligence and the ability to demarcate individuals' viewpoints that typically begins around 3 years-of-age and becomes more refined throughout middle childhood.

Organization of the Remainder of the Study

In what follows, I will first review the literature on socio-cognitive development during middle childhood, the role of narratives in assessing children's socio-cognitive understanding, and how maternal speech may mediate children's social-cognition. After presenting the relevant literature, I will provide a summary of my research questions at the end of Chapter 2. Chapter 3 contains the methodology and procedures employed in the current study. The results of the study will then be presented in Chapter 4. Finally, Chapter 5 includes a summary of the findings of the study based on my specific research questions, implications drawn from the study, and a

discussion addressing my findings, limitations of the current research, and recommendations for further study.

CHAPTER 2

Review of Related Literature

How Children Come to Understand Others in Relation to Themselves

Over the past two decades, a large amount of research has focused on children's understanding of people's beliefs, feelings, and desires. Whereas many studies have focused on the emergence of socio-cognitive understanding in children ages three to four years (Wellman, Cross, & Watson, 2001), research has demonstrated that this capacity is further elaborated throughout middle childhood (de Rosnay & Hughes, 2006; Flavell, Green, & Flavell, 1993).

Integral to the ability to understand another person's thoughts and feelings is the ability to take their perspective. Robert Selman (1980, 1981) proposed a hierarchical organization to children's development of perspective-taking skill. According to his model, younger children often confuse the thoughts and feelings of others with their own thoughts and feelings, but during middle childhood children are able to consider the perspectives of others, and they realize that others have the capacity to do this as well. Children first grasp that perspectives differ because people have access to different information; gradually, children more fully utilize this knowledge in thinking about others' distinct viewpoints. Specifically, Selman put forth a five-stage model of perspective-taking development that outlines the evolution of this ability from early childhood through adulthood. Between the ages of 3 and 6, children are considered *egocentric* in that their perspective-taking ability is vastly limited. Children during this stage often confuse the thoughts and feelings of others with their own. During the *subjective* stage (ages 5 to 9), children come to the realization that they and others think and feel differently in large part because they have access to different information. Between the ages of 7 and 12, children acquire the ability to view their own thoughts and feelings from another's perspective. In this *self-reflective* stage, children

can step into another's shoes and view their own thoughts/feelings from another's viewpoint. Children at this stage also realize that others have the capacity to do this as well. During the *mutual* perspective-taking period (ages 10 to 15), children have the ability to envision themselves and others from the viewpoint of an impartial third party. Specifically, children now visualize themselves beyond a two-person situation and take the viewpoint of a third person who is assessing the perspectives of the two individuals simultaneously from outside the situation. Finally, Selman proposed the *societal* perspective-taking stage for individuals around 14 years-old through adulthood in which he suggested that people understand that the third-party perspective (outlined above) is often shaped by the values of their society. In this last stage, individuals recognize that our moral compasses play a large role in how we perceive situations as bystanders.

Another key feature of children's understanding of the mentality of persons is their developing understanding of others' emotions (Denham, 1998). Based on the literature, researchers have proposed a hierarchical model to children's emotion comprehension. For instance, Francisco Pons and Paul Harris (2005) put forth the supposition that children's emotion understanding is based on the development of nine elements of emotional knowledge that are organized into three stages according to acquisition difficulty. Within the first or *external* stage, children between the ages of 3 and 4 begin to recognize emotions based on behavioral expressions, start to associate external causes with emotions, and realize that our recollections can influence the way we feel. Between the ages of 5 and 8, children acquire knowledge of more *mental* aspects of emotion. Specifically, children understand the roles beliefs and desires play in our emotions and that individuals have the capacity to hide their emotions. Finally, in the *reflective* stage (ages 9 to 11), children realize that individuals can experience multiple feelings

simultaneously, that these feelings are often guided by our value systems, and that people can exert control over their emotions. Whereas the first stage of emotion understanding during the preschool years is associated with the *basic, primary* emotions, with a focus on behavioral manifestations of emotion, such as tears with sadness (Bosacki & Moore, 2004), the second stage from ages five to eight is earmarked by children's emerging understanding of *complex* or *secondary* emotions that hinge on self-awareness or self-consciousness (Saarni, 1999), such as jealousy, shame, pride, and embarrassment.

The question of how children use their understanding of the basic emotions to progress towards comprehension of complex emotions has led some researchers to investigate children's ability to describe situations that would bring about different emotional reactions. Harris, Olthof, Terwogt, and Hardman (1987) asked 5-, 7-, 10-, and 14-year-olds to describe situations that would bring about 20 emotions, ranging from basic emotions (e.g., happiness, anger) to more complex emotions (e.g., jealousy, pride). Different emotion concepts appeared at different ages, with the younger children largely unable to provide situations evoking the more complex emotions, such as jealousy. These findings led Harris and colleagues to suggest that children acquire complex emotion understanding in an "all-or-nothing" manner in which they either understand complex emotions or they do not. Elaborating on the Harris et al. (1987) study, researchers Russell and Paris (1994) asked children (4- to 7-year-olds) to describe situations evoking certain basic and complex emotions with the additional assessment of children's understanding of emotional valence (i.e., the intrinsic attractiveness or aversiveness of the emotion in question). Specifically, after children were instructed to describe a situation evoking the emotion, they were asked to decide whether or not the emotion was a good or bad feeling. The authors found that although younger children were largely unable to provide situations for

complex emotions (such as jealousy), they were able to correctly identify the appropriate valence for the emotion (e.g., jealousy is a bad feeling). As a result of their findings, they proposed that children's comprehension of basic emotions and the feelings associated with them become the building blocks towards understanding more complex emotions. According to this "gradual" hypothesis, a child's understanding of jealousy would begin with a negative feeling (such as that associated with anger) and would be elaborated as the child acquires additional characteristics of the emotion, such as the presence of a rival.

Narratives as a Means for Assessing Socio-Cognitive Understanding

Storytelling is an important cultural activity in which emotions, morals, and societal values are conveyed. Narratives provide a means for individuals to explain the world they live in, make connections with others, and find meaning in their lives. Stories thus serve as an important cultural tool for expressing socio-cognitive understanding of feelings and beliefs (Fivush, 1989). In his work on narratives, Jerome Bruner emphasized the "duality of narrative landscapes" and suggested that Perspectivalism is the essential feature of narratives (1987). From his view, the narrative setting or landscape can be seen as a continuum, where narrators move between a *landscape of action* or the actuality of the story and a *landscape of consciousness* that contains the subjective worlds of the narrative's characters. Within the *landscape of consciousness*, the knowledge a narrator possesses of real-world influences on psychological internal states (such as emotion) is reflected in their narrative constructions. Such knowledge is utilized in children's talk about themselves and others (Trabasso & Stein, 1997). Children learn a variety of storytelling techniques, including how to construct a personal narrative, in which they recount a specific experience in their life, and storybook narration, in which they recount the episodes of a fictional story. Both techniques rely on the assumption that a child's internal

representation of the episode or event is related to how the child will construct a story about that event (Fivush & Haden, 1997). Researchers utilizing personal narratives have suggested that talking about one's past experiences leads to an increased awareness of one's self in relation to others through assessment of different perspectives (Fivush, Haden, & Reese, 2006; Fivush & Nelson, 2004). Children's ability to construct personal narratives has been found to be related to their emotion understanding (Cutting & Dunn, 1999) and theory-of-mind (Kleinknecht & Beike, 2004).

Some researchers suggest that fictional narratives, in comparison to personal narratives, present advantages as a more controlled form of discourse. Bamberg and Damrad-Frye (1991) offer that fictional narratives allow for more precise analyses that the variability in personal narratives, often times, will not allow. Furthermore, telling a fictional narrative, as opposed to retelling a personal experience becomes more salient to children as they encounter fictional narratives as a means of school-based instruction (Ukrainetz et al., 2005). Researchers have found that children are able to attribute emotion and mental states to story characters within a fictional context (Bamberg & Damrad-Frye, 1991; Bamberg & Reilly, 1996; Peterson & Slaughter, 2006; Reilly, 1992), and use different narrative events (i.e., goals, outcomes, reactions) to determine the causes of the emotions of story characters (Bourg & Stephenson, 1997). In addition, children's use of mental state language during fictional storytelling is related to their theory-of-mind (Symons, Peterson, Slaughter, Doyle, & Roche, 2005).

Narrative Ability and its Relation to Socio-Cognitive Understanding

Bruner proposed that storytellers create the *landscape of consciousness* through the use of *subjunctivizing* language as a way to emphasize for themselves and others why particular incidents are noteworthy (Daiute, 2013). Similarly, Labov and Waletzky's seminal work on

individuals' autobiographical narratives emphasized the use of *evaluation* in storytelling as a way for a narrator to signal what they consider essential to the storyline for their audience and also for the personal meaning the story holds for the narrator themselves (1967). Many researchers have since confirmed and expanded upon Labov and Waletzky's ideas about narrative evaluation. For instance, researchers utilizing fictional narratives have traditionally focused on how children use linguistic devices to provide meaning and organization to their stories from a narrator's perspective. By acting as gatekeeper, the role of the narrator is to provide the audience with a point-of-view through which they reveal the important aspects of a story. Specifically, narrators do this by telling a coherent and complex narrative through evaluation of information they consider to be essential to the story. To create a coherent narrative, the narrator must construct a series of statements that connect the main events of the story (Peterson & McCabe, 1983; Snow, Tabors, Nicholson, & Kurland, 1995). Narrators include clauses that relay the sequential ordering of story elements through formalized storybook schemas. Several types of clauses may be used to emphasize particular aspects of the story structure; these provide the audience with information about the setting of the story or story resolution (i.e., events that occur after the climax of the story), and may utilize appendages such as formalized beginnings or endings of the story (i.e., *Once upon a time, They lived happily ever after*) (Peterson & McCabe, 1983; Snow et al., 1995; Willenberg & Kang, 2001).

Narratives become more complex through additional evaluative devices used by a narrator to portray their own point of view. Building upon previous work (Labov & Waletzky, 1967; Peterson & McCabe, 1983), Bamberg and Damrad-Frye (1991) suggested that a narrator attempts to provide the audience with a meaningful interpretation of the story by connecting temporal aspects of the story and evaluating important events in the story. Bamberg and Damrad-

Frye explored five categories of evaluative device used in narratives (i.e., frames of mind, story character speech, hedges, negative states and actions, and causal connectors) and how and where children (5- and 9-year-olds) and adults used these devices when narrating a wordless picture book, *Frog Where Are You?* (Mayer, 1969). Significant developmental trends were observed in how evaluative devices were used: Children tended to use evaluation as a way to introduce and arrange events according to the timeline of the story (i.e., children told the story from a *local* perspective). Adults, on the other hand, tended to use evaluation to introduce and arrange events based on their perceived importance to the story as a whole (i.e., they told the story from a *global* perspective). Between the ages of five to eight years, children differed in their distribution of evaluative devices (including references to emotion and mental states), with younger children evaluating only local details and older children providing more global evaluations.

Bamberg and Damrad-Frye (1991) also reported a developmental progression in how mental state terms and emotions were used in storytelling. Five-year-olds' narratives made references to mental states and emotions to emphasize *local* perspectives, often linking a character's facial expression with the preceding plot point. In contrast, adults, and to a lesser extent 9-year-olds, were better able to link their evaluations of mental states and emotions to the story as a whole, without relying solely on the immediately preceding events, thus, relating a *global* perspective to their audience. Children's increasing ability to provide global evaluations has been linked to their ability to construct an overarching emotional theme for a story (Berman & Slobin, 1994; Strömqvist & Verhoeven, 2004).

Assessment of Perspective-Taking Ability through Narratives

Despite the importance of perspective taking in children's socio-cognitive development,

the assessment of perspective-taking ability has largely been neglected in the narrative literature. O'Neill and Shultis (2007) assessed 3-, 4-, and 5-year-olds' attributions of mental perspectives to story characters through the use of toy models and narrative vignettes, and found that children at five years of age were capable of tracking the mental perspectives of different characters in their narratives. The lack of research focusing specifically on how children's perspective-taking ability manifests itself within a narrative context was the main impetus for my master's thesis research. Furthermore, I was interested in examining the development of children's *complex* emotion understanding through narrative development during middle childhood. In doing so, I examined how perspective taking and emotion understanding come together during middle childhood, and how the ability to take another person's perspective contributes to one's understanding of the concept of jealousy. Twenty-three 5- to 6-year-olds and 24 7- to 8-year-olds were administered a Test of Emotion Comprehension (TEC) and told a fictional narrative based on a picture-book *One Frog Too Many* (Mayer & Mayer, 1975) about a frog experiencing jealousy. Children's narratives were coded for thematic understanding of jealousy (i.e., inclusion of multiple components of jealousy in their story), narrative coherence and complexity, as well as their inclusion of subjective perspective taking (i.e., mention of the emotional, perceptual, and intellectual private states of the characters). Our findings (Aldrich et al., 2011) added to the literature by showing that both children's emotion understanding (i.e., TEC scores, thematic understanding of jealousy) and perspective-taking ability (i.e., narrative coherence, complexity, subjective perspective taking) increase between the ages of 5 and 8. Moreover, it was the first study to document that children's perspective-taking ability is related to their capacity to talk about a *complex* emotional theme. However, as described above, the limitations of that study left many areas for future research which are addressed in the current study.

Personal Narratives – Why Talking about One's Past Matters

As mentioned earlier, another widely used approach for evaluating children's socio-cognitive development has been through the use of personal (or autobiographical) narratives. The personal narrative consists of an individual recounting a previous experience or event. Of particular importance to the role of personal narratives in children's socio-cognitive development is that talking about past experiences gives the child the opportunity to assess different perspectives in coming to a better understanding of the experience (Fivush & Nelson, 2004). In particular, two types of personal narrative have been frequently used within the context of children's emotion understanding: *individual* and *co-constructed* with a caregiver. Traditionally, studies using individual personal narratives have asked children to talk about a time when they previously experienced a basic emotion (e.g., happiness, sadness, anger, fear) with the specific focus being on what the child emphasizes about the experience. Research utilizing co-constructed narratives has generally concentrated on discourse about preschoolers' previous experiences of basic emotions with their mothers. It has been suggested that talking about one's past emotional experiences with a caregiver is especially beneficial to children's socio-cognitive development. For instance, through talking with a mother about a past experience, a child can establish that the feelings and thoughts that they had about the event can differ from someone else's feelings and thoughts of the same event through direct comparison of what each person brings to the conversation. In doing so, parent-guided reminiscing helps children to organize, interpret, and evaluate past experiences in ways that give children the chance to cultivate their sense of self (Fivush, 2001; Fivush et al., 2006; Fivush & Nelson, 2004; Haden, Haine, & Fivush, 1997). Studies have found that caregivers do this primarily through telling coherent (i.e., providing the contexts of the experience in a sequential manner) and evaluative (i.e., providing

emotional and personal significance) narratives; and those that do this to a greater extent have children that do so as well (Haden et al., 1997).

Two approaches have traditionally been utilized within studies examining maternal reminiscing during co-constructed personal narratives in an effort to answer the question "What does the mother contribute to the conversation?" To begin, the maternal reminiscing *style* approach focuses on the process through which the mother engages the child when talking about their previous emotional experience. The work of Robyn Fivush and her colleagues has drawn attention to two maternal styles of speech that are frequently used by mothers when talking with their young children. Mothers, who exhibit a highly *elaborative* style, provide a multitude of details about the event and foster their children's involvement in the conversation by evaluating what their child has to say. In contrast, mothers who display a highly *repetitive* style, tend to focus on a few details about the event, ask redundant questions of their child, and rarely encourage their child's participation in the conversation through evaluation of their comments. While maternal reminiscing style has been found to predict children's development of autobiographical memory, literacy, narrative skills, developing theory of mind, and understanding of self and emotion (Fivush et al., 2006); maternal elaboration in particular has been found to be beneficial for children, especially girls. For instance, children of highly elaborative mothers are more elaborative themselves when recollecting previous experiences (Harley & Reese, 1999; Reese, Haden, & Fivush, 1993). Other research has shown that mothers of girls are more elaborative than mothers of boys (Fivush, Berlin, McDermott Sales, Mennuti-Washburn, & Cassidy, 2003; Reese et al., 1996); and in turn girls are more elaborative than boys (Buckner & Fivush, 1998; Fivush et al., 2003).

The second approach to evaluating maternal reminiscing speech is the *content* approach. In this approach maternal speech is examined for the specific subject matter the mother introduces to the conversation. The content approach has been primarily used to investigate gendered patterns in maternal speech as they relate to children's speech. For instance, studies have found that mothers talk more about emotions with girls than with boys, especially when those conversations are concerning experiences of sadness (Fivush & Buckner, 2000). Likewise, research has shown that by the end of preschool, girls are talking more about emotions and sadness in particular when compared to their male counterparts (Fivush & Buckner, 2000).

Regardless of the approach taken, the majority of studies to date have focused on the influence of maternal speech on gender differences in preschoolers' talk about *basic* emotions. My current research addressed a gap in the literature by investigating the role of maternal reminiscing speech on older children's talk about *complex* emotional experiences. Furthermore, by employing both conventional approaches to maternal reminiscing, I was able to examine whether maternal reminiscing *style* and *content* are equally important to the quality of children's autobiographical narratives.

Research Goals

The purpose of the current study on children's understanding of jealousy during middle childhood was two-fold. First, I aimed to investigate the role of perspective taking in children's jealousy comprehension within narrative construction. The focus of earlier research on children's emotion understanding utilizing narratives has for the most part focused on *basic* emotions with younger children. Furthermore, even fewer studies have examined the role of perspective-taking ability in children's emotion comprehension using narratives. Second, I aimed to examine

maternal influence on children's abilities to talk about jealousy experiences. To date, no studies have examined maternal reminiscing and its effect on older children's abilities to talk about *complex* emotional experiences. This is of interest because we are uninformed of the role mothers play in children's emotional discourse during middle childhood.

I examined the abilities and comprehension of a total of 80 children, between the ages of 5 and 11, using multiple narrative measures and an independent assessment of perspective-taking ability. I also included the children's mothers as an adult comparison group to children's understanding of jealousy and narrative abilities, as well as to investigate the role of maternal reminiscing speech on children's abilities. These data allowed me to address the following research questions regarding children's comprehension of jealousy during middle childhood:

- ***Research Question 1: Role of Perspective-Taking Ability***

  Can we confirm the role of perspective taking in children's jealousy understanding using an independent measure of perspective-taking ability?

- ***Research Question 2: Gender Differences in Children's Personal Narratives***

  Will girls produce more sophisticated autobiographical accounts of jealousy when compared to boys?

- ***Research Question 3: Gender Differences in Children's Reminiscing Speech***

  While discussing a previous experience of jealousy with their mother, will girls be more elaborative and emphasize emotional content more so than boys?

- ***Research Question 4: Gendered Patterns in Maternal Reminiscing Speech***

  Will mothers of girls be more elaborative and more emotion-focused than mothers of boys when discussing their child's previous experience of jealousy?

- ***Research Question 5: Role of Maternal Reminiscing***

  To what extent does maternal reminiscing influence the quality of children's talk about their own emotional experiences during middle childhood?

- ***Research Question 6: Relations across Narrative Contexts***

  Will measures of participants' talk about jealousy transfer across narrative contexts?

CHAPTER 3

Methodology

Participants

Eighty children between the ages of 5 and 11 years and their mothers participated. There were 40 girls (*M* age = 8 years, 2 months, *SD* = 2 years, 1 month; Range = 5 years, 1 month to 11years, 10 months) and 40 boys (*M* age = 8 years, 7 months, *SD* = 2 years, 0 months; Range = 5 years, 0 months to 11years, 11 months) and their mothers. Families were recruited through word-of-mouth, flyer distribution at the College of Staten Island (see Appendix A), and through the undergraduate research subject pool at the College of Staten Island, City University of New York. The majority of families lived in Staten Island, New York (52.5%) and Brooklyn, New York (27.5%). Other places of residence included: New York, New York (6.3%), Queens, New York (5.0%), Knoxville, Tennessee (5.0%), Albuquerque, New Mexico (1.3%), Ithaca, New York (1.3%), and Montclair, New Jersey (1.3%). There were no significant differences between the girls and boys in age, F (1, 78) = .97, p = .33, or residence, $\chi^2(7) = 6.08$, p = .53.

Diversity of sample. The children in the sample were predominately White (52.5%), followed by 21.3% African-American, 11.3% Bi-racial, 8.8% Hispanic, and 6.3% Asian. There were no significant differences between girls and boys in terms of ethnicity, $\chi^2(4) = 4.24$, p = .38. In terms of socio-economic status, mothers' educational background was assessed by the self-reported number of years of formal schooling. Mothers' educational background ranged from having earned a high school diploma (12 years, 3.8%) to having earned a graduate or professional degree (22 years, 8.8%). On average, mothers had a bachelor's degree (*M* = 16 years, 2 months, *SD* = 2 years, 8 months), and this was not significantly different for girls and boys, F (1, 78) = 1.16, p = .29.

Languages and family structure. English was the primary language spoken in the home for all of the children and mothers in the present study. While the majority of children that participated were from single language homes (71.3%), some mothers did report a second language spoken in the home (25%), and some reported the use of three languages (3.8%). The majority of children reported coming from multiple sibling homes (85%). The number of siblings reported by the girls ranged from 0 to 7 (M = 1.70, SD = 1.68), and the boys reported having 0 to 4 siblings (M = 1.65, SD = .92). The greater part of our sample was first born (42.5%) and second born (32.5%) children. There were no significant differences between girls and boys in terms of their number of siblings, F (1, 78) = .03, p = .87, or birth order, $\chi^2(5) = 4.44$, p = .49.

Procedure and Materials

Children and their mothers participated in one session designed to fully assess children's jealousy comprehension and narrative ability during middle childhood. For the majority of children, the researcher visited the family in their home where they were told that the researcher was interested in "how children tell stories and understand other people's feelings and the ways in which mothers play a role in this development." Children were asked to complete eight tasks and mothers were asked to complete four tasks. The tasks were presented in the same order for all participants, which are discussed in the order of presentation below. Except for the standardized assessments, all of the tasks were videotaped and children and mothers were provided a DVD of their session mailed to them if they so requested. Upon completion of the session, children were given a t-shirt and magnet of their choosing and mothers received $30 compensation for their time.

Maternal background questionnaire. After informed consent was obtained from the mothers and assent was attained from the children (see Appendices B and C respectively),

mothers were asked to fill out a short background questionnaire in order to acquire their child's birthdate, level of maternal education, languages spoken in the home, and possible birth complications that may have affected language development (see Appendix D).

Test of emotion comprehension. The first task for the children assessed their emotion understanding prior to participation in the study. Specifically, the researcher administered a standardized Test of Emotion Comprehension (TEC; Pons & Harris, 2000), which evaluates the emotional understanding of 3- to 11-year-old children (Pons, Harris, & de Rosnay, 2004). The TEC is composed of vignettes in which a character (gender-matched to the participant) encounters different situations that elicit emotional responses. After each vignette, the child was asked to identify one of four ways the protagonist feels in 9 different situations, namely: (1) represented by faces, (2) caused by external circumstances, (3) involving situations in which feelings result from desires, (4) stemming from a character's false belief, (5) elicited by reminders, (6) when a protagonist tries to control an emotion, (7) hidden emotions, (8) conflicting emotions, and (9) emotions resulting from self-restraint.

Fictional narrative - child. The second task, the fictional narrative, consisted of the child being videotaped telling a story from a wordless picture book. Specifically, the child was told "This story *One Frog Too Many* does not have any words and it is up to you to tell the story how you want." Children were then asked to "look through the book" and "start to plan out what you might want to say." The children were then allowed to look through the book as long as they liked and did not begin telling their story until the researcher had confirmed that the child was ready to do so. During the child's preview of the book, if the child had any questions as to how they should tell the story (e.g., "Can I name the little boy?", "Do I have to show the pictures?") the researcher would repeat "however you want to tell the story, it is totally up to you, it is your

story". The storybook used, *One Frog Too Many* (Mayer & Mayer, 1975), follows the adventures of a boy who receives a new frog. His older pet frog engages negatively with the new frog, bullying him throughout the story. The pictures end with an illustration of a reunion scene and its aftermath. See Appendix E for a complete listing of the central events of the story and Appendix F for sample illustrations from the book.

Probe questions. Next, after narrating the story and after the researcher had confirmed that the child was finished, the child was asked a series of probe questions designed to further elicit the child's understanding of the big frog's jealousy contained within the story. Specifically, the researcher told the child, "Okay, great job. Now I just have a few questions for you, okay? So in the story there is a big frog and a little frog right? How do you think the big frog felt? Why do you think the big frog felt that way?"

Individual personal narrative. The fourth task, or individual personal narrative, involved a series of questions asking the children to relate a past experience of jealousy in their life. The set of questions centered on the narrative theme of jealousy that the child had just encountered. In particular, after narrating the story and answering the fictional narrative probe questions, the child was then asked: "Have you ever felt like the big frog?" followed by "Can you tell me a little bit about it? and/or "Can you tell me about a time you felt like the big frog?"

Perspective-taking ability assessment. In the fifth task, I obtained a measure of children's perspective-taking ability utilizing the assessment of Selman and Byrne (1974). In doing so, children were presented with a social dilemma followed by probe questions asked to gauge their level of perspective-taking skill. Following the procedure of Selman and Byrne, children were first presented with the following social dilemma:

> Ben is a 10-year-old boy who likes to climb trees. He is the best tree climber in the neighborhood. One day while climbing down from a tall tree, he falls off the bottom branch, but does not hurt himself. His father sees him fall. His father is upset and asks Ben to promise not to climb trees anymore. Ben promises. Later that day, Ben meets Abigale. Abigale's kitten is caught up in a tree and cannot get down. Something has to be done right away or the kitten may fall. Ben is the only one who climbs well enough to reach the kitten and get it down, but he remembers his promise to his father.

Children were presented the social dilemma in video format using a portable DVD player (Panasonic 9" portable DVD player DVDLS92). The videotaped dilemma was performed voluntarily by a 9-year-old boy, 11-year-old girl, and their father who acted out their parts behaviorally, while a female narrator related the episodes of the social dilemma verbally off-screen (see Appendix G for sample pictures from the video). After watching the social dilemma, children were asked to repeat the story in order to minimize memory errors. If a child exhibited difficulty in relating the most important aspects of the story back to the researcher, the researcher had the child watch the social dilemma again. After watching the movie a second time, the child was then asked to repeat the story. The majority of children watched the social dilemma once and no children required more than two viewings in order to successfully repeat the story. After it was ensured that the child remembered the critical aspects of the social dilemma, children were asked a series of questions (described in order of presentation to child) that correspond to different levels of perspective-taking ability as outlined by Selman and Byrne (see Appendix H).

Intellectual development measures. The next three tasks consisted of standardized assessments of intellectual development. Specifically, the researcher first administered the Peabody Picture Vocabulary Test (PPVT, 4th edition, Test Version B) to the child. The PPVT

evaluates individual's receptive vocabulary. Next, children were given the Test of Nonverbal Intelligence (TONI, 3rd edition, Test Version A) which is a language-free assessment of nonverbal intelligence and reasoning abilities. Upon completion of these measures, mothers were then given the PPVT (4th edition, Test Version B) as well.

Fictional narrative – mother. Next, the mother was videotaped narrating the wordless picture book, *One Frog Too Many.* Specifically, the mother was asked to tell the story as if they were telling it to their child. Apart from this instruction, mothers were given the same directions as the children (as discussed above).

Co-constructed personal narrative. The last task consisted of the child and their mother being asked to recount an episode where the child previously experienced jealousy. Specifically, the researcher said, "Now I would like the two of you to talk about a time that [child] felt jealous." If the mother or child had any questions as to how they should structure their conversation or what they should talk about, the researcher repeated that she was interested in the child's previous experience of jealousy and that the two were free to talk about it in any way that they liked. Some participants, at the beginning of the mother-child conversation, tended to address the researcher in reporting the child's experience. When that occurred, the researcher reminded the dyad that she wanted the mother and child to talk together about the experience and not as an act of reporting to her (e.g., "Can you two talk together about it?", "Can you talk to mommy about it and not me?"). Once the researcher confirmed that the mother and child were done discussing the experience, the child and mother were thanked for their participation in the study, received their compensation, and discussed when they would receive their DVD. If the mother seemed amenable, the researcher asked her to take a few flyers should she come across anyone else who might want to participate.

Coding and Scoring

Test of emotion comprehension. Following the standard TEC scoring procedure, for each of the nine different aspects of emotion assessed, children received a point when they specified the correct emotion. An overall TEC score was calculated for each child by adding the points received from the nine aspects of emotion with a possible range on the TEC from 0 to 9.

Fictional narratives. All of the videotaped tasks for children and mothers were transcribed verbatim using min-CHAT (MacWhinney & Snow, 1990). The fictional narratives were then coded utilizing the three-step process described below.

Narrative coherence. The first step of the coding process focused on computing scores for the presence or absence of story structure features and story events. Originally adapted from Uchikoshi (2005) and Willenberg and Kang (2001), the current measure was modified from the one used by Aldrich et al. (2011) to be a more conservative evaluation of narrative coherence. Specifically, each story was coded utilizing a checklist method where the participant received points for the inclusion of a specific item, regardless of how many times she or he referenced it. The sum of points received within each category (i.e., story structure features, story events) produced the score for that story aspect. The scores from the story structure features and story events were then added together to yield a total combined narrative coherence score. Scores for the combined narrative coherence measure ranged from 0 to 21. See Appendix I for the complete narrative coherence measure.

Story structure features. This coding aspect focused on features of story structure, such as the inclusion of: an abstract (e.g., giving the story a title), introduction to the story, character orientation, setting orientation, event orientation, character delineation, and coda or conventional

story closings. This category also included other instances of the use of storybook language such as the use of conjoined phrases (noun, verb, or adverbial). In addition, the sophistication of the narrator's provision of temporality and reference was assessed through their use of connectives and story character introduction. For instance, participants received a score of zero for not using connectives in their story, a score of one for the use of basic connectives (e.g., and, so, then), and a score of two for the use of more sophisticated connectives (e.g., before, when, finally). Similarly, participants received a score based on the way in which they introduced the first story character. If the narrator did not mention a story character in the beginning of the story, they received a score of zero, a score of one indicated that the participant used an unspecified pronoun (e.g., he, they, one) to refer to the initial story character, a score of two indicated that they used a presupposed reference utilizing a definite article and a noun to refer to the first story character (e.g., the pets, the boy), and a score of three was received if the narrator referred to the first story character through use of a non-presupposing introduction using an indefinite article and a noun or a number (e.g., a dog, three pets). Overall, the range of possible scores for story structure features was 0 to 13.

Story events. Next, participants were given a point for each of the eight narrative events identified within *One Frog Too Many* considered to be significant for the story's plot and conveying the characters' actions. The range of possible scores for the event coding was 0 to 8.

Thematic understanding of jealousy. The second step of the coding process examined participants' thematic understanding of the story. Whether or not, and to what degree, narrators attributed the emotion of jealousy to the big frog was identified. Participants were given credit for understanding a variety of negative emotions, cognitions, and behaviors related to the complex emotion of jealousy, even if they never labeled jealously explicitly. Based on the

concept of jealousy as referring to the feelings, thoughts, and behaviors that occur when a person believes an important relationship is being threatened by a rival, each narrator received points along a continuum of their understanding of jealousy that were combined to generate an overall thematic understanding score (Aldrich et al., 2011). Specifically, participants received one point for each type of basic negative emotion ascribed to the big frog (e.g., anger, sadness, fear, disgust, contempt) with points ranging from 0 to 5. If the narrator explicitly labeled the big frog as feeling jealous, they received the full 5 points. Next, participants received an additional point for the identification of the rival in the story (e.g., the new frog). A point was also received for indicating a behavioral reaction indicative of jealousy (e.g., the big frog went off by himself in the forest). Another point was received for referencing a mental state or cognition relative to the big frog's jealousy (e.g., the big frog thought that the boy would no longer love him). Narrators also received an additional point for acknowledgment that the new frog interferes with the big frog's relationship with the boy or family. Thus, overall thematic understanding scores ranged from 0 to 9. See Appendix J for the thematic understanding coding sheet.

Emotion expression. The final step in the fictional narrative coding process was to categorize the participants' use of emotion state words. In particular, narrators' emotion words were first categorized according to the type of emotion referenced. Categories of emotion were initially based on Paul Ekman's (1992) classification system of the basic or primary emotions: happiness (e.g., content, happy), sadness (e.g., sad, depressed), anger (e.g., angry, mad), fear (e.g., scared, horrified), surprise (e.g., surprised, shocked), disgust (e.g., disgust, grossed out), and contempt (e.g., hate, dislike). I also included categories to include complex emotions: jealousy (e.g., jealous), other positive emotions (e.g., love, proud), and other negative emotions (e.g., guilty, embarrassed). Based on Cervantes and Callanan (1998), the emotion state words

were then coded as functionally occurring as labels or explanations. Emotion explanations are emotion words used with causal information (e.g., *The boy was happy that he received a present.*), but not necessarily with causal language (e.g., because; *The boy was happy. It was his birthday.*). Emotion labels, on the other hand, are the inclusion of emotion words without causal information (e.g., *The big frog was mad.*). Narrators were given credit for each occurrence of labels and explanations within each emotion category. Sums across all emotion categories for labels and explanations yielded overall emotion labels and emotion explanations scores which were then used for analyses.

Probe questions. Children's responses to the probe questions "How do you think the big frog felt? and "Why do you think the big frog felt that way?" were coded using the two-step process as follows.

Emotion expression. First, children's use of emotion state words were coded using the same coding scheme of emotion labels and emotion explanations (as listed above), with their overall emotion labels and emotion explanations scores used for analyses.

Affect reasoning. Next, children's responses to the question "Why do you think the big frog felt that way?" were coded according to whether or not they gave a jealousy reason. Specifically, children were given one point if they gave a jealousy reason and zero points for a non-jealousy reason. Jealousy reasons included statements based on loss of affection (e.g., "*he felt like Timmy liked the new frog better than him*", "*because Charlie loves the little frog*"), as well as motivations based on lack of attention (e.g., "*all the attention was on the little frog and not on him*") or replacement (e.g., "*because he wanted to be the only frog*"). Categories of non-jealousy reasons included motivations based on other characters' actions (e.g., "*because the little boy yelled at him*"), the big frog's aggressive actions towards the little frog (e.g., "*because he*

kicked him"), physical attribute comparisons (e.g., "*because he was bigger than the little one*", "*because the new frog was cuter*"), or emotional (e.g., "*because he disliked the little frog*"). Children were only given credit for the type of reason they gave, thus affect reasoning scores were binary (i.e., 0 or 1).

Individual personal narratives. In order to assess the quality of children's autobiographical accounts of jealousy, their individual personal narratives were coded according to the emotion expression coding from above. Specifically, children's discourse was coded for the inclusion of emotion labels and emotion explanations, with the overall frequencies of emotion labels and emotion explanations scores used in the analyses.

Perspective-taking ability. Children's answers to the perspective-taking ability questions were coded utilizing a coding scheme adapted from Selman and Byrne (1974). Whereas those authors gave children credit for the highest level of perspective taking achieved during the assessment, I created a continuous measure of perspective-taking skill based on children's answers to the social dilemma questions. Specifically, children were given credit (one point) for showing evidence of the level of perspective taking that each question assessed (subjective, self-reflective, or mutual). Questions 1 through 3 assessed children's perspective-taking ability at the *subjective* level. In order for a child to receive credit for these questions, they were required to display awareness that the characters' had different viewpoints of the situation because they had access to different information. For instance, when asked "Does Abigale know why Ben cannot decide whether or not to climb the tree?" a child responding "*No, because Abigale wasn't around when Ben made the promise to his father and she can't really read Ben's thoughts and so she doesn't really know that he's having a conflict with the promise that he made to his father.*" would receive one point. Another child whose response to the same question was

"*Yeah he promised his dad.*" did not receive credit for exhibiting subjective perspective-taking ability. Questions 4 and 5 were used to evaluate children's abilities at the *self-reflective* level. For these questions, children were required to display knowledge that the characters' perspectives were influenced by the other characters' perceptions of the situation. For example, in response to the question of "Does Ben think his dad will understand why he climbed the tree if he climbs it?" a child answering "*I think that Ben's dad will probably still be pretty upset at Ben depending on how understanding his dad is. He might be a little bit upset at Ben breaking a promise but I think Ben's dad would probably understand that Ben like felt the need to climb up and save Abigale's kitten because he saw how sad Abigale was and he didn't want Abigale to feel sad and so he wanted to climb up and get the kitten so that she wouldn't have to feel so sad*." would receive one point. Another child, on the other hand, responding "*Ben's father will be disappointed.*" would receive no credit for this question at the self-reflective stage. Questions 6 and 7 were used to measure children's abilities at the *mutual* perspective-taking level. In order to receive credit, children were required to reference the viewpoint of an impartial third-party outside of the immediate situation that assessed the perspectives of the characters in the situation simultaneously. For instance, when answering the question "What does Ben think most people would do in this situation?" a child responding "*He thinks most people would climb the tree and help the cat and their parents would still be okay with it because it was like an emergency and he was helping out.*" would receive one point. Another child replying "*He would say I'm sorry.*" would not receive credit for providing evidence of mutual perspective-taking skill. The points from each question were then added together to create an overall perspective-taking ability score which ranged from 0 to 7.

Intellectual development measures. Participants' performance on the assessments of receptive language ability and nonverbal intelligence were scored according to the standard procedures for the PPVT and TONI. Raw scores from each test were used for all analyses.

Co-constructed personal narratives. Conversations between the mothers and their child regarding an episode where the child previously experienced jealousy were coded for reminiscing style and content according to the procedure of Fivush et al. (2003). Specifically, transcripts of the conversations were first divided into conversational utterances (subject-verb phrase constructions). During the course of the task, some mother-child dyads talked about more than one previous experience of jealousy. In these cases, the event comprising the highest number of conversational utterances was examined and only utterances concerning this event were coded. The co-constructed narratives were then coded for both the mother's and child's reminiscing style and content. Specifically, each utterance was coded twice, once for reminiscing style and then again for reminiscing content, according to the categories below. Four other types of utterances were also coded, but were not included in analyses: off-topic (e.g., utterances regarding another event or something occurring during the task itself), remember prompts (e.g., "*Do you remember?*", "*What happened?*"), place holders (e.g., "*I don't know.*", "*What?*"), and yes/no responses. Both mother's and child's overall frequency of use of each type of reminiscing style and content listed below were included for analyses. See Appendix K for an example of a coded conversation.

Reminiscing style. First, each utterance was coded for reminiscing style according to three mutually exclusive categories. *Elaborations* consisted of utterances where the speaker introduced new elements that enhanced the conversation. These were utterances where what was mentioned had not yet been mentioned by either speaking partner. *Evaluations* included

utterances where the speaker agreed, disagreed, or questioned the previous statement. Utterances that did not contain any new information, or consisted of details that either partner had previously mentioned, were coded as *repetitions*.

Reminiscing content. Second, each utterance was coded again for the topic of the utterance within three mutually exclusive categories. Utterances that contained *facts* referred to actions, objects, or descriptions of the event. *Resolutions* were utterances that introduced coping strategies or tried to resolve the negative emotional experience. Utterances that attributed an emotional state to an individual (either through explicit use of emotion terms or referencing behavioral expressions of emotion), explained the causes of an emotion, or defined an emotion were coded as *emotion states*.

Reliability. Inter-coder reliability was attained separately for each of the coding schemes (for both children's and mother's speech separately) and was evaluated with kappa coefficients. Specifically, reliability for each coding step was achieved by the researcher and a trained research assistant who independently coded 20% to 25% of the data set. For each coding scheme, almost perfect agreement was achieved (i.e., all kappa coefficients were between 0.81 and 1.00; Landis & Koch, 1977). For each coding step, all disagreements between the coders were resolved through discussion and all final coding was completed by the primary investigator. Inter-rater reliability for both child and maternal speech is presented in Table 1 by speaker and coding scheme.

Table 1

Inter-Rater Reliability for Participants' Discourse

Task	Measure	% of Data Set	Kappa Coefficient
Children's Speech			
Fictional Narrative	Narrative Coherence - Story Structure Features	20%	0.86
	Narrative Coherence – Story Events	20%	0.89
	Thematic Understanding of Jealousy	25%	0.89
	Emotion Labels	20%	1.00
	Emotion Explanations	23%	0.95
Probe Questions	Emotion Labels	20%	0.85
	Emotion Explanations	20%	0.81
	Affect Reasoning	25%	0.84
Individual Personal Narrative	Emotion Labels	20%	0.92
	Emotion Explanations	20%	0.87
Perspective Taking Test	Perspective-Taking Ability	20%	0.89
Co-constructed Narrative	Reminiscing Style	23%	0.94
	Reminiscing Content	23%	0.87
Maternal Speech			
Fictional Narrative	Narrative Coherence – Story Structure Features	20%	0.83
	Narrative Coherence – Story Events	20%	0.93
	Thematic Understanding of Jealousy	25%	0.84
	Emotion Labels	21%	0.88
	Emotion Explanations	21%	0.82
Co-constructed Narrative	Reminiscing Style	23%	0.83
	Reminiscing Content	23%	0.81

CHAPTER 4

Results

Data Transformation and Analysis Plan

I first conducted Shapiro-Wilk tests of normality on all frequency scores. Next, I performed square root transformations on all of the frequency scores (i.e., use of emotion labels and emotion explanations in the fictional narratives, probe questions, and individual autobiographical narratives, and mothers' and children's use of reminiscing styles and content types) in order to adhere to normality assumptions in later analyses. Specifically, I utilized the technique of Cohen, Cohen, Aiken, and West (2002) where in order to treat frequencies of 0 and 1 the same as other values (since taking the square root of 0 and 1 does not change these values), I added 2 to each value before taking the square root of each frequency.

In order to address the six research queries I put forth above, I conducted six sets of analyses. The order of presentation is as follows. First, I report the results of the socio-cognitive development measures (i.e., TEC, perspective-taking ability) and intellectual development measures (i.e., PPVT, TONI) and their relationships with children's age. Next, I examined the development of children's understanding of jealousy within the context of the fictional narrative. Third, I examined children's responses to the post-story probe questions. Fourth, I report the analyses concerning children's individual personal narratives. Fifth, the results regarding mother-child reminiscing, and its possible influence on children's autobiographical accounts of jealousy, are presented. Finally, I examined relationships between children's and mothers' abilities across all tasks used in the current study.

For each set of analyses (where appropriate), I first present the descriptive statistics, relationships with children's age (and comparisons to the mothers if applicable), examine

possible gender differences, and assess the content of the narrative task through qualitative analyses. Next, I present the assessment of possible interrelationships between the different measures. Third, I report the results of regression analyses that were employed to directly answer the research question of interest. For each regression model, collinearity diagnostics were conducted prior to examining the results of the regression, in order to confirm that all predictor variables could be entered into the model simultaneously. The collinearity statistics of tolerance (all tolerance values > .10) and variance inflation factors (all VIFs < 5) indicated inconsequential collinearity for all models in the current study (Menard, 1995; Neter, Wasserman, & Kutner, 1989). Finally, in order to demonstrate the developmental progression of children's abilities across middle childhood, I include qualitative examples of children's emotional discourse within the narrative task.

Relationships between Age and Children's Socio-Cognitive and Intellectual Development Measures

The means and standard deviations for the socio-cognitive and intellectual development measures for the sample are presented in Table 2 by gender. Correlation analyses revealed that all child scores increased with age: overall emotion understanding (TEC scores; $r(78) = .58$, $p < .001$), perspective-taking ability ($r(78) = .70$, $p < .001$), receptive verbal intelligence (PPVT raw scores; $r(78) = .71$, $p < .001$), and nonverbal intelligence (TONI raw scores; $r(78) = .66$, $p < .001$) (after Bonferroni correction; alpha level set at .01). Mothers' verbal intelligence, however, was not related to children's age (PPVT raw scores; $r(78) = .14$, $p = .22$). There were no differences between the girls and boys in their age, TEC, Perspective-Taking Ability, PPVT, TONI, or Maternal PPVT scores (one-way ANOVAs, all ps > .05).

Table 2

Descriptive Statistics for the Socio-Cognitive and Intellectual Development Measures by Gender (standard deviations in parentheses)

			Gender	
		Total Sample (n = 80)	Girls (n = 40)	Boys (n = 40)
Age (years; months)	Mean	8;5 (2;1)	8;2 (2;1)	8;7 (2;0)
	Range	5;0 to 11;11	5;1 to 11;10	5;0 to 11;11
TEC Scores (maximum score = 9)	Mean	7.05 (1.50)	6.93 (1.59)	7.18 (1.41)
	Range	3 to 9	3 to 9	4 to 9
Perspective-Taking Ability Scores (maximum score = 7)	Mean	3.15 (1.91)	3.23 (1.92)	3.08 (1.93)
	Range	0 to 7	0 to 7	0 to 7
Child PPVT (Raw Scores)	Mean	142.82 (32.81)	141.65 (30.53)	144.00 (35.30)
	Range	67 to 203	87 to 193	67 to 203
TONI (Raw Scores)	Mean	19.26 (10.37)	18.15 (9.78)	20.38 (10.94)
	Range	4 to 40	4 to 37	4 to 40
Maternal PPVT (Raw Scores)	Mean	203.19 (16.37)	205.28 (14.97)	201.10 (17.59)
	Range	164 to 228	171 to 228	164 to 225

Fictional Narrative Measures

Relationships with age. The descriptive statistics for children's narrative coherence, thematic understanding of jealousy, and use of emotion language in the fictional narrative for the sample are provided in Table 3 by gender. After Bonferroni correction (alpha level set at .013),

Table 3

Descriptive Statistics for Children's Fictional Narrative Measures by Gender (standard deviations in parentheses)

		Total Sample (n = 80)	Gender	
			Girls (n = 40)	Boys (n = 40)
Narrative Coherence (maximum score = 21)	Mean	14.18 (3.23)	14.20 (3.47)	14.15 (3.03)
	Range	2 to 20	2 to 20	7 to 19
Thematic Understanding (maximum score = 9)	Mean	2.83 (2.54)	2.78 (2.57)	2.88 (2.53)
	Range	0 to 9	0 to 9	0 to 9
Emotion Labels (frequency)	Mean	5.19 (5.85)	4.58 (4.70)	5.80 (6.82)
	Range	0 to 32	0 to 22	0 to 32
Emotion Explanations (frequency)	Mean	4.72 (4.68)	4.25 (3.50)	5.20 (5.62)
	Range	0 to 29	0 to 13	0 to 29

age was found to be significantly correlated with children's narrative coherence ($r(78) = .51$, $p < .001$), thematic understanding of jealousy ($r(78) = .43$, $p < .001$), and children's inclusion of emotion explanations in the fictional narrative ($r(78) = .52$, $p < .001$; see Figure 1 for children's use of emotion labels and explanations by age). Older children displayed more understanding of the jealousy theme of the story, and told more coherent narratives with more emotion explanations than did younger children.

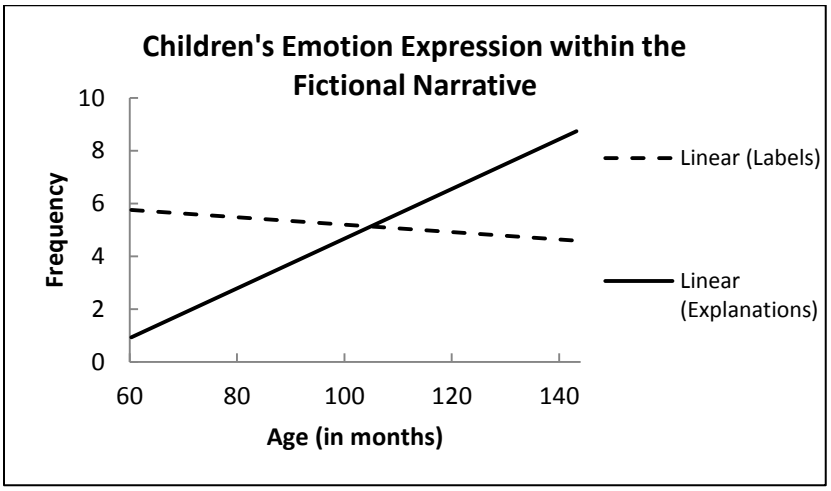


Figure 1. Trend lines from correlation analyses between children's age and their use of emotion expression during the fictional narrative task (emotion labels: $r(78) = -.04$, $p = .74$, emotion explanations: $r(78) = .52$, $p < .001$).

Next, in order to further examine the development of these abilities, I compared children's fictional narrative measures to the mothers' through a series of one-way ANOVAs. Table 4 includes the descriptive statistics for mothers' narrative coherence, thematic understanding of jealousy, and emotion expression during the fictional narrative (presented by children's gender).

Table 4

Descriptive Statistics for Maternal Fictional Narrative Measures by Children's Gender (standard deviations in parentheses)

			Child Gender	
		Total Sample (n = 80)	Daughters (n = 40)	Sons (n = 40)
Narrative Coherence (maximum score = 21)	Mean	16.21 (2.11)	16.43 (1.99)	16.00 (2.23)
	Range	11 to 20	12 to 20	11 to 20
Thematic Understanding (maximum score = 9)	Mean	5.20 (2.26)	4.93 (2.31)	5.48 (2.20)
	Range	1 to 9	1 to 9	2 to 9
Emotion Labels (frequency)	Mean	8.28 (5.87)	8.90 (6.16)	7.65 (5.58)
	Range	0 to 30	0 to 30	0 to 24
Emotion Explanations (frequency)	Mean	8.95 (4.97)	9.03 (5.29)	8.88 (4.69)
	Range	2 to 29	2 to 29	3 to 29

Analyses revealed that mothers told more coherent fictional narratives than children, $F(1, 158) = 22.29$, $p < .001$ (see Figure 2 below).

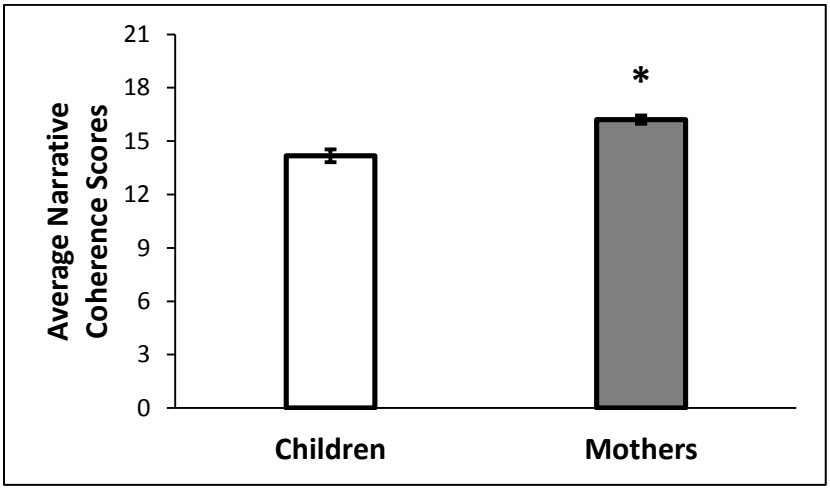


Figure 2. Mean differences between children's and mothers' narrative coherence scores.

In addition, as shown in Figure 3 below, mothers were found to display significantly more thematic understanding of jealousy than children, $F(1, 158) = 39.16$, $p < .001$.

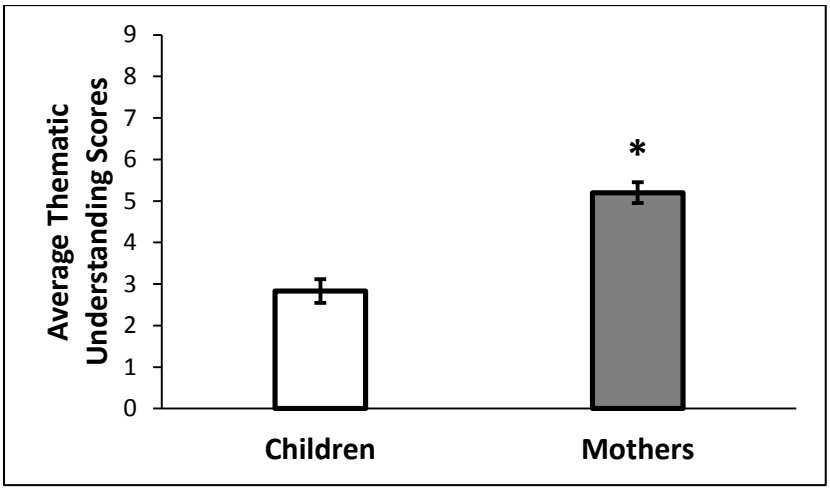


Figure 3. Mean differences between children's and mothers' thematic understanding of jealousy.

In regards to the use of emotion language during the fictional narrative (see Figure 4), mothers used significantly more emotion labels than did children, $F(1, 158) = 14.72$, $p < .001$. Analyses also revealed that mothers included more causal explanations for emotion in their stories when compared to children, $F(1, 158) = 43.67$, $p < .001$.

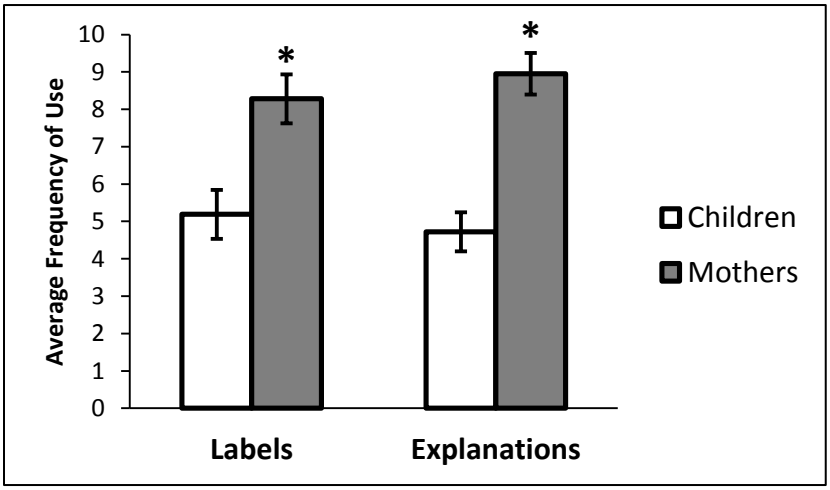


Figure 4. Mean differences between children's and mothers' emotion expression during the fictional narrative.

Gender effects. Next, a series of one-way ANOVAs revealed no significant differences between girls and boys in their narrative coherence, thematic understanding, or use of emotion language in the fictional narratives (all *p*s > .05). In addition, there were no significant differences between mothers of girls and mothers of boys in their narrative coherence, thematic understanding of jealousy, or use of emotion language in their fictional stories (all *p*s > .05).

Qualitative assessment of emotional content. Finally, in order to explore differences between children's and mothers' emotional discourse, I examined the types of emotion referred to in the fictional narratives. Specifically, I collapsed the use of emotion labels and emotion explanations across the different categories of emotion for both children and mothers. As shown

in Figure 5 below, children's emotional discourse predominately included instances of happiness, sadness, and anger when telling the story about the big frog's rivalry with the little frog. Instances of jealousy comprised only 6% of children's emotion talk when telling the story. Similarly, mothers' emotional content (see Figure 6) focused on instances of sadness and

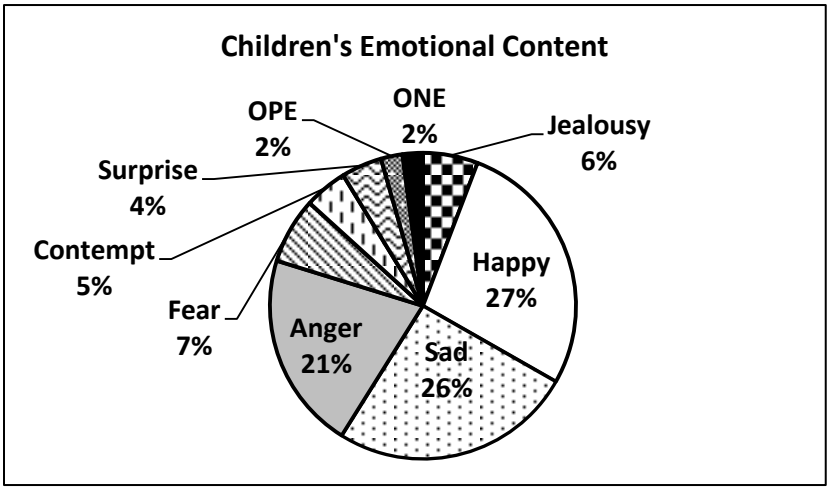


Figure 5. Children's overall use of emotion types during the fictional narrative task (Total Emotion Words = 793; OPE = Other Positive Emotion, ONE = Other Negative Emotion).

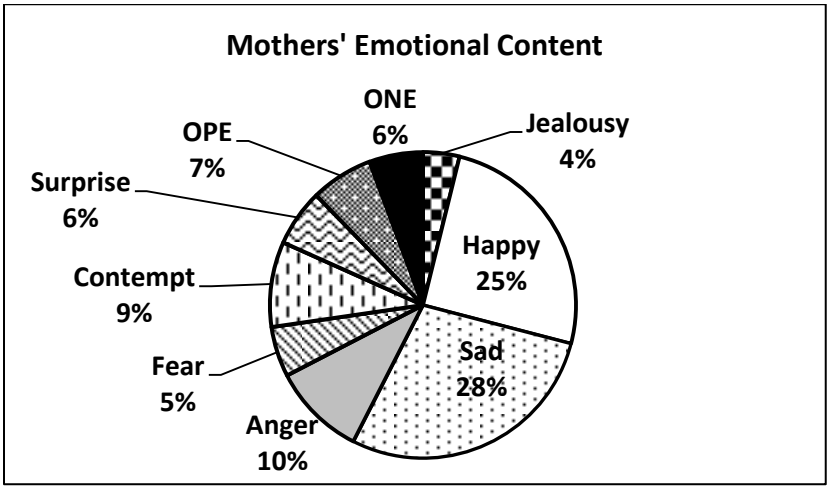


Figure 6. Mothers' overall use of emotion types during the fictional narrative task (Total Emotion Words = 1378; OPE = Other Positive Emotion, ONE = Other Negative Emotion).

happiness, with only 4% of mothers' emotion talk including explicit references to jealousy. A main difference between children's and mothers' emotion talk during the story was that a large amount of emotion talk by children were instances of anger, while mothers talked about anger as well as contempt (e.g., hatred, disliking the little frog). Mothers also referred more to the other positive and negative emotions that included more complex emotions, such as talk about the little boy loving the little frog and the big frog feeling guilty for his aggressive actions toward the little frog.

Children's Responses to the Probe Questions

Relationships with age. Next, I examined children's emotion expression within their responses to the post-story probe questions: "How do you think the big frog felt?" and "Why do you think the big frog felt that way?" Table 5 includes the descriptive statistics for children's use of emotion expression for the sample by gender.

Table 5

Descriptive Statistics for Children's Emotion Expression during the Probe Questions by Gender (standard deviations in parentheses)

			Gender	
		Total Sample (n = 80)	Girls (n = 40)	Boys (n = 40)
Emotion Labels (frequency)	Mean	.78 (.69)	.75 (.63)	.80 (.76)
	Range	0 to 3	0 to 3	0 to 3
Emotion Explanations (frequency)	Mean	1.05 (1.27)	1.27 (1.57)	.83 (.84)
	Range	0 to 9	0 to 9	0 to 3

After a Bonferroni correction (alpha level set at .025), there was no significant relationship between children's age and their use of emotion labels ($r(78) = -.04$, $p = .72$; see Figure 7 for children's emotion expression during the post-story probe questions as a function of age).

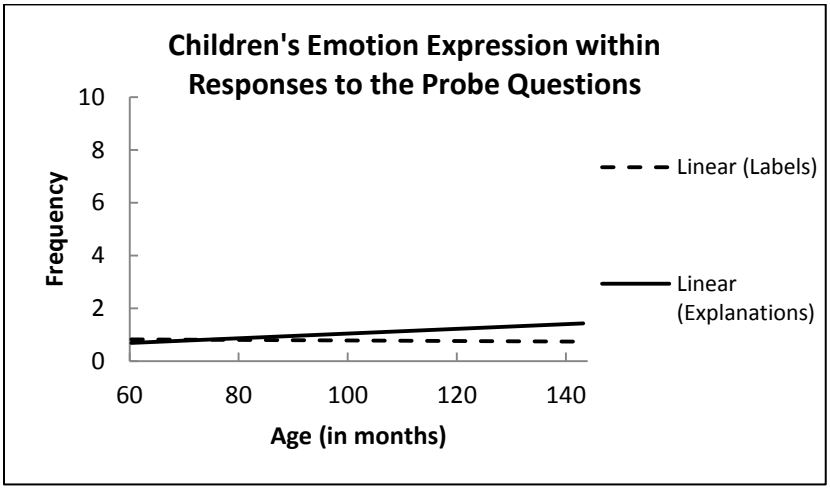


Figure 7. Trend lines from correlation analyses between children's age and their use of emotion expression during the post-story probe questions (emotion labels: $r(78) = -.04$, $p = .72$, emotion explanations: $r(78) = .20$, $p = .08$).

The correlation analysis of children's age and their use of emotion explanations during the probe questions revealed a trend of older children including more emotion explanations in their answers than younger children, however this relationship was not significant ($r(78) = .20$, $p = .08$). In addition, a series of one-way ANOVAs revealed no significant differences between girls' and boys' use of emotion expression in their responses to the post-story probe questions (all ps > .05).

Next, I examined specific responses to the second probe question: "Why do you think the big frog felt that way?" through children's affect reasoning scores. Analyses revealed that the majority of children attributed a jealousy reason to the big frog's feelings when answering the

probe question, 64% (n = 51). In order to examine the effect of age in children's affect reasoning, I conducted a one-way ANOVA on children's age (in months) between children who gave a jealousy reason (n = 51) and the children who gave a non-jealousy reason (n = 29). Results revealed that children who gave a jealousy reason (M = 9 years; 4 months, SD = 1;8) were significantly older than the children who gave a non-jealousy reason (M = 6 years; 9 months, SD = 1;7), $F(1, 78) = 44.54$, $p < .001$. Lastly, there was no gender difference between girls' and boys' affect reasoning scores; both girls and boys were equally likely to attribute a jealousy reason for the big frog's feelings, $\chi^2 (1, N = 80) = 0.05$, $p = .82$.

Qualitative assessment of emotional content. Next, I examined the emotional content of children's responses by collapsing emotion labels and emotion explanations across emotion types. As shown in Figure 8 below, when asked specifically to identify how the big frog felt and

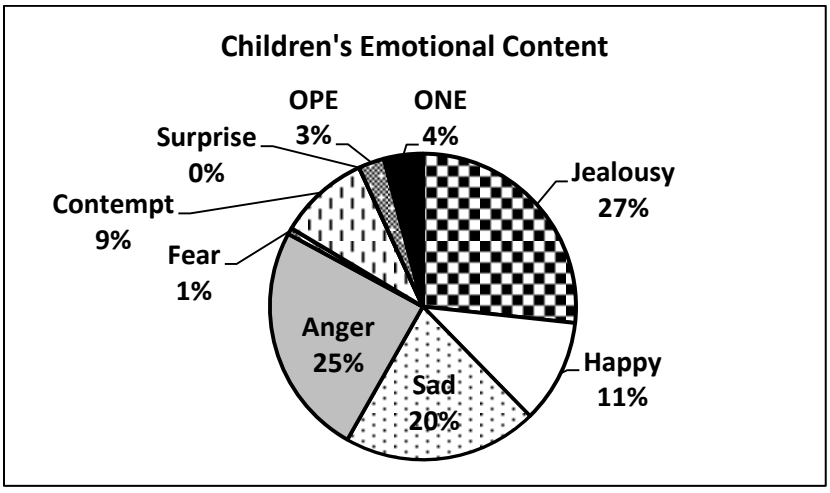


Figure 8. Children's overall use of emotion types during the post-story probe questions (Total Emotion Words = 146; OPE = Other Positive Emotion, ONE = Other Negative Emotion).

why, children's answers predominately included explicit references to jealousy, anger, and sadness. Children also included references to the big frog's contempt (e.g., hatred or dislike) for the little frog and the big frog's happiness in causing harm to his rival.

Relationships between Children's Social-Cognition and Fictional Narrative Measures

Next, I examined correlations between children's TEC scores, perspective-taking ability, narrative coherence, thematic understanding of jealousy, use of emotion labels and explanations in the fictional narrative and post-story probe questions, and affect reasoning scores while controlling for children's age, and verbal and nonverbal intelligence (PPVT and TONI raw scores; see Table 6). After Bonferonni correction (alpha level set at .001), children's thematic understanding of jealousy correlated significantly with their use of emotion labels and their use of emotion explanations within the fictional narrative: Children who displayed more understanding of the jealousy theme of the story tended to include more emotion labels and more causal explanations for emotion in their telling of the story than children who displayed less jealousy understanding.

Table 6

Correlations between Children's Emotion Comprehension, Perspective-Taking Ability, and Narrative Measures (after partialling out effects of age and verbal and nonverbal intelligence and after Bonferroni correction; df = 75)

	2	3	4	5	6	7	8	9
1. TEC	.15	-.02	.06	-.09	-.02	-.01	.17	.11
2. Perspective-Taking Ability	--	-.03	.19	-.05	.20	.10	-.06	.11
3. Narrative Coherence	--	--	.21	.15	.06	-.17	.14	.18
4. Thematic Understanding	--	--	--	.40*	.54*	.20	.05	.24
5. Story Emotion Labels	--	--	--	--	.36	.16	-.01	.27
6. Story Emotion Explanations	--	--	--	--	--	.12	-.16	.22
7. Probe Emotion Labels	--	--	--	--	--	--	-.16	.14
8. Probe Emotion Explanations	--	--	--	--	--	--	--	-.18
9. Affect Reasoning (1 = Jealousy)	--	--	--	--	--	--	--	--

*$p < .001$

Predictors of Children's Perspective-Taking Ability, Narrative Coherence, and Thematic Understanding of Jealousy

Concerning *Research Question 1*, I examined the role of perspective taking in children's understanding of jealousy using an independent measure of perspective-taking ability and multiple measures of children's emotion understanding. In doing so, I employed the same statistical technique used in my previous research. Specifically, I first conducted a simultaneous regression analysis, which determines the contribution of each predictor over and above all the other predictors, to predict children's perspective-taking ability. Three variables were included as predictors:[1] age, TEC scores, and PPVT scores. The results of the regression analyses are shown in Table 7. Both age and PPVT scores were highly predictive of children's perspective-taking ability, together accounting for 57% of the variance in children's perspective-taking ability. Older children and those with higher verbal intelligence displayed more perspective-taking ability than did younger children and children with lower verbal intelligence.

Secondly, I conducted a simultaneous regression analysis with narrative coherence as the outcome variable, and with age, TEC scores, PPVT scores, and perspective-taking ability as predictors. As shown in Table 7, PPVT scores were predictive of children's narrative coherence (accounting for 35% of the variance in children's narrative coherence); children with higher verbal intelligence told more coherent narratives than children with lower verbal intelligence.

[1] Preliminary analyses failed to find any predictive power of children's nonverbal intelligence or gender differences in children's abilities or use of emotion language. Therefore, TONI raw scores and gender were not included in the final analyses as predictor variables.

Table 7

Standardized Regression Coefficients Obtained from Multiple Regressions with Perspective-taking (PT) Ability, Narrative Coherence, and Thematic Understanding of Jealousy as Outcome Variables and Age, Emotion Comprehension (TEC), Verbal Intelligence (PPVT), Perspective-Taking Ability, and Narrative Coherence as Predictor Variables

Predictor Variables	PT Ability β	Narrative Coherence β	Thematic Understanding β
Age (months)	.41***	.23	.08
TEC Scores	.13	-.02	.05
PPVT Raw Scores	.31**	.45**	(not entered)
PT Ability	--	-.04	.28†
Narrative Coherence	(not entered)	--	.25*
R^2 Total	.57	.35	.29
Model *F*	33.10***	10.29***	7.56***

†$p < .06$, *$p < .05$, **$p < .01$, ***$p < .0001$

Third, I conducted a simultaneous regression analysis with thematic understanding of jealousy as the outcome variable, and with age, TEC scores, perspective-taking ability, and narrative coherence as predictors. Given that PPVT scores predicted both perspective-taking ability and narrative coherence, I did not enter PPVT scores into the model. Narrative coherence predicted children's thematic understanding of jealousy, with children who told more coherent stories displaying more thematic understanding than children who told less coherent stories. In addition, a trend was found for perspective-taking ability, with children with more perspective-taking ability tending to include more components of the jealousy theme in their story than children with less perspective-taking ability. Together, narrative coherence and perspective-taking ability accounted for 29% of the variance in thematic understanding.

Qualitative assessment of children's thematic understanding of jealousy. In order to demonstrate the developmental progression of children's thematic understanding of jealousy, I

have also included examples of children's discourse of the big frog's feelings and actions as stated in their fictional narratives as a function of children's age and the predictor variables (i.e., emotion comprehension, perspective-taking ability, narrative coherence) included in the regression analysis. In order to do so, I selected children at each age (broken down by age in years) that scored either the lowest or highest on thematic understanding of jealousy for each age group. For brevity, I report examples from 5-, 7-, 9-, and 11-year-olds (see Table 8). In general, older children included more components of jealousy in their telling of the story and a comparison of the children's thematic understanding of jealousy in each age group shows a large amount of variability in thematic understanding scores. For instance, when looking at the 5-year-olds, we can see that the lowest score was a 0 and the highest was a 2 (e.g., attributing one basic negative emotion to the big frog and identification of the rival). For the 7-year-olds, the lowest score was again a 0, but the highest score (an 8) was from a little girl's story that included her explicitly labeling the big frog as jealous, identifying the rival (*the baby frog*), mentioning a behavioral reaction (*he did mean things to the baby frog*), and including a cognition or mental state of the big frog's jealousy actions (*the jealous frog was happy that he got him off* [the boat]). The lowest score for the 9-year-olds was a 2 meaning that all of the children in this age group mentioned at least a basic negative emotion and identified the rival. The highest score for the 9-year-olds, an 8, was from a little boy who explicitly mentioned the big frog's jealousy towards the little frog (rival), the big frog's cognition (*jealous because he knew that a new frog would get more attention*), and the little frog's relationship interference (*because he was getting all the attention*). The 11-year-olds' minimum scores for thematic understanding were also 2, and the highest was a 9 (the highest score possible). The 11-year-old boy's story that received a score of 9 included all of the components of jealousy assessed in the current study's thematic

understanding coding scheme: explicit mention of the big frog's jealousy, identification of the rival, behavioral reaction (*then he kicks uh younger frog off the turtle, he apparently he's still feeling those emotions of jealousy*; *the older frog is making fun of the newer frog and … just teasing him for being like new*), cognition or mental state (*he was really trying to…show that he was better than the younger frog*), and relationship interference (*the younger frog is getting more attention than the older one because he's new).* Based on the qualitative analysis, we can also see the individual differences based on perspective-taking ability and narrative coherence that were shown in the regression analysis. For instance, in comparisons of the children scoring lower versus the children scoring higher on thematic understanding within age groups shows that except for the 7-year-olds, the children including more components of jealousy in their stories also exhibited more perspective-taking ability than their counterparts who scored lower on thematic understanding. As far as narrative coherence, we can see that except for the 11-year-olds, the children with higher thematic understanding of jealousy scores also told more coherent stories than their lower thematic understanding of jealousy counterparts.

Table 8

Qualitative Demonstration of the Developmental Progression of Children's Thematic Understanding of Jealousy.

Children with Less Thematic Understanding of Jealousy			Children with More Thematic Understanding of Jealousy		
Child		Thematic Understanding	Child		Thematic Understanding
Age	**5;2**	…and he opened the presents…and the boy took it out and the frog was happy, and the other frog was happy. **Score = 0**	Age	**5;10**	…the boy opens some presents and he wonders what's inside. Apparently he shouts, it was another frog and the other frog was mad. **Score = 2**
Gender	**Boy**		Gender	**Girl**	
TEC	**5**		TEC	**7**	
PT	**0**		PT	**4**	
NC	**8**		NC	**14**	
Age	**7;6**	…a boy named Max has a present… it says for Max. He opens the cover and takes it out. When he shows his little frog to his pets. When he watches the, his big frog looks at him. He bites his tail also and he's getting and he's got in trouble. **Score = 0**	Age	**7;4**	…a present came to him and then he opened it. The frog was jealous of the baby frog… he did mean things to the baby frog and he did not like it… and then the jealous frog pushed him off [the boat] and then he fell in the water. And then the turtle touched the boy and the jealous frog was happy that he got him off. **Score = 8**
Gender	**Boy**		Gender	**Girl**	
TEC	**7**		TEC	**8**	
PT	**2**		PT	**0**	
NC	**14**		NC	**15**	
Age	**9;9**	The kid, he's looking at a present…he opens it up…what do you know? It's a frog. He uh, puts him down. Probably they all want to meet each other. Then the bigger frog is uh, looking at him in like this weird angry way. He bites his leg. **Score = 2**	Age	**9;8**	…he opened the present and out came a frog. He already had a frog, a dog and a turtle, so the older frog so the older frog kinda felt bad and jealous because he knew that a new frog would get more attention… The bigger frog wasn't very happy with the littler frog because he was getting all the attention… When Tom, the dog, the turtle, and the little frog were sailing on their little piece of wood in the lake, the older frog jumped as far, as far and high as he could, and landed on it, next to the little frog. The big frog was very mad with the little frog for making him have to jump so far. The big frog was so upset that he kicked the little frog out of the boat and into the lake. **Score = 8**
Gender	**Boy**		Gender	**Boy**	
TEC	**8**		TEC	**6**	
PT	**2**		PT	**5**	
NC	**14**		NC	**19**	
Age	**11;10**	…he opened the present. And there was a frog. The big frog saw the little frog. The big frog was, was upset. The big frog bit the little frog in its leg. **Score = 2**	Age	**11;8**	…the boy… is getting a present…and then he's looking inside…there's a frog who's also looking inside and he sees something and he's not very happy about it. He looks pretty sad or angry and then it turns out it's a new frog which is a young, a younger frog than the frog that the boy previously owned. And the older frog is making fun of the newer frog and … just teasing him for being like new…And then he bites the younger frog probably out of like um jealousy because he's getting, the younger frog is getting more attention than the older one because he's new…the older frog is sitting with the newer frog and he looks pretty envious and like angry at the um younger frog. And then he kicks uh younger frog off the turtle, he apparently he's still feeling those emotions of jealousy…The older frog looks even more uh like envious than ever…Then he jumps onto the boat and he looks at the younger frog with this like really look of hatred and then he just kicks the younger frog right off the boat and sticks his tongue out at him. He's like ha ha. Um it looks like like he was really trying to…show that he was better than the younger frog. Trying to show the younger frog that he was better than that because the younger frog was getting all of the attention. **Score = 9**
Gender	**Girl**		Gender	**Boy**	
TEC	**8**		TEC	**8**	
PT	**3**		PT	**6**	
NC	**16**		NC	**14**	

Note. TEC = Test of Emotion Comprehension Scores, PT = Perspective-Taking Ability Scores, NC = Narrative Coherence Scores

Predictors of Children's Emotional Discourse within the Fictional Narrative

To continue answering *Research Question 1,* I examined predictors of children's use of emotion labels and emotion explanations in their fictional story by conducting two simultaneous regression analyses using the same model as was used to predict thematic understanding of jealousy (i.e., age, TEC scores, perspective-taking ability, and narrative coherence entered as predictor variables; results shown in Table 9). The model predicting children's use of emotion labels in their telling of the fictional story was not significant. Children's use of emotion explanations was predicted by children's age and a trending influence of perspective-taking ability, together accounting for 31% of the variance in the model. Older children and children with greater perspective-taking ability included more causal explanations for emotion in their fictional stories than did younger children and children with lower scores on the perspective-taking ability assessment.

Table 9

Standardized Regression Coefficients Obtained from Multiple Regressions with Children's Emotional Discourse within the Fictional Narrative as Outcome Variables and Age, Emotion Comprehension (TEC), Perspective-Taking Ability, and Narrative Coherence as Predictor Variables

Predictor Variables	Story Emotion Labels β	Story Emotion Explanations β
Age (months)	.01	.32*
TEC Scores	-.13	-.05
PT Ability	-.07	.27†
Narrative Coherence	.16	.08
R^2 Total	.03	.31
Model *F*	.62	8.52**

†$p < .06$, *$p < .05$, **$p < .0001$

Qualitative assessment of children's use of emotion explanations in the fictional narrative. Next, I present examples of children's use of emotion explanations using the same qualitative methodology presented for children's thematic understanding of jealousy. Results are shown in Table 10. By examining children at the extremes of using emotion explanations, we can see that the qualitative comparisons reveal the same patterns of influence as identified through the regression analysis. For instance, while there was not a noticeable age difference with children's use of emotion labels, as children got older they included more causal explanations for emotion in their stories. In addition, when comparing the use of emotion explanations within age groups, we can see that the children who included more emotion explanations exhibited higher perspective-taking ability than the children who used less emotion explanations during the fictional narrative.

Table 10

Qualitative Demonstration of the Developmental Progression of Children's Use of Emotion Explanations in the Fictional Narrative.

Children Using Fewer Emotion Explanations			Children Using More Emotion Explanations		
Child		Use of Emotion Explanations	Child		Use of Emotion Explanations
Age	**5;9**	**Labels = 5, Explanations = 0**	Age	**5;10**	… it was another frog and the other frog was mad… the other frog bit his leg, now the boy is mad at him… the other frog kicked him off the turtle and the boy got mad at him… so now the frog's mad… he was very sad because he couldn't find his frog… now the boy's happy because the frog's back. **Labels = 4, Explanations = 6**
Gender	**Boy**		Gender	**Girl**	
TEC	**5**		TEC	**7**	
PT	**1**		PT	**4**	
NC	**8**		NC	**14**	
Age	**7;5**	**Labels = 5, Explanations = 0**	Age	**7;9**	… the little boy opens a present and the frog looks jealous at it… the little boy gets the present and the big frog gets jealous… and the little boy is trying, is making the big frog massively jealous… the little boy is mad at the frog and the turtle and the dog are mad too… then the little baby frog is in the water and the turtle is not surprised… the big frog is just looking at the river and he's not jealous anymore because he's going to go away… and then when they turn around, they all got mad at the frog… the dog is looking back, walking, and mad at the frog… he's laying, crying and his dog is licking and trying to cheer him up… they're all surprised when he jumps on the turtle. **Labels = 11, Explanations = 11**
Gender	**Girl**		Gender	**Girl**	
TEC	**5**		TEC	**4**	
PT	**1**		PT	**3**	
NC	**15**		NC	**14**	
Age	**9;1**	… he looks at the little frog very angry **Labels = 0, Explanations = 1**	Age	**9;5**	… the little boy was more happy about the little frog and not the big frog… the big frog was jealous because the little boy wasn't too happy about him, only the little frog…the little boy put the little frog next to the big frog and then the little frog doesn't show the big frog how he really felt because the little frog felt scared… the little boy saw that the big frog bit the little frog's leg and then the little frog was crying so they all were mad at him… the little frog was crying and all of the animals, and the dog and the turtle was mad at him… then the big frog jumped on it and then the little frog was scared… the big frog got mad at the little frog for getting him in trouble… then the dog and the turtle was getting mad at him… they couldn't find him so the dog was mad at the frog… the turtle was caring about the little boy because he was crying on his walk back home… everybody was happy that the little frog was back… the big frog and the little frog became friends and everybody was happy. **Labels = 13, Explanations = 13**
Gender	**Girl**		Gender	**Girl**	
TEC	**8**		TEC	**7**	
PT	**4**		PT	**7**	
NC	**17**		NC	**16**	
Age	**11;10**	… the little frog jumped on the big frog's head and then they was happy. **Labels = 1, Explanations = 1**	Age	**11;8**	…he feels happy because he's getting something… he sees something and he's not very happy about it… he bites the younger frog probably out of like jealousy because…the younger frog is getting more attention than the older one… the boy and his all of his other pets are like scolding the old frog and he looks pretty angry about that and he doesn't look very happy… he looks pretty envious and like angry at the younger frog… he kicks younger frog off the turtle he apparently he's still feeling those emotions of jealousy and then the little frog is upset, very sad… he's feeling like a little bad about being told, scolded… the boy tells the old frog to stay behind while him, the other pets, and including the younger frog go off some boat adventure and the older frog looks even more envious than ever, he looks really really mad at almost everybody… he looks really scared that the younger frog is gone cause that was his new present and he probably liked it a lot, his pets looked pretty sad also… they're looking for it and the boy looks very very tired and sad and the frog is kind off to the side and he looks like he is wondering what he's done and he looks like he's actually thinking about it and he's probably regretting it… the boy and all of his pets are going off and they're really really sad that they lost the younger frog and the older frog now feels bad about what he did and he feels bad that he made all of the other pets and the boy feel bad… the boy and the dog and the turtle look all really happy to see the younger frog again, and right now the older frog just looks surprised… he doesn't seem too happy that the older frog let the younger frog land on him…boy's still happy that the younger frog is back, he's like excited…older frog becomes friends with the younger frog, he's probably feeling better…he feels bad about what he did to him before. **Labels = 6, Explanations = 29**
Gender	**Girl**		Gender	**Boy**	
TEC	**8**		TEC	**8**	
PT	**3**		PT	**6**	
NC	**16**		NC	**14**	

Note. TEC = Test of Emotion Comprehension Scores, PT = Perspective-Taking Ability Scores, NC = Narrative Coherence Scores

Predictors of Children's Emotional Discourse within Probe Question Responses

Next, I examined children's emotional discourse in answering the post-story probe questions through two simultaneous linear regressions using the same predictor variables (i.e., age, TEC scores, perspective-taking ability, and narrative coherence) as were used in the models of children's emotion talk during the fictional story (results shown in Table 11 below). Once again, the model predicting children's use of emotion labels was not significant. The results of

Table 11

Standardized Regression Coefficients Obtained from Multiple Regressions with Children's Emotional Discourse within the Post-Story Probe Questions as Outcome Variables and Age, Emotion Comprehension (TEC), Perspective-Taking Ability, and Narrative Coherence as Predictor Variables

Predictor Variables	Probe Emotion Labels β	Probe Emotion Explanations β
Age (months)	.10	-.04
TEC Scores	-.08	.28*
PT Ability	.05	-.06
Narrative Coherence	-.26	.23
R^2 Total	.06	.13
Model *F*	1.15	2.81*

*$p < .05$

the regression analysis on children's use of emotion explanations in their answers to the post-story probe questions revealed a relationship between emotion comprehension and use of emotion explanations, with TEC scores accounting for 13% of the variance: Children with higher TEC scores used more emotion explanations in their answers to the probe questions than did children with lower TEC scores.

Qualitative assessment of children's use of emotion explanations within probe question responses. Next, I present examples of children's use of emotion explanations in their answers to the probe questions using the same qualitative methodology presented above (see Table 12). Upon examination, there was a trend of children who used more emotion explanations responding with more elaborate answers even when they used basic emotions such as happiness, anger, and sadness to refer to the big frog's feelings. In their responses, these children highlighted the complexity of the situation by discussing how the big frog felt multiple emotions during the course of the story and how other characters' feelings were affected by his aggressive actions towards the little frog. A comparison of children using fewer emotion explanations and those using more emotion explanations within age groups also demonstrated the influence of children's emotion comprehension (i.e., TEC scores) that was revealed in the regression analysis: although the trend of children with higher TEC scores including more emotion explanations in their responses to the probe questions was not seen in the 9- and 11-year-olds in the qualitative assessment, the 5- and 7-year-olds who included more causal explanations for the big frog's feelings in their answers also exhibited more emotion comprehension than the 5- and 7-year-olds who used less emotion explanations.

Table 12

Qualitative Demonstration of the Developmental Progression of Children's Use of Emotion Explanations in the Probe Questions.

Children Using Fewer Emotion Explanations			Children Using More Emotion Explanations		
Child		Use of Emotion Explanations	Child		Use of Emotion Explanations
Age	**5;4**	INV: *How do you think the big frog felt?*	Age	**5;5**	INV: *How do you think the big frog felt?*
Gender	**Girl**	CHI: Sad.	Gender	**Girl**	CHI: Mad… and the child he made love to the frog and he didn't made love to the big frog.
TEC	**3**	**Labels = 1, Explanations = 0**	TEC	**6**	**Labels = 1, Explanations = 2**
PT	**1**		PT	**1**	
NC	**15**		NC	**14**	
Age	**7;11**	INV: *How do you think the big frog felt?*	Age	**7;5**	INV: *How do you think the big frog felt?*
Gender	**Boy**	CHI: Mad and sad.	Gender	**Girl**	CHI: Well first he was, first he was happy because he thought it was gonna be something else
TEC	**4**	**Labels = 2, Explanations = 0**	TEC	**5**	like a frog toy or something like that. And then realized it was a frog and then Froggy and then he
PT	**0**		PT	**1**	bit his leg.
NC	**11**		NC	**15**	INV: *Well how do you think he felt once he found out it was another frog that was in the box?*
					CHI: Um jealous… Because that frog is littler and cuter and it's not a toad and he loves that one, now he loves it really good because he hurt him. And the dog and the turtle look like same too, so he's jealous cause look, look at him, right there.
					Labels = 1, Explanations = 4
Age	**9;9**	INV: *How do you think the big frog felt?*	Age	**9;1**	INV: *How do you think the big frog felt?*
Gender	**Boy**	CHI: Uh, angry at him when the first time they met.	Gender	**Girl**	CHI: I think in the beginning, he felt like happy cause he didn't like the little frog. But then at the
TEC	**8**	INV: *That he met?*	TEC	**8**	end he was sad that he did that cause he knew he'd make Tim feel bad so I think and then. And
PT	**2**	CHI: The little frog.	PT	**4**	then they become friends so I think he's a sad, a little bit sad and happy cause I think he's sad
NC	**14**	**Labels = 0, Explanations = 1**	NC	**17**	because he made him cry and be and be sad and then at he's happy because now he's friends with the little frog.
					Labels = 1, Explanations = 9
Age	**11;8**	INV: *How do you think the big frog felt?*	Age	**11;1**	INV: *How do you think the big frog felt?*
Gender	**Boy**	CHI: Uh jealous.	Gender	**Girl**	CHI: I think he felt a little jealous in the beginning cause there was a new frog… and then he felt
TEC	**8**	**Labels = 1, Explanations = 0**	TEC	**6**	sad… I think he felt sad cause he like basically broke the little frog's leg and he made the little
PT	**6**		PT	**3**	boy feel bad.
NC	**14**		NC	**15**	**Labels = 1, Explanations = 3**

Note. TEC = Test of Emotion Comprehension Scores, PT = Perspective-Taking Ability Scores, NC = Narrative Coherence Scores

Predictors of Children's Affect Reasoning

Next, a binary logistic regression analysis was employed to predict children's affect reasoning, or more specifically to predict the probability that a child would give a jealousy reason when asked about the motivations for the big frog's feelings. Overall, 64% (n = 51) of the children responded with a jealousy reason to the question "Why do you think the big frog felt that way?" The predictor variables were the same as the previous models used to predict children's jealousy understanding and use of emotion labels and emotion explanations (i.e., children's age, TEC scores, perspective-taking ability, and narrative coherence). A test of the full model versus a model with intercept only was highly significant, χ^2 (4, N = 80) = 36.17, p < .001. The model had an overall success rate of 80% and accounted for 36% of the variance in the model (Cox & Snell R^2 = .36). Table 13 shows the logistic regression coefficient, standard error, Wald test, and odds ratio for each of the predictors. Results revealed an effect of age on children giving a jealousy reason to the affect reasoning probe question. The odds ratio for children's age

Table 13

Binary Logistic Regression Predicting Children's Affect Reasoning from Children's Age, Emotion Comprehension, Perspective-Taking Ability, and Narrative Coherence

Predictor Variables	*B*	*SE*	Wald χ^2	Odds Ratio (e^B)
Age (in months)	.05	.02	5.93*	1.05
TEC Scores	.11	.24	.20	1.11
PT Ability	.13	.24	.28	1.13
Narrative Coherence	.13	.12	1.14	1.14

*p < .05

indicated that when holding all other variables constant, each additional month in children's age increased the odds of the child providing a jealousy reason as a motivation for the big frog's feelings by a multiplicative factor of 1.05. Although not significant predictors in the model, follow-up univariate analyses revealed that children who provided a jealousy reason as motivation for the big frog's feelings (M = 7.53, SD = 1.30) scored significantly higher on the TEC than did children who gave a non-jealousy reason (M = 6.21, SD = 1.47), $t(78) = -4.16$, $p < .001$. In addition, children who gave a jealousy reason for the big frog's feelings scored significantly higher on the perspective-taking ability assessment (M = 3.86, SD = 1.78) than children who did not give a jealousy reason (M = 1.90, SD = 1.45), $t(78) = -5.07$, $p < .001$. Finally, children who gave a jealousy reason for the big frog's feelings also told significantly more coherent narratives (M = 15.22, SD = 2.07) when compared to children who did not give a jealousy reason (M = 12.34, SD = 4.05), $t(78) = -4.20$, $p < .001$.

Qualitative assessment of children's affect reasoning. Next, I present examples of children's responses to the second post-story probe question, "Why do you think the big frog felt that way?" (see Table 14). Examination of children's responses confirmed the effects of age found within the regression analysis. While the younger children tended to focus on the big frog's aggressive actions towards the little frog as the motivation for his feelings "*because he bit the baby frog's leg*" or by stating that his feelings were based on an attribute comparison to the little frog "*he was bigger than the little one*", older children tended to respond with jealousy reasons for the big frog's feelings, such as mentioning the lack of attention that the big frog was receiving "*it's like when you have a little brother, everybody pays attention to the little one"*

Table 14

Qualitative Demonstration of the Developmental Progression of Children's Affect Reasoning.

Children Referring to Non-Jealousy Reasons				Children Referring to Jealousy Reasons			
Age	Type	*n*	Examples (*because…*)	Age	Type	*n*	Examples (*because…*)
5 y	Actions	-	--	5 y	Affection	1	the child he made love to the frog and he didn't made love to the big frog
	Aggression	5	she kicked the baby; was being mean to new frog		Attention	1	the boy was taking care of the little frog and not the big frog
	Attributes	2	he was bigger than the little one		Replaced	-	--
	Emotional	4	he didn't like the other one				
6 y	Actions	2	he [boy] was yelling at him	6 y	Affection	-	--
	Aggression	2	he bit the little frog's leg		Attention	-	--
	Attributes	-	--		Replaced	3	wanted to be the only frog in the house; didn't want a little frog he just wanted to stay with his own family
	Emotional	3	he didn't like the little frog				
7 y	Actions	1	that he [little frog] was hiding in the box	7 y	Affection	-	--
	Aggression	2	he kept on bothering the little frog		Attention	3	maybe he wanted attention too; the boy only played with the little frog
	Attributes	3	that frog is littler and cuter; he was bigger		Replaced	3	he didn't want another frog in the family; he wanted to be the only frog with them
	Emotional	1	he didn't like the little frog				
8 y	Actions	-	--	8 y	Affection	2	now they all like that frog better; the little boy liked that frog more
	Aggression	1	he thought it was fun to annoy the little frog		Attention	6	thought he was gonna treat him differently; everyone was treating the frog like a newborn
	Attributes	-	--		Replaced	3	didn't want another frog, just wanted him and the other two pets; there was a new frog and he thinks he is unappreciated
	Emotional	-	--				
9 y	Actions	-	--	9 y	Affection	4	the little boy liked the little frog maybe better; Charlie loves the little frog
	Aggression	-	--		Attention	4	he had no attention and everyone was paying attention to the little frog
	Attributes	-	--		Replaced	3	at first he was the only frog and he was getting played with but now when the new frog came in, he was the special one and the older frog just kinda followed along; he probably thought that he was replacing the big frog
	Emotional	1	he didn't like the little frog				
10 y	Actions	-	--	10 y	Affection	3	the boy and the dog and the turtle they didn't like him really a lot; he felt like he didn't matter
	Aggression	-	--		Attention	5	now that the new frog was here he wouldn't be treated as well because the new person place or thing is always the most important; the big frog just wanted all the attention to himself
	Attributes	-	--				
	Emotional	1	he probably didn't feel too good about himself		Replaced	2	the Yippy [little frog] came first and thought he was gonna forget about Jumpy [big frog]; not only did he have a dog and a turtle, he had a little frog too, he had too much pets
11 y	Actions	-	--	11 y	Affection	1	he felt like Timmy liked the new frog better than him
	Aggression	1	all of the mean things he did		Attention	3	younger frog was getting lots of attention from the boy because he was a new present; it's like when you have a little brother, everybody pays attention to the little one
	Attributes	-	--				
	Emotional	-	--		Replaced	4	left out that there was another frog coming in; he didn't want to have a second frog inside the family

or the big frog's contemplation that he might be replaced by the little frog "*he didn't want to have a second frog inside the family*". As shown in Table 14, a marked shift in children's reasoning occurred between the ages of 7 and 8, with the majority of children between 5- and 7-years responding with a non-jealousy reason and children aged 8 and older focusing on jealousy reasons. In addition, except for a 5-year-old girl who gave an affection comparison as a motive for the big frog's feelings "*the child he made love to the frog and he didn't made love to the big frog*", only children 8-years and older talked about the reasons for the big frog's feelings in terms of the little frog being liked or loved more by the other family members.

Children's Autobiographical Accounts of Jealousy

Relationships with age. Table 15 displays the descriptive statistics for children's emotion expression during the individual personal narrative task for the sample (by gender).

Table 15

Descriptive Statistics for Children's Emotion Expression during the Personal Narrative Task by Gender (standard deviations in parentheses)

			Gender	
		Total Sample (n = 80)	Girls (n = 40)	Boys (n = 40)
Emotion Labels (frequency)	Mean	.63 (.75)	.63 (.81)	.63 (.71)
	Range	0 to 3	0 to 3	0 to 2
Emotion Explanations (frequency)	Mean	1.35 (1.62)	1.65 (1.59)	1.05 (1.62)
	Range	0 to 8	0 to 7	0 to 8

While age was not related to children's use of emotion labels, the correlation analysis revealed a significant relationship between children's age and their inclusion of emotion explanations in the individual personal narrative ($r(78) = .32$, $p = .004$), after Bonferroni correction (alpha level set at .025; see Figure 9).

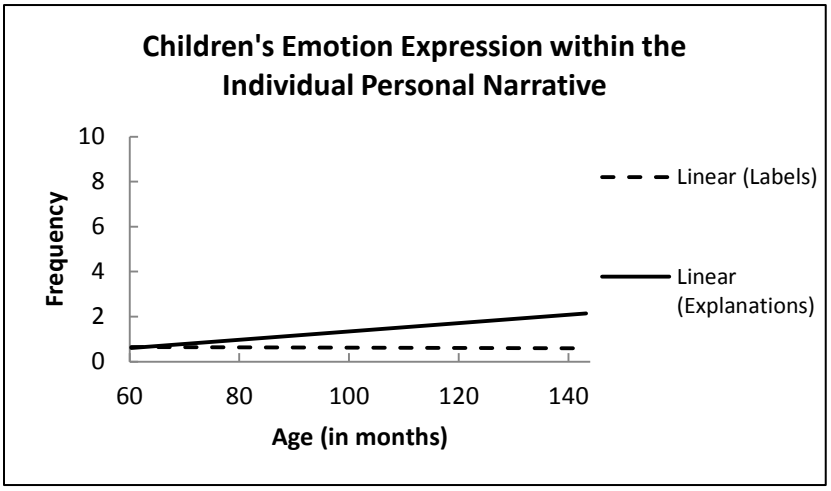


Figure 9. Trend lines from correlation analyses between children's age and their use of emotion expression during the individual personal narrative task (emotion labels: $r(78) = -.03$, $p = .81$, emotion explanations: $r(78) = .32$, $p = .004$).

Gender effects. In regards to *Research Question 2*, I next compared girls' and boys' emotion expression during the individual personal narrative through a series of one-way ANOVAs (see Figure 10). While analyses revealed no difference between girls' and boys' use of emotion labels, $F(1, 78) = 0.04$, $p = .95$, there was a trending effect of gender on children's inclusion of emotion explanations. Girls tended to use more emotion explanations in their personal narratives than boys, $F(1, 78) = 3.66$, $p = .06$.

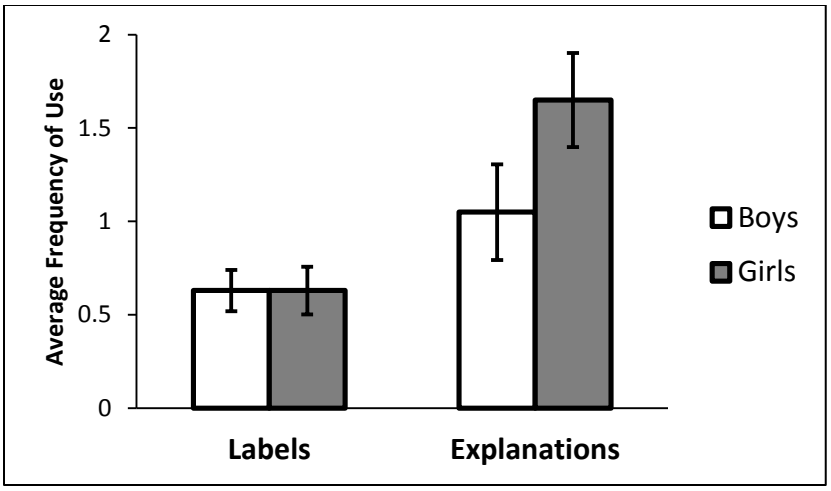


Figure 10. Mean differences between girls' and boys' emotion expression during the individual personal narrative.

Qualitative assessment of emotional content. Next, I examined the emotional content of children's autobiographical accounts of jealousy by collapsing across emotion labels and explanations (see Figure 11 below). Similar to children's prompted answers about the big frog's

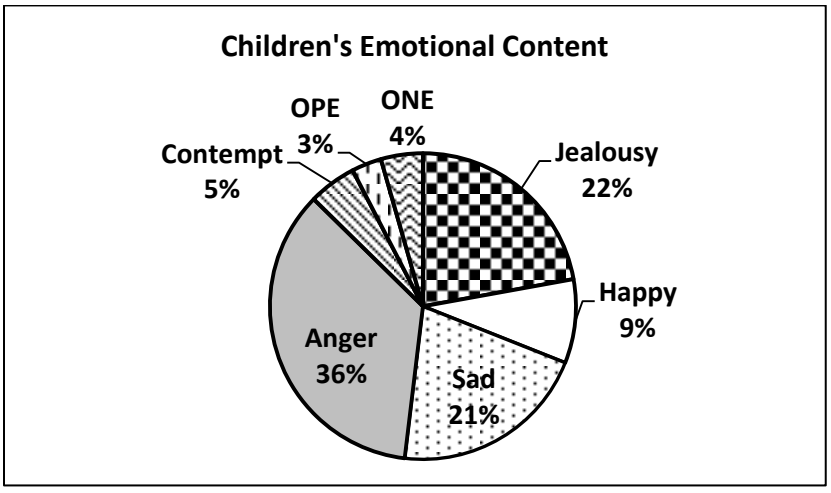


Figure 11. Children's overall use of emotion types during the individual personal narrative (Total Emotion Words = 158; OPE = Other Positive Emotion, ONE = Other Negative Emotion).

feelings, when talking about their own experience children predominately referred to the emotions of anger, jealousy, and sadness.

Qualitative assessment of narrator perspective. When asked to talk about a time they felt like the big frog, I found that some children were unable or unwilling to talk about a personal event from the point of view of the big frog. As a result, I next assessed children's personal narratives according to the viewpoint from which they told their story (see Figure 12 below). Specifically, while the majority of children (59%, $n = 47$) told their own personal story from the perspective of the big frog, some children's (21%, $n = 17$) stories focused on an event where they were victimized like the little frog. Furthermore, the rest of the children (20%, $n = 16$) were either completely unable/unwilling to tell a personal story or were off-task in doing so (e.g., continuing to discuss the fictional story instead of talking about their own experience). Analyses also revealed that both girls and boys were equally likely to tell their personal story from the perspective of the big frog, $\chi^2(2, N = 80) = 1.31$, $p = .52$.

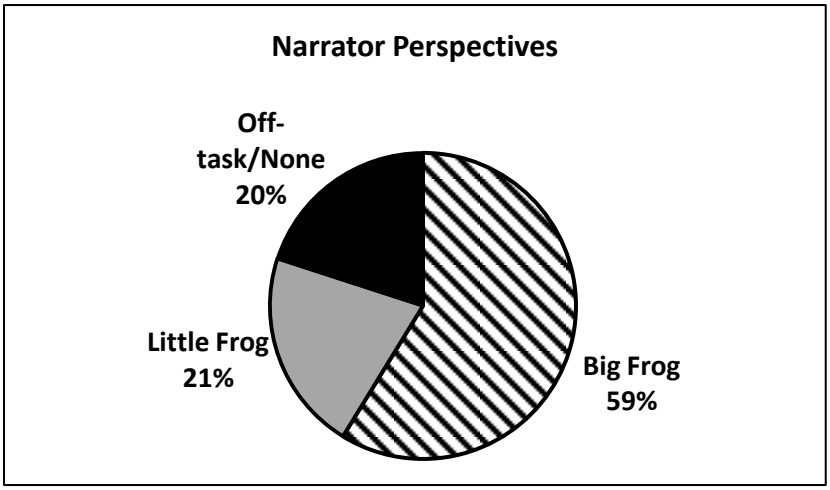


Figure 12. Perspectives taken by children during the individual personal narrative task (Total Children = 80).

Qualitative assessment of thematic content of "big frog" narratives. Next, I examined the emotional themes of the personal narratives of the 47 children who described their personal experience from the perspective of the big frog. Qualitative assessment revealed a wide variety in children's self-disclosed experiences where "they felt like the big frog". Overall, as shown in Figure 13, I found that children's experiences were related to either episodes of jealousy due to a perceived threat to a relationship (49%, $n = 23$), being envious of another's possessions, activities, or personal attributes (42.5%, $n = 20$), or strictly in terms of aggressive behavior likeness to the big frog (8.5%, $n = 4$).

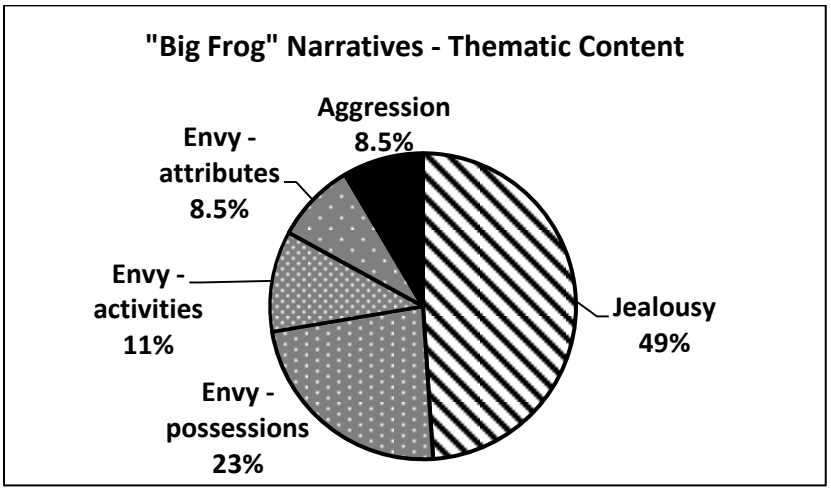


Figure 13. Thematic content of children's personal narratives from the perspective of the big frog (Total Children = 47).

Upon examination of the effect of gender on the thematic content of children's experiences from the perspective of the big frog, I found a significant difference in the pattern of children's stories, $\chi^2(2, N = 47) = 6.43$, $p = .04$ (see Table 16 for the frequency distributions by gender). Whereas the majority of girls' "big frog" stories (66.7%) centered on the theme of jealousy due to interpersonal rivalry and lack of attention from another, the majority of boys'

Table 16

Frequency Distributions of Thematic Content in Children's "Big Frog" Narratives

Big Frog Theme	Girls (n = 21)	Boys (n = 26)	Total (n = 47)
Jealousy	14 (66.7%)	9 (34.6%)	23 (48.9%)
Envy	7 (33.3%)	13 (50%)	20 (42.6%)
Aggressive Behavior	0 (0%)	4 (15.4%)	4 (8.5%)

Note. Numbers are the frequencies of children. Percentages represent proportion of children in the sample category (i.e., girls, boys, total).

"big frog" experiences (50%) focused on the theme of envy in relation to wanting something that another person had. Furthermore, while both girls and boys talked about being envious of another person's possessions (i.e., mp3 players, pets, money, shoes, toys, snacks/treats) or personal attributes (i.e., height, being "cooler" or "better" than another, being a better basketball player), only boys were found to talk about being envious of another's activities (i.e., picking first for a team, holding a baby, going to see the Statue of Liberty, bike riding, going to a friend's house). Moreover, a few boys –but no girls- related their own personal experiences solely through examples of aggressive behavior like the big frog.

When examining whom their jealousy, envy or behavior was directed towards, I found no significant difference between girls and boys, $\chi^2(2, N = 47) = .94$, $p = .62$. The majority of both girls and boys referred to either a sibling (40.4%, $n = 19$) or a peer (36.2%, $n = 17$) as a rival. The remaining children referred to other individuals (23.4%, $n = 11$), such as another family member besides a sibling or a family friend, as the focus of their emotions and actions in their personal experience.

Co-Constructed Accounts of Children's Jealousy Experiences

Reminiscing style. Table 17 contains the descriptive statistics for children's and mothers' reminiscing style during the co-constructed narrative task for the sample (by gender).

Table 17

Descriptive Statistics for Reminiscing Style Discourse during the Co-Constructed Narrative by Speaker and Gender (standard deviations in parentheses)

			Child Gender	
		Total Sample (n = 80)	Girls (n = 40)	Boys (n = 40)
Children's Speech				
Elaborations	Mean	6.93 (6.91)	7.85 (7.54)	6.00 (6.17)
	Range	0 to 40	1 to 40	0 to 34
Repetitions	Mean	2.16 (3.20)	2.17 (2.61)	2.15 (3.73)
	Range	0 to 22	0 to 12	0 to 22
Evaluations	Mean	1.27 (2.66)	1.58 (3.36)	.98 (1.69)
	Range	0 to 20	0 to 20	0 to 9
Maternal Speech				
Elaborations	Mean	8.88 (10.29)	10.38 (13.24)	7.38 (5.88)
	Range	0 to 67	0 to 67	1 to 24
Repetitions	Mean	5.15 (7.60)	6.40 (9.75)	3.90 (4.34)
	Range	0 to 41	0 to 41	0 to 18
Evaluations	Mean	3.58 (4.19)	3.98 (5.04)	3.18 (3.15)
	Range	0 to 28	0 to 28	0 to 11

Relationships with age. Correlation analyses revealed that children's use of elaborations during the co-constructed narrative significantly increased with age, $r(78) = .41$, $p < .001$ (after Bonferroni correction, alpha level set at .008; see Figures 14 and 15 for children's and mothers' use of reminiscing styles by age).

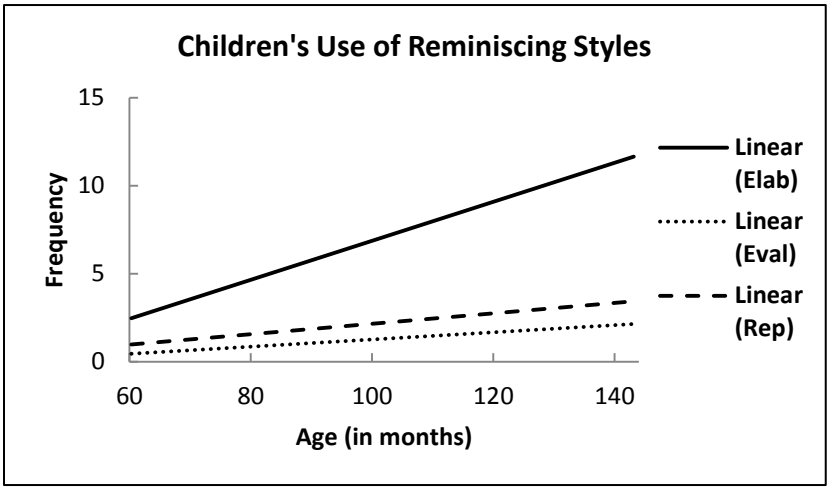


Figure 14. Trend lines from correlation analyses between children's age and their use of reminiscing style discourse during the co-constructed narrative task (elaborations: $r(78) = .41$, $p < .001$, repetitions: $r(78) = .19$, $p = .09$, evaluations: $r(78) = .21$, $p = .06$).

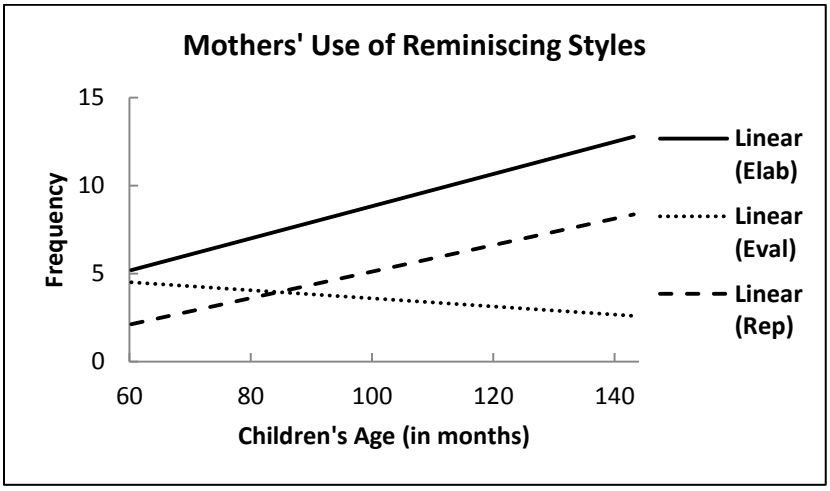


Figure 15. Trend lines from correlation analyses between children's age and mother's use of reminiscing style discourse during the co-constructed narrative task (elaborations: $r(78) = .21$, $p = .07$, repetitions: $r(78) = .22$, $p = .05$, evaluations: $r(78) = -.19$, $p = .09$).

Older children introduced more event details into the conversation than did younger children. There were no significant relationships between mothers' reminiscing speech styles and children's age.

Speaker, gender, and speech style effects. In order to address the first elements of *Research Questions 3 and 4*, or to examine gendered patterns in children's and mothers' use of reminiscing styles, I conducted a 2 (speaker: child, mother) x 2 (gender: girl, boy) x 3 (speech style: elaborations, repetitions, evaluations) mixed design ANOVA. Analyses revealed a significant main effect of speaker, $F(1, 156) = 12.39$, $p = .001$; overall, mothers ($M = 5.87$, $SE = .60$) produced more utterances coded for style than did children ($M = 3.45$, $SE = .60$) (see Figure 16).

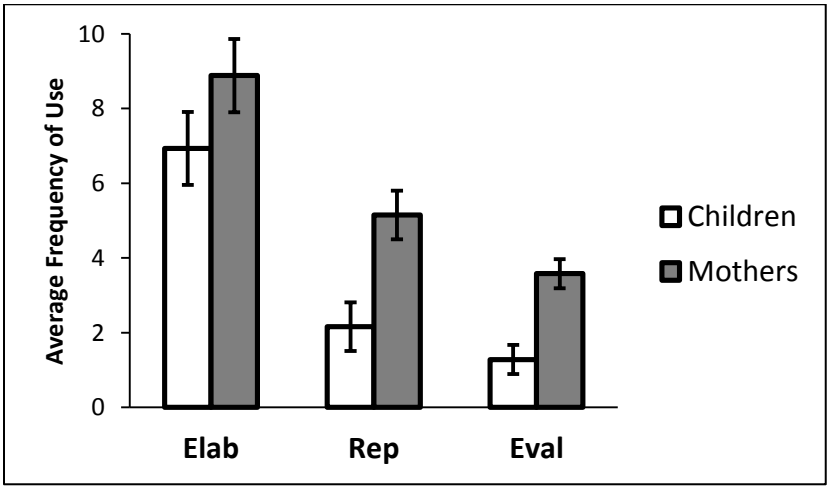


Figure 16. Mean differences between mothers' and children's use of reminiscing styles during the co-constructed personal narrative.

There was also a trending main effect of child's gender, $F(1, 156) = 2.79$, $p = .097$. On average, mother-daughter dyads ($M = 5.39$, $SE = .60$) tended to produce more utterances coded for style than did mother-son dyads ($M = 3.93$, $SE = .60$) (see Figure 17 below).

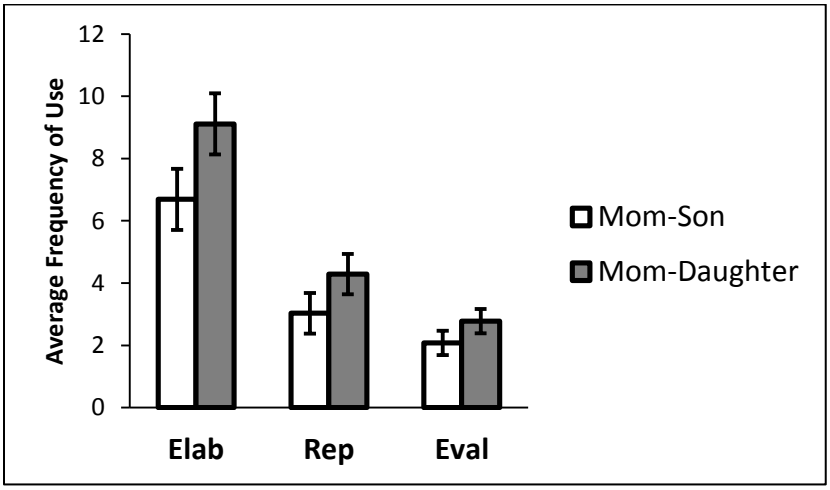


Figure 17. Mean differences between mother-son and mother-daughter dyads' use of reminiscing styles during the co-constructed personal narrative.

Analyses also revealed a significant main effect of speech style, $F(2, 155) = 103.71$, $p < .001$. Pairwise comparisons revealed that mother-child dyads produced elaborations ($M = 7.90$, $SE = .69$) significantly more often than repetitions ($M = 3.66$, $SE = .46$; $p < .001$) or evaluations ($M = 2.43$, $SE = .28$; $p < .001$). The pairwise comparisons also revealed that dyads produced significantly more repetitions than evaluations, $p = .002$. Finally, there were no significant interaction effects within the reminiscing style discourse (i.e., speaker x gender, speaker x style, gender x style, speaker x gender x style).

Reminiscing content. Table 18 contains the descriptive statistics for children's and mothers' reminiscing content during the co-constructed narrative.

Table 18

Descriptive Statistics for Reminiscing Content Discourse during the Co-Constructed Narrative by Speaker and Gender (standard deviations in parentheses)

			Child Gender	
		Total Sample (n = 80)	Girls (n = 40)	Boys (n = 40)
Children's Speech				
Facts	Mean	7.26 (8.19)	8.03 (9.15)	6.50 (7.14)
	Range	0 to 50	0 to 50	0 to 39
Resolutions	Mean	1.45 (3.58)	1.83 (3.57)	1.08 (3.59)
	Range	0 to 22	0 to 19	0 to 22
Emotion States	Mean	1.65 (1.58)	1.75 (1.61)	1.55 (1.57)
	Range	0 to 7	0 to 7	0 to 5
Maternal Speech				
Facts	Mean	7.34 (7.69)	7.90 (9.01)	6.78 (6.16)
	Range	0 to 51	0 to 51	0 to 28
Resolutions	Mean	6.59 (12.24)	8.98 (15.96)	4.20 (6.09)
	Range	0 to 78	0 to 78	0 to 22
Emotion States	Mean	3.68 (3.76)	3.88 (3.79)	3.48 (3.77)
	Range	0 to 21	0 to 14	0 to 21

Relationships with age. Correlation analyses revealed that children's inclusion of facts during the co-constructed narrative significantly increased with age, $r(78) = .36$, $p = .001$ (after Bonferroni correction, alpha level set at .008): Older children introduced more factual details concerning the event into the conversation with their mother than did younger children. In addition, mother's use of resolutions was found to increase with children's age, $r(78) = .31$, $p = .005$: Mothers included more resolutions or coping strategies during conversations with older children than mothers talking with younger children. No other relationships between children's or mothers' reminiscing content discourse and children's age were significant (see Figures 18 and 19).

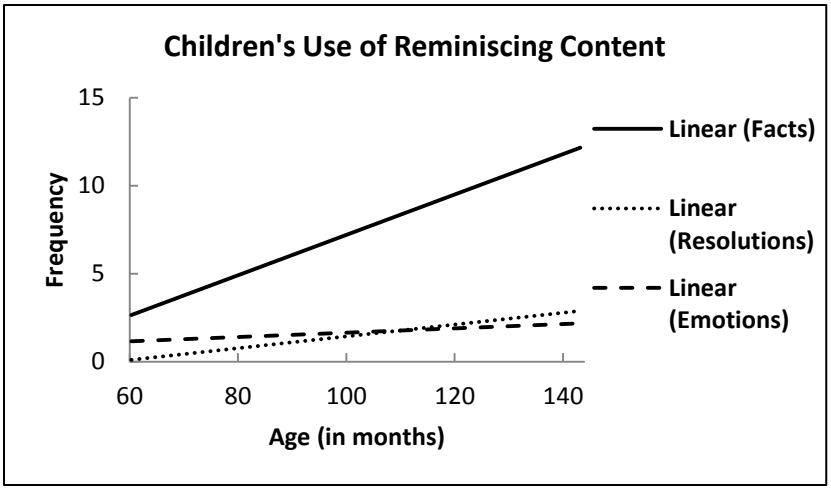


Figure 18. Trend lines from correlation analyses between children's age and their use of reminiscing content discourse during the co-constructed narrative task (facts: $r(78) = .36$, $p = .001$, resolutions: $r(78) = .22$, $p = .05$, emotion states: $r(78) = .21$, $p = .07$).

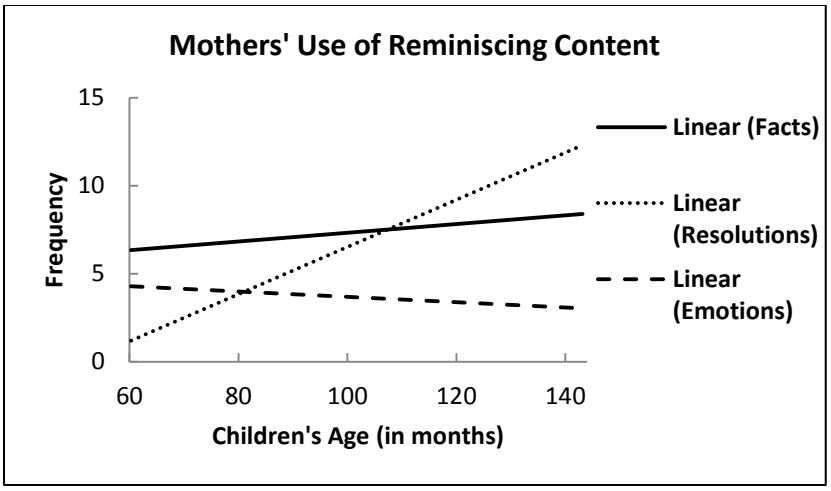


Figure 19. Trend lines from correlation analyses between children's age and mother's use of reminiscing content discourse during the co-constructed narrative task (facts: $r(78) = .03$, $p = .81$, resolutions: $r(78) = .31$, $p = .005$, emotion states: $r(78) = -.13$, $p = .24$).

Speaker, gender, and speech content effects. Next, in order to address the second elements of *Research Questions 3 and 4*, or to examine gendered patterns in children's and mothers' use of reminiscing content, I conducted a 2 (speaker: child, mother) x 2 (gender: girl, boy) x 3 (speech content: facts, resolutions, emotion states) mixed design ANOVA. Analyses revealed a significant main effect of speaker, $F(1, 156) = 13.02$, $p < .001$. Overall, mothers ($M = 5.87$, $SE = .60$) contributed more content utterances to the conversations than did children ($M = 3.45$, $SE = .60$) (see Figure 20).

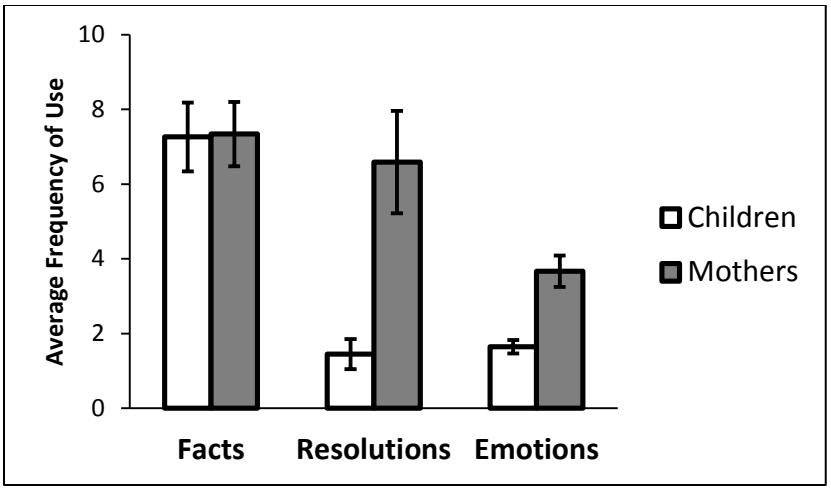


Figure 20. Mean differences between mothers' and children's use of reminiscing content during the co-constructed personal narrative.

There was also a trending main effect of child's gender, $F(1, 156) = 3.08$, $p = .08$. On average, mother-daughter dyads ($M = 5.39$, $SE = .60$) tended to produce more content utterances than did mother-son dyads ($M = 3.93$, $SE = .60$) (see Figure 21).

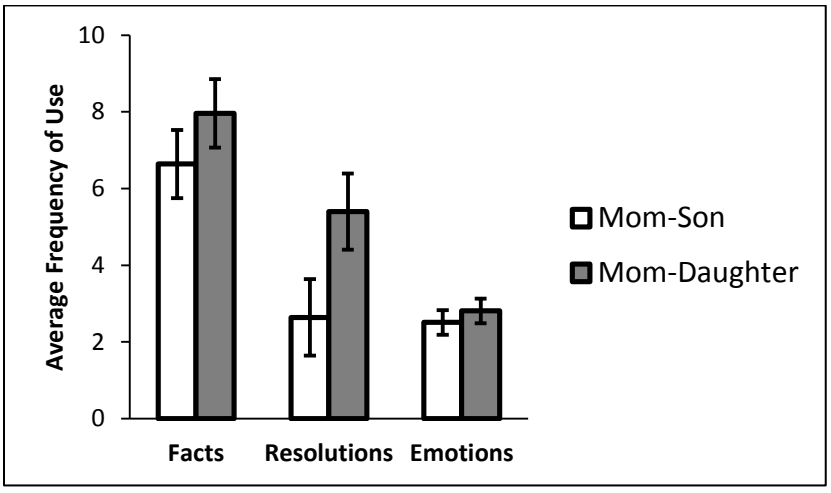


Figure 21. Mean differences between mother-son and mother-daughter dyads' use of reminiscing content during the co-constructed personal narrative.

Analyses also revealed a significant main effect of speech content, $F(2, 155) = 53.15$, $p < .001$. Pairwise comparisons revealed that mother-child dyads included significantly more facts (M = 7.30, SE = .63) than both resolutions (M = 4.02, SE = .70; $p < .001$) and emotion states (M = 2.66, SE = .23; $p < .001$). In addition, there was a significant speaker x content interaction, $F(2, 155) = 8.83$, $p < .001$. As shown in Figure 20, the use of content during the co-constructed personal narrative significantly differed between children and mothers. Whereas mothers (M = 7.34, SE = .89) and children (M = 7.26, SE = .89) included similar amounts of facts in the conversation, mothers (M = 6.59, SE = 1.00) talked about resolutions or coping strategies for feelings of jealousy more so than children (M = 1.45, SE = 1.00). Furthermore, mothers (M = 3.68, SE = .32) included more specific utterances pertaining to emotion states than did children (M = 1.65, SE = .32). There were no other significant interaction effects pertaining to reminiscing content (i.e., speaker x gender, gender x content, speaker x gender x content).

Qualitative assessment of emotional content. Next, I compared the emotion types referred to by mothers and children during the co-constructed narrative. Specifically, I examined explicit uses of emotion words (i.e., emotion state references and emotion words within resolutions) across the different categories of emotion for both children and mothers. As shown in Figures 22 and 23, overall mothers and children were very similar in the types of emotion words used during the co-constructed narrative. Both mothers and children predominately used explicit references to jealousy when talking about their child's past emotional experience. Both parties also made somewhat frequent references to sadness and happiness when talking together about the child's previous experience. In contrast, while the differences were minimal, children referred to other negative emotions (such as guilt), anger, and contempt more than mothers,

while mothers made more references to fear and other positive emotions (such as love and pride) than children.

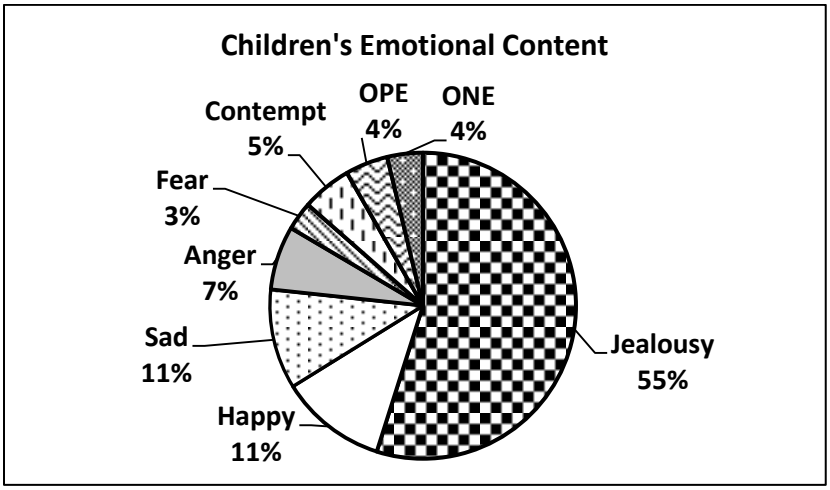


Figure 22. Children's overall use of emotion types during the co-constructed personal narrative (Total Emotion Words = 133; OPE = Other Positive Emotion, ONE = Other Negative Emotion).

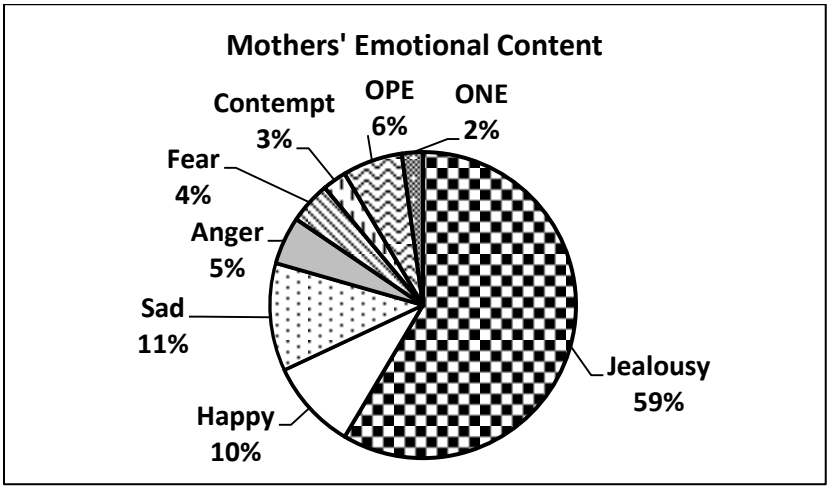


Figure 23. Mothers' overall use of emotion types during the co-constructed personal narrative (Total Emotion Words = 316; OPE = Other Positive Emotion, ONE = Other Negative Emotion).

Qualitative assessment of thematic content. Next, I examined the emotional themes of the co-constructed personal narratives. Qualitative assessment revealed a variety of experiences discussed by mothers and their children in response to being asked to "talk about a time [the

child] felt jealous". Overall, as shown in Figure 24, I found that the majority of mother-child dyads talked about an event where the child was envious of another's possessions, activities, or abilities (65%, n = 52). In addition, 31.25% (n = 25) of the dyads talked about the child experiencing jealousy due to a perceived threat to a relationship. There were also three dyads (3.75% of sample) who, when asked to talk about an experience of jealousy, instead talked about the child's experience of a basic emotion (i.e., sadness, fear).

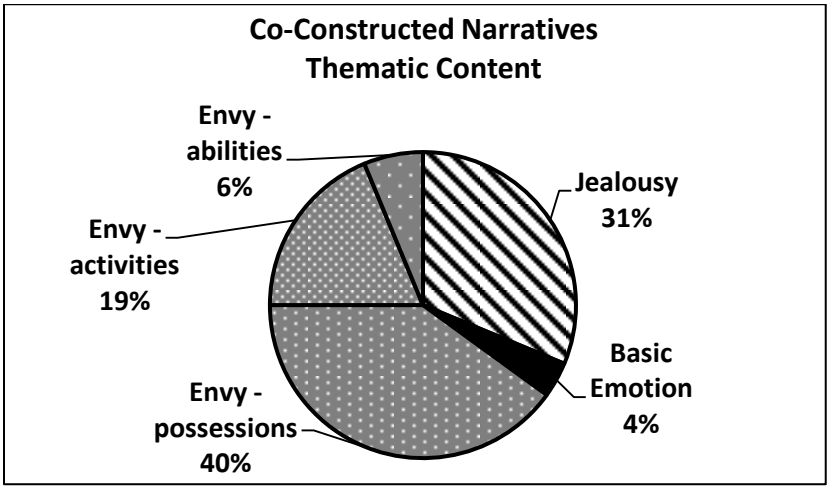


Figure 24. Thematic content of the co-constructed personal narratives (Total Mother-Child Dyads = 80).

Upon examination of the effect of gender on the thematic content of the co-constructed narratives, I found that both mother-daughter and mother-son dyads were equally likely to talk about their child's past experience in terms of envy, jealousy, or a basic emotion, $\chi^2(2, N = 80) = 1.73$, $p = .79$ (see Table 19 for the frequency distributions by gender). As far as the 52 dyads whose conversations focused on the child's envy in relation to wanting something that another person had, both mother-daughter and mother-son dyads talked about being envious of another person's possessions (i.e., toys/games, presents, prizes/awards, snacks/treats, clothing and

Table 19

Frequency Distributions of Thematic Content in the Co-Constructed Narratives

Theme	Mother-Daughter (n = 40)	Mother-Son (n = 40)	Total (n = 80)
Jealousy	15 (37.5%)	10 (25%)	25 (31.25%)
Envy – Possessions	15 (37.5%)	17 (42.5%)	32 (40%)
Envy – Activities	7 (17.5%)	8 (20%)	15 (18.75%)
Envy – Abilities	2 (5%)	3 (7.5%)	5 (6.25%)
Basic Emotion	1 (2.5%)	2 (5%)	3 (3.75%)

Note. Numbers are the frequencies of mother-child dyads. Percentages represent proportion of dyads in the sample category (i.e., mother-daughter, mother-son, total).

accessories, mp3 players, cell phones, laptops, cameras, money/allowance, "better stuff"), being envious of another's activities (i.e., play-dates/sleepovers, vacations, parties, fieldtrips, going swimming, TV time, videogame playing time, going on a date/having a girlfriend), or being envious of another's abilities (i.e., sports, math, reading, spelling). The 25 dyads who discussed the experience in terms of jealousy tended to talk about a loss of attention due to a rival in an important relationship. Finally, the three dyads who talked about the past event in terms of a basic emotion included: a girl and her mother discussing her fear of being on stage during a fashion show, a boy and his mother talking about his fear of his brother losing his Harry Potter Lego when he took it to school, and a boy and his mother talking about his sadness when he thought that his little sister was not getting punished as much as he was.

When examining who the rival of their experience was, I found a significant difference between the mother-daughter and mother-son dyads, $\chi^2(2, N = 80) = 6.87$, $p = .03$. While the

majority of both mother-daughter (32.5%, *n* = 13) and mother-son (37.5%, *n* = 15) dyads referred to a peer as the rival in their conversations, more mother-son (55%, *n* = 22) dyads referred to a sibling as the rival when compared to the mother-daughter dyads (37.5%, *n* = 15). Furthermore, more mother-daughter dyads (30%, *n* = 12) referred to other individuals such as another family member besides a sibling or a family friend as the rivalry focus in the child's past experience than mother-son dyads (7.5%, *n* = 3).

Relationships between Children's Social-Cognition, Narrative Coherence, and Personal Narrative Measures

Next, I examined correlations between children's TEC scores, perspective-taking ability, narrative coherence, use of emotion labels and explanations in the individual personal narrative, and mothers' and children's use of reminiscing style and content while controlling for children's age, children's verbal and nonverbal intelligence (TONI and PPVT raw scores), and mothers' verbal intelligence (PPVT raw scores; see Table 20). After Bonferonni correction (alpha level set at .0004), correlation analyses revealed several significant relationships within the reminiscing style and content measures. Overall, mothers and children were very similar in the relationships found between types of reminiscing speech produced. All three maternal reminiscing styles (i.e., elaborations, repetitions, evaluations) were found to be positively related to one another as well as to all three reminiscing styles used by children. Furthermore, maternal elaborations and repetitions were both found to be positively related to all three maternal content utterances (i.e., facts, resolutions, emotion states). Children exhibited the same pattern of significant relationships as mothers: All three reminiscing styles were found to be positively related to one another as well as to all three types of content utterances, with the exception that children's evaluations were not related to their inclusion of emotion states. Maternal reminiscing styles (all three) were also found to be positively related to children's inclusion of facts and resolutions.

Table 20

Correlations between Children's Emotion Comprehension, Perspective-Taking Ability, Narrative Coherence, and Personal Narrative Measures (after partialling out effects of children's age, verbal and non-verbal intelligence, and mothers' verbal intelligence and after Bonferroni correction; df = 74)

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. TEC	.17	-.03	.16	.15	-.25	-.19	-.09	-.12	-.19	-.18	-.15	-.18	-.23	-.21	-.08	.03
2. PT Ability	--	-.01	-.02	.09	-.04	-.03	.00	.18	.19	-.05	-.00	-.01	-.10	.22	-.10	.12
3. (C) Narr. Coherence	--	--	.08	-.03	.04	.03	.06	-.04	-.06	.02	.04	.03	-.00	-.00	-.09	-.05
4. IPN Em. Labels	--	--	--	-.13	-.02	.10	.20	.03	-.03	.05	.04	.10	.01	-.01	.03	.08
5. IPN Em. Explanations	--	--	--	--	.16	-.03	-.04	-.01	-.05	-.02	.01	.07	.12	-.10	.10	.06
6. (M) Elaborations	--	--	--	--	--	.82*	.44*	.46*	.43*	.59*	.78*	.82*	.60*	.40*	.56*	.29
7. (M) Repetitions	--	--	--	--	--	--	.42*	.54*	.50*	.54*	.71*	.85*	.60*	.48*	.59*	.31
8. (M) Evaluations	--	--	--	--	--	--	--	.46*	.51*	.66*	.57*	.48*	.37	.46*	.50*	.44*
9. (C) Elaborations	--	--	--	--	--	--	--	--	.69*	.57*	.50*	.52*	.21	.89*	.60*	.48*
10. (C) Repetitions	--	--	--	--	--	--	--	--	--	.57*	.52*	.43*	.26	.80*	.55*	.49*
11. (C) Evaluations	--	--	--	--	--	--	--	--	--	--	.68*	.50*	.30	.66*	.65*	.24
12. (M) Facts	--	--	--	--	--	--	--	--	--	--	--	.52*	.34	.51*	.59*	.25
13. (M) Resolutions	--	--	--	--	--	--	--	--	--	--	--	--	.43*	.42*	.58*	.29
14. (M) Emotion States	--	--	--	--	--	--	--	--	--	--	--	--	--	.15	.24	.45*
15. (C) Facts	--	--	--	--	--	--	--	--	--	--	--	--	--	--	.43*	.32
16. (C) Resolutions	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	.19
17. (C) Emotion States	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Note. (C) = Child, (M) = Mother, IPN = Individual Personal Narrative, *$p < .0004$

Similarly, all three reminiscing style utterances produced by children were positively related to mothers' inclusion of facts and resolutions. In turn, mothers' and children's use of facts and resolutions were both positively related to one another. Additionally, both mothers' and children's insertion of factual details was significantly related to their use of resolutions. Finally, mothers' talk about emotion states was positively related to children's talk about emotion states during the co-constructed narrative.

Predictors of Children's Autobiographical Emotion Discourse

In order to address *Research Question 5*, whether maternal reminiscing *style* and *content* are equally important to the quality of children's individual autobiographical narratives, I next conducted four simultaneous regression analyses. For each regression model, I first included the variables that had been used to previously predict children's emotion understanding and then added the maternal reminiscing variables in question. Given the trending effect of gender on children's use of emotion explanations during their individual accounts of jealousy, I also included child gender as a predictor variable in all of the models. The first two regressions investigated the influence of maternal reminiscing *style* on the frequency of emotion labels and emotion explanations used by children during their individual autobiographical narratives. Eight variables were included as predictors: children's age (in months), child gender, TEC scores, perspective-taking ability scores, children's narrative coherence, and mothers' use of elaborations, repetitions, and evaluations. The results of the regression analyses are shown in Table 21. The model predicting children's use of emotion labels in the individual personal narrative was not significant. Children's gender, TEC scores, and maternal elaborations and repetitions were highly predictive, however, of the quality of children's autobiographical accounts of jealousy, together accounting for 32% of the variance in children's use of emotion

Table 21

Standardized Regression Coefficients Obtained from Multiple Regressions with Children's Emotional Discourse within the Individual Personal Narrative as Outcome Variables and Age, Gender, Emotion Comprehension (TEC), Perspective-Taking Ability, Narrative Coherence, and Maternal Reminiscing Styles as Predictor Variables

Predictor Variables	Emotion Labels β	Emotion Explanations β
Age (months)	.12	.03
Child Gender (1 = male)	-.01	-.24*
TEC Scores	.10	.33*
PT Ability	-.22	.10
Narrative Coherence	-.03	.04
Maternal Elaborations	-.24	.59**
Maternal Repetitions	.17	-.43*
Maternal Evaluations	.15	-.05
R^2 Total	.06	.32
Model *F*	.52	4.09***

*$p < .05$,**$p < .01$, ***$p < .0001$

explanations. Children with greater emotion understanding used more emotion explanations in their individual personal narratives than did children with less emotion understanding; girls produced more emotion explanations than did boys. Maternal reminiscing style also significantly predicted children's use of emotion explanations. Children of mothers who used more elaborations included more emotion explanations in their personal narratives than children of mothers who used fewer elaborations. Furthermore, children of mothers who included fewer repetitions in their conversations included more emotion explanations in their autobiographical accounts of jealousy than children of mothers who used more repetitions.

The second set of regression analyses examined the influence of maternal reminiscing *content* on the frequency of emotion labels and emotion explanations used by children during their individual autobiographical narratives. For these regressions, the three types of maternal

reminiscing content (i.e., facts, resolutions, emotion states) were included as predictor variables. Once again, the model predicting children's use of emotion labels was not significant. In addition, child gender and TEC scores were found to be predictive of children's use of emotion explanations during their autobiographical accounts of jealousy. There was also a trending influence of maternal emotion states. Children with higher TEC scores included more causal explanations in their individual personal narratives than did children with lower TEC scores. Girls also produced more emotion explanations than did boys. Furthermore, children of mothers who included more references to emotion states during the co-constructed narrative tended to use more emotion explanations when talking alone than did children of mothers who included fewer references to emotion states. Taken together, gender, TEC scores, and maternal emotion states accounted for 26% of the variance in the model (see Table 22).

Table 22

Standardized Regression Coefficients Obtained from Multiple Regressions with Children's Emotional Discourse within the Individual Personal Narrative as Outcome Variables and Age, Gender, Emotion Comprehension (TEC), Perspective-Taking Ability, Narrative Coherence, and Maternal Reminiscing Content as Predictor Variables

	Emotion Labels	Emotion Explanations
Predictor Variables	β	β
Age (months)	.02	.13
Child Gender (1 = male)	-.004	-.24*
TEC Scores	.13	.28*
PT Ability	-.20	.09
Narrative Coherence	-.01	.03
Maternal Facts	.03	-.03
Maternal Resolutions	.06	.01
Maternal Emotion States	-.06	.22†
R^2 Total	.03	.26
Model *F*	.26	3.08**

†$p = .06$, *$p < .05$,**$p < .01$

Because my prior analyses indicated that maternal reminiscing style and content were significantly related to children's reminiscing style and content, I next conducted four simultaneous regression analyses investigating the influence of *children's* reminiscing speech on the quality of their autobiographical narratives. The first two regressions investigated the influence of children's reminiscing *style* on the frequencies of emotion labels and emotion explanations used by children during their individual autobiographical narratives. The same models from above were used, with the inclusion of children's use of elaborations, repetitions, and evaluations included as predictors. The results of the regression analyses are shown in Table 23. Similar to the results from the regression model including maternal reminiscing styles, the model predicting children's use of emotion labels was not significant. For the model examining

Table 23

Standardized Regression Coefficients Obtained from Multiple Regressions with Children's Emotional Discourse within the Individual Personal Narrative as Outcome Variables and Age, Gender, Emotion Comprehension (TEC), Perspective-Taking Ability, Narrative Coherence, and Children's Reminiscing Styles as Predictor Variables

Predictor Variables	Emotion Labels β	Emotion Explanations β
Age (months)	.02	.14
Child Gender (1 = male)	-.01	-.25*
TEC Scores	.12	.25†
PT Ability	-.12	.06
Narrative Coherence	-.01	.05
Child Elaborations	-.07	-.02
Child Repetitions	-.12	.06
Child Evaluations	.12	-.02
R^2 Total	.04	.22
Model *F*	.35	2.43*

$^{\dagger}p = .07$, $^{*}p < .05$

predictors of children's use of emotion explanations, once again children's gender was found to influence their use of emotion explanations during the individual personal narrative task: Girls included significantly more causal explanations for emotion in their autobiographical accounts than did boys. In addition, a trending effect of children's emotion comprehension was found to predict their use of emotion explanations: Children who had higher TEC scores tended to use more emotion explanations when compared to children with lower TEC scores. Taken together, gender and TEC scores accounted for 22% of the variance in children's use of emotion explanations. In contrast to the model investigating the influence of maternal reminiscing styles, I found no influence of children's reminiscing styles on their use of emotion explanations.

The next two regression analyses examined the influence of children's reminiscing *content* (i.e., facts, resolutions, emotion states) on their use of emotion labels and emotion explanations within the individual personal narrative. The results are presented in Table 24. Once again, the model failed to predict children's use of emotion labels. For children's use of emotion explanations, the model failed to find significant effects of children's reminiscing content. Children's gender solely predicted children's inclusion of causal explanations of emotion in the individual personal narratives, accounting for 25% of the variance in the model. Once more, girls were found to use more emotion explanations than boys.

Table 24

Standardized Regression Coefficients Obtained from Multiple Regressions with Children's Emotional Discourse within the Individual Personal Narrative as Outcome Variables and Age, Gender, Emotion Comprehension (TEC), Perspective-Taking Ability, Narrative Coherence, and Children's Reminiscing Content as Predictor Variables

	Emotion Labels	Emotion Explanations
Predictor Variables	β	β
Age (months)	.06	.11
Child Gender (1 = male)	-.03	-.22*
TEC Scores	.12	.19
PT Ability	-.17	.14
Narrative Coherence	-.01	.06
Child Facts	-.05	-.21
Child Resolutions	-.04	.17
Child Emotion States	.01	.12
R^2 Total	.03	.25
Model *F*	.26	2.96**

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

Qualitative assessment of children's use of emotion explanations in the individual personal narrative. Next, I present examples of children's use of emotion explanations during their individual autobiographical accounts using the same qualitative methodology presented for children's use of emotion explanations during the fictional narrative and probe questions. In addition, I have included the reminiscing styles and content used during the co-constructed narrative for the same children as they were included as predictor variables in the regression models. Results for the children using fewer emotion explanations during the individual personal narrative are shown in Table 25 and the results for the children using more emotion explanations are presented in Table 26 by age group (i.e., 5-, 7-, 9-, and 11-year-olds for brevity). Given that the narratives included talk about themselves and others, all names have been changed to protect children's anonymity.

Table 25

Qualitative Demonstration of the Developmental Progression of Children's Use of Emotion Explanations in the Individual Personal Narrative - Results from Children Using Fewer Emotion Explanations.

Predictors		Co-Constructed Narrative Reminiscing Speech			Individual Personal Narrative Emotion Explanations
			Style	Content	
Example from 5-year-old					
Age	**5;4**	C: Like Cindy.	Elab	Fact	I: *Have you ever felt like the big frog?*
Gender	**Girl**	C: She has princess dresses.	Elab	Fact	C: I did before.
TEC	**3**	C: She has Jasmine, Tiana, and Ariel and a tail.	Elab	Fact	I: C*an you tell me about that time?*
PT	**1**	M: A tail?	Eval	Fact	C: When my great uncle died.
NC	**15**	M: An Ariel tail?	Eval	Fact	C: I felt sad and my mom cried.
		M: And what do you feel about that?	Eval	Emot	C: She burst into tears.
(M) Elab	**0**	C: I feel angry!	Elab	Emot	I: *And you what, burst into tears?*
(M) Rep	**1**	M: Why?	Eval	Fact	C: No my mommy.
(M) Eval	**5**	C: Because she gets dresses.	Rep	Fact	I: *Oh okay, your mommy burst into tears?*
		C: And I don't.	Elab	Fact	C: And she was just and she was crying.
(M) Facts	**5**	M: Cause she what? [prompt]			C: And I was still sad.
(M) Reso	**0**	M: Speak clearly. [prompt]			
(M) Emot	**1**	C: Cause she gets a Tiana dress, a Jasmine dress, and a feather tail, Ariel.	Rep	Fact	**Narrator Perspective = Off-Task Labels = 2, Explanations = 0**
(C) Elab	**7**	M: And you what?	Eval	Fact	
(C) Rep	**2**	C: And I just get princess dresses.	Elab	Fact	
(C) Eval	**0**	M: So you do have some princess dresses.	Rep	Fact	
		C: I just have a body [unintelligible].	Elab	Fact	
(C) Facts	**8**				
(C) Reso	**0**				
(C) Emot	**1**				
Example from 7-year-old					
Age	**7;9**	C: So many dresses.	Elab	Fact	I: *Have you ever felt like the big frog?*
Gender	**Girl**	M: My dresses.	Elab	Fact	C: Not really?
TEC	**4**	M: So you get jealous of me, of what I wear, or what?	Elab	Emot	I: *Not really?*
PT	**3**				C: Sometimes.
NC	**14**	C: Yeah kinda.	Eval	Emot	I: *Can you tell me about a time?*
		M: Why do you get jealous?	Eval	Emot	C: Well when my little sister came in I wanted attention too.
(M) Elab	**7**	M: You have beautiful clothes.	Elab	Reso	
(M) Rep	**1**	C: I know. [place holder]			
(M) Eval	**5**	C: But I don't have as many dresses as you.	Elab	Fact	**Narrator Perspective = Big Frog Labels = 0, Explanations = 0**
		M: I think you have more dresses.	Eval	Fact	
(M) Facts	**5**	M: You have like party dresses.	Elab	Fact	
(M) Reso	**3**	C: I really have party dresses?	Eval	Fact	
(M) Emot	**5**	C: I don't have calm dresses.	Elab	Fact	
		M: Calm dresses, like you mean, like summer dresses?	Eval	Fact	
(C) Elab	**6**				
(C) Rep	**1**	C: Yeah. [yes/no]			
(C) Eval	**2**	M: You want those?	Eval	Fact	
		C: Uh huh. [yes/no]			
(C) Facts	**5**	M: So you don't have to be jealous.	Elab	Reso	
(C) Reso	**3**	M: Why do you think you feel jealous hon?	Rep	Emot	
(C) Emot	**1**	C: Because I don't have that many summer dresses.	Rep	Fact	
		M: Mm yeah.[yes/no]			
		M: And what do you do when you're jealous?	Elab	Reso	
		C: I go to bed.	Elab	Reso	
		C: And try to relax.	Elab	Reso	
		C: And I want to sleep alone because, so I can relax.	Elab	Reso	
		M: Do you ever get angry at me?	Elab	Emot	
		C: No. [yes/no]			
		M: No?	Eval	Emot	

Note. TEC = Test of Emotion Comprehension Scores, PT = Perspective-Taking Ability Scores, NC = Narrative Coherence Scores, M = Mother, C = Child, I = Investigator

Table 25

Results from Children Using Fewer Emotion Explanations Continued.

Predictors		Co-Constructed Narrative Reminiscing Speech			Individual Personal Narrative Emotion Explanations
			Style	Content	
Example from 9-year-old					
Age	**9;9**	C: You gave Jerome five dollars.	Elab	Fact	I: *Have you ever felt like the big frog?*
Gender	**Boy**	M: Just tell them why I gave Jerome five dollars.	Rep	Fact	C: Once before in my school.
TEC	**6**				I: *Can you tell me a little bit about that?*
PT	**2**	C: No. [yes/no]			C: Sandra um kept on bothering me.
NC	**15**	M: Okay. [place holder]			C: She kicked me, she called me a "b" word.
		M: We have chores in the house, right?	Elab	Fact	
(M) Elab	**13**	C: And I did my chores.	Elab	Fact	C: And once when I told.
(M) Rep	**10**	C: She didn't give me no five dollars.	Elab	Fact	C: When when I acted, when I told on her, she said she didn't did it.
(M) Eval	**2**	M: He didn't do it.	Elab	Fact	
		C: I did!	Eval	Fact	C: So I started bugging out and went to the crisis room.
(M) Facts	**20**	M: So he has to do the bathroom.	Elab	Fact	
(M) Reso	**1**	M: Keep the bathroom and the toilet bowl clean.	Elab	Fact	I: *Oh okay, and how did you feel when all that was going on?*
(M) Emot	**4**				
		M: I told him not to use.	Elab	Fact	C: I feel mad.
(C) Elab	**9**	M: He has to keep that clean.	Rep	Fact	I: *So that's when you felt like the big frog?*
(C) Rep	**1**	M: And Jerome has to wash the dishes.	Elab	Fact	C: Uh huh.
(C) Eval	**4**	C: But he don't wash the dishes.	Eval	Fact	
		M: So. [place holder]			**Narrator Perspective = Little Frog**
(C) Facts	**12**	C: He only use the dry cleaner.	Elab	Fact	**Labels = 1, Explanations = 0**
(C) Reso	**2**	M: The dish washer.	Eval	Fact	
(C) Emot	**0**	C: Yeah. [yes/no]			
		M: So he, that's, he uses the dish washer.	Rep	Fact	
		M: He loads the dishes up.	Elab	Fact	
		C: Yeah that's, that's it.	Eval	Fact	
		M: And he does it.	Rep	Fact	
		C: But that's easy!	Elab	Fact	
		M: He doesn't do the bathroom!	Rep	Fact	
		C: That's easy to him!	Rep	Fact	
		M: He doesn't, he hasn't done the bathroom yet.	Rep	Fact	
		M: So every time allowance time comes, I give Jerome his five dollars.	Elab	Fact	
		M: And he don't get his five dollars.	Rep	Fact	
		M: Kamar, when's the last time that you do the bathroom?	Elab	Fact	
		C: Thirtieth.	Elab	Fact	
		M: Thank you. [place holder]			
		M: So that he gets mad.	Elab	Emot	
		M: He got mad.	Rep	Emot	
		M: That's the jealous part.	Elab	Emot	
		M: When you see everybody get their money.	Elab	Fact	
		M: And all I ask him to do is, when Ka--when Jerome takes the garbage out, put the new garbage bag in.	Elab	Fact	
		C: Yeah, I do that.	Eval	Fact	
		C: Why don't you pay me one dollar at least?	Elab	Reso	
		M: This is what we go through, chores and money.	Rep	Fact	
		M: This is what we, this the, this where he gets the jealous part.	Rep	Emot	
		C: I need money.	Elab	Fact	
		C: Next time I do my bathroom, I get extra money.	Elab	Reso	
		M: Okay. [place holder]			
		M: You gonna promise to do your bathroom?	Eval	Reso	
		C: Yeah. [yes/no]			
		M: Oh okay. [place holder]			

Note. TEC = Test of Emotion Comprehension Scores, PT = Perspective-Taking Ability Scores, NC = Narrative Coherence Scores, M = Mother, C = Child, I = Investigator

Table 25

Results from Children Using Fewer Emotion Explanations Continued.

Predictors		Co-Constructed Narrative Reminiscing Speech			Individual Personal Narrative Emotion Explanations
			Style	Content	
Example from 11-year-old					
Age	**11;1**	C: I felt jealous when my mom have a baby.	Elab	Emot	I: *Have you ever felt like the big frog?*
Gender	**Boy**	C: And I went with her to see.	Elab	Fact	C: Um angry?
TEC	**8**	C: Um when she was getting a baby.	Elab	Fact	[child identified big frog as feeling
PT	**3**	C: And they were going to check if it was a boy	Elab	Fact	angry in the probe questions]
NC	**18**	or girl.			I: *Uh huh.*
		C: And I wanted to go inside the room to see.	Elab	Fact	C: Sometimes.
(M) Elab	**0**	C: But they wouldn't allow me to go inside.	Elab	Fact	I: *Can you tell me about a time?*
(M) Rep	**0**	M: Why were you jealous about that?	Eval	Emot	C: Um when sometimes, when my friend
(M) Eval	**7**	C: Um I was jealous because I didn't want you	Elab	Emot	took my new basketball.
		to have.			C: And I'm not and I'm not join in in it.
(M) Facts	**4**	C: I wanted you to have like, only like two	Elab	Fact	C: And they don't want me to be in the
(M) Reso	**0**	brothers, or two or one sister.			basketball.
(M) Emot	**3**	M: So you didn't want to have Jackie?	Eval	Fact	I: *And that makes you feel?*
		C: No. [yes/no]			C: Angry.
(C) Elab	**8**	C: Um but like I don't know. [place holder]			
(C) Rep	**0**	C: I don't know. [place holder]			**Narrator Perspective = Big Frog**
(C) Eval	**0**	M: So you was just jealous just because you felt	Eval	Emot	**Labels = 2, Explanations = 0**
		jealous?			
(C) Facts	**6**	C: Yeah. [yes/no]			
(C) Reso	**0**	M: Because there was another baby coming?	Eval	Fact	
(C) Emot	**2**	C: Yeah. [yes/no]			
		M: And you thought it was going to take your	Eval	Fact	
		attention away or something?			
		C: I don't know. [place holder]			
		M: But didn't happen right?	Eval	Fact	
		C: No. [yes/no]			
		M: No, that's good.	Eval	Emot	
		M: Okay. [place holder]			

Note. TEC = Test of Emotion Comprehension Scores, PT = Perspective-Taking Ability Scores, NC = Narrative Coherence Scores, M = Mother, C = Child, I = Investigator

Table 26

Qualitative Demonstration of the Developmental Progression of Children's Use of Emotion Explanations in the Individual Personal Narrative – Results from Children Using More Emotion Explanations.

Predictors		Co-Constructed Narrative Reminiscing Speech			Individual Personal Narrative Emotion Explanations
			Style	Content	
Example from 5-year-old					
Age	**5;9**	M: Remember last night? [prompt]			I: *Have you ever felt like the big frog?*
Gender	**Boy**	M: When Alex went to McDonalds with Ma Ma?	Elab	Fact	C: Yeah.
TEC	**5**				I: *Can you tell me about the time?*
PT	**1**	M: You was jealous.	Elab	Emot	C: I felt sad when people hit me.
NC	**8**	C: I was jealous.	Rep	Emot	C: I felt sad when people hit me.
		M: Right? [place holder]			
(M) Elab	**5**	M: That's what that means.	Elab	Emot	**Narrator Perspective = Little Frog**
(M) Rep	**1**	M: Do you understand now?	Elab	Fact	**Labels = 0, Explanations = 2**
(M) Eval	**1**	M: Okay. [place holder]			
		M: Yeah. [yes/no]			
(M) Facts	**3**	M: You was jealous last night with Darryl, with	Rep	Emot	
(M) Reso	**0**	Alex.			
(M) Emot	**4**	M: And why?	Eval	Fact	
		M: Why did you feel jealous?	Elab	Emot	
(C) Elab	**0**	C: Because he got McDonalds.	Rep	Fact	
(C) Rep	**2**				
(C) Eval	**0**				
(C) Facts	**1**				
(C) Reso	**0**				
(C) Emot	**1**				
Example from 7-year-old					
Age	**7;4**	C: I was jealous when Stan was student of the	Elab	Emot	I: *Have you ever felt like the big frog?*
Gender	**Girl**	month.			C: No.
TEC	**8**	M: Oh okay. [place holder]			I: *You haven't?*
PT	**0**	M: So uh I didn't know about that.	Elab	Fact	C: No I'm only the last one that had been
NC	**15**	M: That's why you were angry like that.	Elab	Emot	born.
		M: Ah I remember. [place holder]			I: *Okay well have you ever felt that way in*
(M) Elab	**14**	M: And I don't understand why you crying so	Elab	Emot	*another situation?*
(M) Rep	**4**	much.			C: Yeah, one time my mom's friend came
(M) Eval	**5**	M: And I thought something happened to you.	Elab	Fact	to bring over a baby and I was jealous.
		M: And you don't want to tell me.	Elab	Fact	I: *Okay, can you tell me about the time?*
(M) Facts	**7**	M: But I don't understand.	Rep	Fact	C: My mom's friend brought brang a baby
(M) Reso	**13**	M: I thought something happened, different.	Rep	Fact	and I was jealous of it because my mom
(M) Emot	**3**	M: Ah you was, so what does it mean?	Elab	Fact	liked it.
		C: I don't even likes him.	Elab	Emot	C: My friend liked my mom's baby and I
(C) Elab	**8**	C: He's always, he's always getting good things.	Elab	Fact	was jealous.
(C) Rep	**0**	M: Uh huh and? [prompt]			I: *Oh okay.*
(C) Eval	**1**	M: So you jealous right?	Rep	Emot	C: She had to stay a little bit long and had
		M: So what are you going to do with that?	Eval	Reso	to stay at my grandma's and I was still
(C) Facts	**1**	M: With this jealousy?	Eval	Reso	jealous.
(C) Reso	**6**	C: I don't know. [place holder]			C: I was, I was still jealous.
(C) Emot	**2**	M: Because Stan become very good student	Elab	Fact	C: She had, she, the baby had to still stay
		now.			with my grandma's house cause I was
		C: And now I feel like and now I feel like	Elab	Reso	jealous.
		slapping him in the face.			
		M: Oh so what are we gonna do about that?	Eval	Reso	**Narrator Perspective = Big Frog**
		M: Maybe I'm thinking that one point to don't	Elab	Reso	**Labels = 1, Explanations = 7**
		be jealous.			
		M: And if be friend with Stan.	Elab	Reso	
		(*conversation continued on next page*)			

Note. TEC = Test of Emotion Comprehension Scores, PT = Perspective-Taking Ability Scores, NC = Narrative Coherence Scores, M = Mother, C = Child, I = Investigator

Table 26

Results from Children Using More Emotion Explanations Continued.

Predictors		Co-Constructed Narrative Reminiscing Speech			Individual Personal Narrative Emotion Explanations
			Style	Content	
Example from 7-year-old continued					
		M: You have to study more.	Elab	Reso	
		M: What do you think? [prompt]			
		M: Yes, yes, yes, the thing you don't like to do.	Elab	Reso	
		M: Study so to be also student of the month.	Elab	Reso	
		M: Huh, what do you think? [prompt]			
		C: I don't know. [place holder]			
		M: So what do you think? [prompt]			
		C: I don't know. [place holder]			
		C: Maybe she, maybe me to go on the computer.	Elab	Reso	
		C: And you'll be spending time with us.	Elab	Reso	
		M: Me?	Eval	Reso	
		C: Yup you.	Eval	Reso	
		C: You only spend a little bit of time doing my homework.	Elab	Reso	
		C: It's like two seconds.	Elab	Reso	
		M: So you think I need to study more, study with you right?	Eval	Reso	
		C: Yup. [yes/no]			
		M: Okay. [place holder]			
		M: So don't be jealous next time.	Elab	Reso	
		M: Take book and take pen, paper.	Elab	Reso	
		M: And let's go study.	Rep	Reso	
Example from 9-year-old					
Age	**9;8**	C: I, there's kinda one in eight square at school.	Elab	Fact	I: *Have you ever felt like the big frog?*
Gender	**Boy**	M: With what's his name?	Eval	Fact	C: Yeah, I felt like the big frog before with Annie.
TEC	**6**	C: Peter.	Elab	Fact	
PT	**5**	M: No, I didn't know that.	Eval	Fact	I: *Can you tell me about it?*
NC	**19**	C: Well. [place holder]			C: I felt like, when she does stuff right.
		C: It's, I mean, it's not like a real jealous thing.	Elab	Emot	C: And I've done a little bit of stuff wrong.
(M) Elab	**17**	C: Um Tommy, he can, he plays eight square.	Elab	Fact	C: And she gets all like, she gets the most attention.
(M) Rep	**8**	C: And he's like really good.	Elab	Fact	
(M) Eval	**4**	C: And he like can get anybody out, even Peter, and he's like.	Elab	Fact	C: And then it kinda makes me mad.
(M) Facts	**3**	M: Even back last year already?	Eval	Fact	C: But then then I usually do more stuff right to get more attention.
(M) Reso	**5**	C: Yeah. [yes/no]			I: *Oh okay.*
(M) Emot	**21**	M: Uh huh. [yes/no]			C: Well, it kinda like stinks when that happens.
		C: And like he's really good.	Rep	Fact	
(C) Elab	**8**	C: So I want to be as good as him.	Elab	Fact	C: Because you really don't mean to do it.
(C) Rep	**5**	C: Cause then I'll be able to be powerful.	Elab	Fact	C: It's just that you don't want to be the one that's doing everything wrong so it kinda is like, dang it, that kinda stinks.
(C) Eval	**0**	M: Well that's aspiring to be like somebody.	Elab	Emot	
		M: That's a healthy thing.	Elab	Emot	
(C) Facts	**8**	M: There's a fine line between jealous and aspire.	Elab	Emot	C: Cause you don't really want to be doing that to anyone but you kinda just do it.
(C) Reso	**0**				
(C) Emot	**5**	M: There's a very fine line.	Rep	Emot	C: Yeah um well one day Annie like, made mom's bed.
		C: Actually. [place holder]			
		M: You would like to be like him.	Rep	Emot	C: And I was just in my room uh just still doing nothing, doing nothing.
		C: Yeah. [yes/no]			
		M: Well that's called aspiring to be like someone.	Rep	Emot	C: And uh mom's like, "Thank you".
					C: And then she went in my room and she was like, "Why aren't you doing anything?"
		M: When you feel jealous, you want what they have.	Elab	Emot	
		M: Versus um, you would you would be willing.	Elab	Emot	C: And that kinda like and then I did something but that kinda made me feel sad.
		(*conversation continued on next page*)			

Note. TEC = Test of Emotion Comprehension Scores, PT = Perspective-Taking Ability Scores, NC = Narrative Coherence Scores, M = Mother, C = Child, I = Investigator

Table 26

Results from Children Using More Emotion Explanations Continued.

Predictors	Co-Constructed Narrative Reminiscing Speech			Individual Personal Narrative Emotion Explanations
		Style	Content	
Example from 9-year-old continued				
	M: You would either make somebody else miserable.	Elab	Emot	C: And so I kinda got mad at Annie cause like I wanted to do the bed and like she went and did it so.
	M: That you're jealous of.	Elab	Emot	
	M: Or it brings out a behavior you're not comfortable.	Elab	Emot	C: And so and then I was like, I was gonna do it.
	M: A behavior you wouldn't be proud of.	Elab	Emot	C: And so that would kinda stink and that kinda made me mad.
	M: But if it's something you're aspiring to.	Rep	Emot	
	M: It's nice to have people you look up to or aspire to be like.	Elab	Emot	C: Because I wanted to get the congratulations.
	M: That's a healthy thing.	Rep	Emot	C: And so that would kinda stink so.
	C: Yeah, there's. [yes/no]			
	M: Did you hear what I said? [prompt]			**Narrator Perspective = Big Frog**
	M: What did I say? [prompt]			**Labels = 0, Explanations = 8**
	C: You said that it's a healthy thing to be aspired.	Rep	Emot	
	M: Aspiring something.	Rep	Emot	
	C: Aspiring something.	Rep	Emot	
	M: And how is that different than jealousy?	Eval	Emot	
	C: Like aspiring is something where you um you look up like to it.	Rep	Emot	
	C: But jealousy is where you want that, what that person has.	Rep	Emot	
	M: Well it just doesn't bring out, you wanna have what they have but.	Rep	Emot	
	M: But you act out in ways that are hurtful.	Elab	Emot	
	C: Yeah I. [yes/no]			
	M: Did you hear me? [prompt]			
	M: Cause jealousy's not a good word.	Elab	Emot	
	M: It's a word that's felt.	Elab	Emot	
	M: Depends on how you react to one when someone else has right?	Elab	Reso	
	C: Yes. [yes/no]			
	M: It's the behavior you choose.	Elab	Reso	
	M: It's the behavior you choose as a reaction to the feeling.	Elab	Reso	
	C: Okay. [place holder]			
	M: It's always the choices we make right?	Elab	Reso	
	C: Uh huh. [yes/no]			
	M: And it's always the choices we make huh?	Rep	Reso	
	M: Okay. [place holder]			

Note. TEC = Test of Emotion Comprehension Scores, PT = Perspective-Taking Ability Scores, NC = Narrative Coherence Scores, M = Mother, C = Child, I = Investigator

Table 26

Results from Children Using More Emotion Explanations Continued.

Predictors		Co-Constructed Narrative Reminiscing Speech			Individual Personal Narrative Emotion Explanations
			Style	Content	
Example from 11-year-old					
Age	**11;11**	M: Do you remember? [prompt]			I: *Have you ever felt like the big frog?*
Gender	**Boy**	M: The time that your cousin Betty got a	Elab	Fact	C: Um yeah, just a little, some.
TEC	**9**	birthday present.			I: *Can you tell me about it?*
PT	**5**	M: And it wasn't her birthday?	Elab	Fact	C: One time when I was at school.
NC	**18**	M: And you didn't get one.	Elab	Fact	C: My best friend and me were in a group
		M: Do you remember? [prompt]			together.
(M) Elab	**9**	M: How mad you got?	Elab	Emot	C: And I forgot what I was going to say.
(M) Rep	**1**	C: Yeah, I got mad.	Eval	Emot	I: *Oh, just take your time.*
(M) Eval	**1**	C: And I threw a little fit.	Elab	Fact	C: Okay and we were in a group with each
		M: You did.	Eval	Fact	other.
(M) Facts	**5**	C: Yup. [yes/no]			C: And my teacher she made us draw a
(M) Reso	**4**	M: It wasn't, it wasn't fair was it?	Elab	Fact	picture of how we felt.
(M) Emot	**2**	C: Nope. [yes/no]			C: Because it was in third grade and we
		M: But it was, it was her birthday.	Rep	Reso	were um in a class that made us deal
(C) Elab	**1**	M: And you got jealous because you wanted	Elab	Emot	with like our emotions and stuff.
(C) Rep	**0**	something big too.			I: *Uh huh.*
(C) Eval	**1**	C: Yup. [yes/no]			C: And the teacher um, I showed my
		M: And then it was explained to you later.	Elab	Reso	picture to the teacher first.
(C) Facts	**1**	M: Why she got her present.	Elab	Reso	C: And she seemed to like it.
(C) Reso	**0**	M: And you didn't.	Elab	Reso	C: But then my friend, but then my other
(C) Emot	**1**				friend.
					C: When he showed the teacher his picture she liked it even more and I got a little mad.
					C: But then I got over it and started playing with him again.
					Narrator Perspective = Big Frog Labels = 0, Explanations = 3

Note. TEC = Test of Emotion Comprehension Scores, PT = Perspective-Taking Ability Scores, NC = Narrative Coherence Scores, M = Mother, C = Child, I = Investigator

Comparisons of children's individual autobiographical accounts revealed a trend where children who used more emotion explanations also tended to talk about their own experience from the big frog's perspective. These children, who used the most emotion explanations for their age group when telling their personal story alone, talked about their experience in terms of their feelings due to a perceived loss of attention from others (i.e., because of a baby that was liked more, sibling rivalry for parental attention, and peer rivalry for attention from a teacher). The exception for the children using more casual explanations for emotion was the 5-year-old boy who told his experience from the perspective of the little frog (i.e., feeling sad when people

hit him). In comparison, two of the children using the least emotion explanations for their age group talked about their experience from the perspective of the big frog: a 7-year-old girl referring to sibling rivalry for attention and an 11-year-old boy talking about peer rivalry for attention when his friends would not allow him to play basketball. The other children using the least emotion explanations for their age group were either off-task (i.e., a 5-year-old girl talking about her own sadness and her mother's sadness when her great uncle died) or told their story from the little frog's perspective (i.e., a 9-year-old boy being picked on by a peer). Further comparisons also demonstrated the influence of children's emotion comprehension that was revealed in the regression analyses. When comparing within age groups, children who used the most emotion explanations in their individual personal narratives had higher TEC scores than the children who used the least emotion explanations (except for the two 9-year-olds who had the same score on the TEC).

When examining children at the extremes of using emotion explanations, we can also see differences in their mothers' reminiscing speech during the co-constructed narrative. For instance, by taking the total number of utterances included in the co-constructed narrative (i.e., both the mother's and child's) and examining the percentage of the mother's contributions to the dialogue, I found that the children who used the most emotion explanations during the individual personal narrative had mothers who tended to dominate the conversation and contribute more to the conversation than their child; mother with 5-year-old: 78%, mother with 7-year-old: 72%, mother with 9-year-old: 69%, mother with 11-year-old: 85%. On the other hand, the children who used the least emotion explanations for their age group had mothers who tended to play a secondary role in the conversation or more evenly shared control of the discussion with their child; mother with 5-year-old: 40%, mother with 7-year-old: 59%, mother with 9-year-old: 64%,

mother with 11-year-old: 47%. Apart from controlling the conversation, I also found that the children who used more emotion explanations all had mothers whose primary contribution to the conversation was through a highly elaborative style, including many new details to the conversation and embellishing the dialogue through her speech. For these mothers, I found that their use of repetition and evaluation in the discussion always came secondary to elaboration through examining the proportion of the mothers' reminiscing styles of her total speech: the lowest percentage of elaboration was 59% used by the mother of the 9-year-old boy who used the most emotion explanations for his age group (range for all mothers of children using the most emotion explanations: 59% to 82% of all maternal utterances that were elaborative). In comparison, the children who used fewer emotion explanations had mothers who were more variable in how they talked with their child about their past experience of jealousy. For children using the least emotion explanations for their age groups, the range of maternal utterances that were elaborative was 0% to 54%. Moreover, the mothers of the 5-year-old and 11-year-old who used less emotion explanations in their individual personal story, contributed to the conversation with their child primarily through evaluation, asking their child questions about their experience but adding no new details to the conversation themselves.

Finally, when comparing children at the extremes of including emotion explanations in their individual accounts of jealousy I found general differences in the way their mothers discussed the emotional experience itself. For instance, I found that the children using the least emotion explanations for their age group had mothers that tended to simply ask their child how they felt during the experience (i.e., "*And what do you feel about that? Why?*", "*So you get jealous of me, of what I wear, or what? Why do you get jealous?*", "*Why were you jealous about that? So you was just jealous just because you felt jealous?*"). In contrast, children who used the

most emotion explanations for their age group had mothers who tended to provide more extensive information about the emotional state itself through explicit statements of meaning (i.e., "*You was jealous. That's what that means. Do you understand now?*", "*Well that's aspiring to be like somebody. That's a healthy thing. There's a fine line between jealous and aspire.*", "*Do you remember? How mad you got? It wasn't, it wasn't fair was it? But it was, it was her birthday. And you got jealous because you wanted something big too.*"). Overall, children who used more emotion explanations when discussing their previous experience on their own had mothers who dominated the conversation with their elaborative speech, discussing more fully their child's feelings during an episode of interpersonal rivalry.

Relationships across Tasks

Intelligence, socio-cognitive development, and narrative measures. Finally, in order to address *Research Question 6*, or to see whether participants' abilities and discourse transferred across narrative contexts, I examined relationships between the different measures of children's and mothers' abilities across tasks through correlational analyses. Specifically, I first assessed interrelationships between the intelligence and socio-cognitive development measures, followed by relationships between the intelligence and socio-cognitive development measures and the measures from each narrative task separately (i.e., fictional stories, responses to the probe questions, individual personal narratives, and reminiscing speech during the co-constructed narrative; see Table 27). To begin, analyses revealed significant relationships between the intelligence and social cognition measures after controlling for children's age and after Bonferroni correction. For instance, maternal verbal intelligence was positively related to both children's verbal intelligence and non-verbal intelligence: Children of mothers with higher PPVT scores had higher PPVT scores themselves as well as higher TONI scores than did

Table 27

Correlations between Mothers' Verbal Intelligence, Children's Verbal Intelligence, Non-Verbal Intelligence, Emotion Comprehension, Perspective-Taking Ability, and Narrative Measures (after partialling out effects of children's age and after Bonferroni corrections; df = 77)

Tasks	(M) PPVT	(C) PPVT	TONI	TEC	PT Ability
Intelligence & Social Cognition					
(M) PPVT	--	.42*	.32*	.06	.26
(C) PPVT	--	--	.52*	.31	.35*
TONI	--	--	--	.17	.25
TEC	--	--	--	--	.25
PT Ability	--	--	--	--	--
		*p < .005 after Bonferroni correction			
Fictional Narrative					
(C) Narrative Coherence	.02	.35*	.17	.09	.10
(C) Thematic Understanding	-.04	.21	.18	.12	.25
(C) Emotion Explanations	-.09	.12	.05	.02	.22
(M) Narrative Coherence	.38*	-.15	-.02	-.08	.02
(M) Thematic Understanding	.18	.24	.23	.03	.09
(M) Emotion Explanations	.21	.12	.15	-.01	.06
		*p < .002 after Bonferroni correction			
Probe Questions					
Emotion Explanations	.10	.26	.06	.24	.03
Affect Reasoning (1 = Jealousy)	-.05	.05	.15	.12	.13
		*p < .005 after Bonferroni correction			
Individual Personal Narrative					
Emotion Explanations	-.05	.24	.27	.22	.16
Narrator Perspective (1 = Big Frog)	.24	.47*	.43*	.14	.28
		*p < .005 after Bonferroni correction			
Co-Constructed Narrative					
(M) Elaborations	-.10	.06	.08	-.21	-.03
(M) Repetitions	.02	.18	.18	-.11	.03
(M) Evaluations	.14	.24	.24	-.01	.10
(C) Elaborations	.30	.44*	.35	.03	.32
(C) Repetitions	.19	.34	.28	-.07	.30
(C) Evaluations	.14	.19	.15	-.11	.03
(M) Facts	-.05	.01	.07	-.13	-.00
(M) Resolutions	.06	.24	.17	-.09	.07
(M) Emotion States	-.11	.09	.15	-.17	-.06
(C) Facts	.26	.36	.29	-.07	.34
(C) Resolutions	.20	.28	.24	.01	.03
(C) Emotion States	.14	.36	.30	.14	.24
Story Type (1 = Jealousy)	-.06	.05	.15	.01	.17
		*p < .0008 after Bonferroni correction			

Note. (M) = Mother, (C) = Child

children of mothers with lower PPVT scores. In addition, children's verbal intelligence (PPVT) was positively correlated with both their TONI scores as well as their scores on the perspective-taking ability assessment. Next, examination of relationships between the intellectual and socio-cognitive development measures and the fictional narrative measures revealed that verbal intelligence was significantly related to narrative coherence for both mothers and children. Mothers with higher verbal intelligence told more coherent fictional stories than did mothers with lower verbal intelligence. Similarly, children with higher verbal intelligence told more coherent fictional stories than did children with lower verbal intelligence. While there were no significant relationships between the measures of intelligence or social cognition and children's responses to the probe questions, children's verbal and non-verbal intelligence were both found to be positively related to their capacity to take the perspective of the big frog when talking about their own emotional experience individually. Children with higher PPVT scores and children with higher TONI scores were more likely to talk about their own emotional experience from the viewpoint of the big frog than were children with lower PPVT scores and children with lower TONI scores. Finally, children's verbal intelligence was also related to their style of speech during the co-constructed account with their mother: Children with higher PPVT scores used more elaborations or embellished the conversation with novel details more so than children with lower PPVT scores.

Fictional narrative measures and subsequent narrative tasks. Next, I examined relationships between the measures elicited from children's and mothers' fictional stories. Following this set of correlations, I next evaluated the interrelationships between the fictional narrative measures and the measures from the other narrative tasks (i.e., responses to the probe questions, individual personal narrative, co-constructed narrative). The results are presented in

Table 28

Correlations between Children's and Mothers' Fictional Narratives and Other Narrative Measures (after partialling out effects of children's age and after Bonferroni corrections; df = 77)

Tasks	(C) NC	(C) TU	(C) E Exp.	(M) NC	(M) TU	(M) E Exp.
Fictional Narrative						
(C) Narrative Coherence - NC	--	.26	.09	.10	-.11	-.10
(C) Thematic Understanding -TU	--	--	.54*	.14	.19	.41*
(C) Emotion Explanations – E Exp.	--	--	--	.14	.23	.26
(M) Narrative Coherence - NC	--	--	--	--	-.06	.22
(M) Thematic Understanding - TU	--	--	--	--	--	.28
(M) Emotion Explanations – E Exp.	--	--	--	--	--	--
			*p <.003 after Bonferroni correction			
Probe Questions						
Emotion Explanations	.22	.09	-.12	-.00	-.03	-.06
Affect Reasoning (1 = Jealousy)	.18	.25	.22	.15	.08	-.03
			*p <.004 after Bonferroni correction			
Individual Personal Narrative						
Emotion Explanations	.09	.34*	.12	-.16	.08	.21
Narrator Perspective (1 = Big Frog)	.21	.16	.19	-.01	.30	.06
			*p <.004 after Bonferroni correction			
Co-Constructed Narrative						
(M) Elaborations	.08	.23	.10	-.05	-.11	.33
(M) Repetitions	.10	.27	.23	.00	-.08	.34
(M) Evaluations	.14	.36	.15	.08	.14	.39*
(C) Elaborations	.11	.32	.31	.09	.13	.33
(C) Repetitions	.06	.36	.42*	.10	.15	.42*
(C) Evaluations	.08	.28	.13	.14	.16	.41*
(M) Facts	.05	.28	.21	.15	-.13	.30
(M) Resolutions	.12	.26	.12	-.10	-.07	.32
(M) Emotion States	.05	.19	.18	-.08	.17	.33
(C) Facts	.11	.26	.27	.13	.09	.29
(C) Resolutions	.01	.38*	.32	.11	.16	.44*
(C) Emotion States	.09	.29	.30	-.08	.27	.38
Story Type (1 = Jealousy)	.24	-.05	-.02	-.05	.06	.12
			*p <.0006 after Bonferroni correction			

Note. (M) = Mother, (C) = Child

Table 28 above. To begin, correlational analyses revealed significant relationships between the fictional narrative measures. Specifically, children's thematic understanding of jealousy was found to be related to both children's and mothers' use of emotion explanations during the fictional story: Children displaying more thematic understanding of jealousy used more emotion explanations during the story and had mothers who included more emotion explanations in

telling the story than did children who displayed less thematic understanding of jealousy. While no significant relationships were found between the fictional narrative measures and children's responses to the probe questions, children's thematic understanding of jealousy was found to be related to their use of emotion explanations during the individual personal narrative. Children who exhibited more thematic understanding of jealousy during the fictional story included more causal explanations of emotion when talking individually about their own emotion experience than did children who exhibited less thematic understanding of jealousy during the fictional narrative. Furthermore, children's thematic understanding of jealousy was found to be related to children's inclusion of resolutions during the co-constructed narrative: Children with more thematic understanding included more resolutions when talking with their mother about their past experience than did children with less thematic understanding of jealousy. Analyses also revealed many relationships between mothers' emotion explanations during the fictional story and children's and mothers' reminiscing speech during the co-constructed narrative. Mothers who included more causal explanations for emotion during the fictional story also included more evaluative utterances and had children who used more evaluation during the co-constructed narrative than mothers who used fewer explanations for emotion during the fictional story. Maternal emotion explanations during the frog story were also positively related to children's inclusion of resolutions during their co-constructed accounts of their previous experience. Finally, both children's and mothers' use of emotion explanations during the fictional story were positively related to children's use of repetition during the co-constructed narrative.

Probe question responses and autobiographical narrative measures. Next, I investigated relationships between children's responses to the probe questions and the measures obtained from children's individual personal narratives and the co-constructed narrative accounts

between children and their mothers (see Table 29). While children's responses to the probe questions were not related to one another or to the co-constructed narrative measures, children's affect reasoning was significantly related to both measures taken from children's individual personal narratives. Children who gave a jealousy reason for the big frog's feelings included more emotion explanations in their individual narrative and were more likely to relate their personal account from the perspective of the big frog when compared to children who gave a non-jealousy reason for the big frog's feelings when asked by the investigator.

Table 29

Correlations between Children's Responses to the Probe Questions and Autobiographical Narrative Measures (*after partialling out effects of children's age and after Bonferroni corrections; df* = 77)

Tasks	Emotion Explanations	Affect Reasoning (1 = Jealousy)
Probe Questions		
Emotion Explanations	--	-.17
Affect Reasoning (1 = Jealousy)	--	--
	*p < .05 after Bonferroni correction	
Individual Personal Narrative		
Emotion Explanations	.13	.30*
Narrator Perspective (1 = Big Frog)	-.00	.38*
	*p < .013 after Bonferroni correction	
Co-Constructed Narrative		
(M) Elaborations	-.04	.04
(M) Repetitions	.11	-.04
(M) Evaluations	.00	.07
(C) Elaborations	.17	.10
(C) Repetitions	.06	.05
(C) Evaluations	.01	-.02
(M) Facts	-.08	.05
(M) Resolutions	.11	-.01
(M) Emotion States	.02	-.00
(C) Facts	.13	.02
(C) Resolutions	.02	.15
(C) Emotion States	.13	.04
Story Type (1 = Jealousy)	-.09	.11
	*p < .002 after Bonferroni correction	

Note. (M) = Mother, (C) = Child

Individual personal narrative and co-constructed narrative measures. As shown in Table 30 below, I next examined relationships between the measures elicited from children's individual personal narratives and the measures from the co-constructed narratives between mothers and children. After controlling for children's age and after Bonferroni corrections, there were no significant relationships between the measures taken from children's individual personal narratives and the co-constructed narratives with their mothers.

Table 30

Correlations between Children's Individual Personal Narrative and Co-Constructed Narrative Measures (*after partialling out effects of children's age and after Bonferroni corrections; df =* 77)

Tasks	Emotion Explanations	Narrator Perspective (1 = Big Frog)
Individual Personal Narrative		
Emotion Explanations	--	.18
Narrator Perspective (1 = Big Frog)	--	--
	*p < .05 after Bonferroni correction	
Co-Constructed Narrative		
(M) Elaborations	.20	-.01
(M) Repetitions	.05	.07
(M) Evaluations	.05	.24
(C) Elaborations	.10	.28
(C) Repetitions	.06	.26
(C) Evaluations	.03	.08
(M) Facts	.04	-.05
(M) Resolutions	.14	.18
(M) Emotion States	.19	.04
(C) Facts	.00	.24
(C) Resolutions	.16	.18
(C) Emotion States	.17	.24
Story Type (1 = Jealousy)	-.06	.09
	*p < .002 after Bonferroni correction	

Note. (M) = Mother, (C) = Child

Reminiscing speech and story type within the co-constructed narratives. Finally, I examined relationships between children's and mothers' reminiscing speech and whether or not the topic of their conversation was a jealousy experience (rather than an experience of another emotion). As shown in Table 31, after partialling out effects of children's age and after Bonferroni correction, analyses revealed that that there were no significant relationships in the style or content that children and their mothers used when talking together and story type (i.e., whether or not they talked specifically about a jealousy experience).

Table 31

Correlations between Children's and Mothers' Reminiscing Speech and Story Type during the Co-Constructed Narrative (*after partialling out effects of children's age and after Bonferroni correction; df* = 77)

Measures	Story Type (1 = Jealousy)
Co-Constructed Narrative	
(M) Elaborations	.20
(M) Repetitions	.10
(M) Evaluations	.08
(C) Elaborations	.05
(C) Repetitions	.02
(C) Evaluations	.07
(M) Facts	.12
(M) Resolutions	.09
(M) Emotion States	.13
(C) Facts	.09
(C) Resolutions	-.04
(C) Emotion States	.04
	*$p < .004$ after Bonferroni correction

Note. (M) = Mother, (C) = Child

CHAPTER 5

Discussion

In the present study I sought to answer six research questions regarding the development of children's understanding of jealousy during middle childhood. In particular, I examined (1) the role of perspective-taking ability, (2) gender differences in children's personal accounts of jealousy and (3) reminiscing speech, (4) gendered patterns in maternal reminiscing speech, (5) the influence of maternal speech on children's talk about autobiographical jealousy experiences, and (6) relationships in emotional discourse across narrative contexts. In order to investigate these research questions, I employed a series of narrative tasks and independent assessments of 5- to 11-year-olds' abilities, evaluated their performance in relation to an adult comparison group (i.e., their mothers), and assessed interrelationships between mothers' and children's discourse about jealousy.

Summary of Research Questions and Findings

Research question 1: Role of perspective-taking ability. First, I examined whether I could provide confirmation of the role of perspective taking in children's jealousy understanding using an independent measure of perspective-taking ability and multiple measures of emotion understanding during narrative construction. Most relevant prior research on children's emotion understanding utilizing narratives has focused on preschoolers' talk about basic emotions (e.g., happiness, sadness, anger, fear) with a complete lack of assessment of the role of perspective taking in children's emotion understanding. As such, my earlier research was the first study to document the role of perspective-taking ability in the development of children's understanding of jealousy between the ages of 5 and 8 (Aldrich et al., 2011). By including an independent measure

of perspective-taking skill and multiple measures of emotion understanding, the present study is unique in that it is the first to more fully explore the development of children's jealousy comprehension over a variety of narrative contexts while assessing the development of perspective-taking skill during middle childhood (5- to 11-years).

To begin, the data from my study confirm the elaboration of children's socio-cognitive development during middle childhood suggested by the literature (e.g., de Rosnay & Hughes, 2006; Flavell et al., 1993; Selman & Byrne, 1974). For instance, children's jealousy-specific emotion understanding (assessed through thematic understanding of jealousy scores, affect reasoning scores), general emotion understanding (assessed through use of emotion explanations in the fictional narrative, post-story probe questions, and individual personal narrative), standardized emotion comprehension (TEC scores), and perspective-taking ability scores were all found to significantly increase with age. Upon direct examination of the relationship of children's perspective-taking ability to their emotion understanding, I was able to confirm the findings from my previous study (Aldrich et al., 2011). Once again, I found that children's scores on the thematic understanding of jealousy measure were predicted by scores of narrative coherence as well as scores on the independent assessment of perspective-taking skill. In addition, I found that the predictive influence of narrative coherence and perspective-taking ability were beyond that of children's age. I was also able to extend my previous findings to children's use of emotion explanations during the fictional narrative: Children's ability to provide causal explanations for characters' emotions was predicted by their age as well as their perspective-taking skill. Another pattern of findings emerged, however, upon examination of the prompted measures of children's emotion understanding assessed in the present study. For instance, the prompted jealousy-specific measure of emotion understanding (i.e., affect reasoning

score) was only found to increase with children's age. Furthermore, children's prompted use of emotion explanations (both in talking about the big frog's feelings and about their own during the individual personal narrative) were found to be predicted by increases in children's emotion comprehension (TEC), not perspective-taking ability, beyond the influence of age.

Research question 2: Gender differences in children's personal narratives. Second, I investigated whether girls would produce more developed autobiographical accounts of jealousy compared to boys. Work by Robyn Fivush and her colleagues suggests that girls from a very young age talk more about emotions than boys and place negative emotions in a more interpersonal context than boys (Fivush & Buckner, 2000). With the majority of narrative research concerning basic emotions, there has been the need to investigate older children's discourse about more complex emotions, such as jealousy. By asking children to talk about a previous experience where they felt like the big frog (i.e., jealous), I was able to examine whether the gender differences found in the preschool years and adulthood, are present during middle childhood and whether they would be found concerning a complex emotion that is self-relational in nature.

Consistent with the findings from studies of younger children, I found that girls produced more sophisticated narratives when talking about their own previous experience when compared to boys. Specifically, while girls and boys did not differ in their use of emotion labels, girls used more emotion explanations in their individual personal narratives than did their male counterparts (finding confirmed through results of subsequent regression analyses). Furthermore, whereas girls and boys were found equally likely to tell their personal story from the perspective of the big frog, examination of the thematic content of these narratives revealed that girls were more likely to refer to instances of jealousy where they had experienced an episode of

interpersonal rivalry in a relationship. Boys, on the other hand, were more likely to talk about an event where they felt envious of another or had been physically aggressive like the big frog. In contrast to the findings from children's individual personal accounts, there were no gender differences in the measures of children's socio-cognitive development (i.e., TEC scores, perspective-taking ability) or intellectual development (i.e., PPVT, TONI scores). Furthermore, there were no differences between girls and boys in terms of their emotion understanding as assessed through the fictional narrative or post-story probe questions.

Research questions 3 and 4: Gendered patterns in reminiscing speech. Next, I directly examined the effects of gender on children's and mothers' reminiscing speech during their co-constructed accounts of jealousy. Specifically, I sought to address (1) whether girls are more elaborative and emphasize emotional content more than boys, and (2) whether mothers of girls are more elaborative and emotion-focused than mothers of boys when talking about their child's past experience of jealousy. The majority of related research has focused on young children's (preschooler's) talk about past experiences of basic emotions with their mothers. The current study is the first to examine both reminiscing *style* and *content* in mother-child conversations about children's experiences of a complex emotion. Thus, I aimed to explore whether the gendered patterns of reminiscing speech found in discourse between preschoolers and their mothers would be displayed in mother-child conversations during middle childhood.

Contrary to my expectations, I did not find evidence that mothers used one distinct style or content category with daughters over sons, or that girls' discourse was more style- or content-focused than boys'. I did find, however, that mothers and daughters had a tendency to talk more about their child's previous experience than did mothers and sons. Gender differences in the

length of the co-constructed narratives, however, were not due to differences in mothers' PPVT scores, nor did their fictional narratives differ by child gender.

Research question 5: Role of maternal reminiscing. Next, I investigated the extent to which maternal reminiscing influences the quality of children's talk about their own emotional experiences during middle childhood. It has been suggested that by talking with a parent about a previous experience, children are given the opportunity to develop their sense of self through a guided interpretation and evaluation of the event in question (Fivush, 2001; Fivush & Nelson, 2004; Haden et al., 1997). Research on maternal reminiscing style, in particular, has found that the ways mothers talk to their children influences children's development of autobiographical memory, theory of mind, and emotion understanding (among other developmental outcomes; Fivush et al., 2006; Fivush & Nelson, 2004; Nelson & Fivush, 2004). This research suggested that mothers who are more elaborative (as opposed to being more repetitive) facilitate their child's development of an emotional sense of self-in-relation to others (i.e., this is how I convey my feelings to others). In addition, they proposed that mothers who include more emotional content in their conversations about past event experiences have children who have enriched notions regarding their sense of emotional self-definition (i.e., this is the kind of emotional person I am). By assessing the influence of both maternal reminiscing *style* and reminiscing *content* on children's autobiographical narratives, I sought to extend the literature to specifically address the question of whether both maternal *style* and *content* are equally important to children's autobiographical narrative ability.

Overall, as far as the reminiscing style of maternal speech, mothers were found to predominantly use elaborations and repetitions when discussing their child's previous experience. As expected from the preschool literature, I found that maternal reminiscing style

had an effect on the quality of children's individual autobiographical accounts. Specifically, mothers who presented more information about their child's previous experience through elaboration (i.e., providing lots of details about the event) had children who included more causal information about emotion when talking about their own experience independently compared to mothers who used less elaboration. I also found an influence of maternal repetition that fell in line with the preschool literature: Mothers who used more repetition or merely repeated information previously mentioned in the conversation had children who included fewer emotion explanations in their personal narratives compared to mothers who used less repetition. As far as the content of maternal speech, mothers focused primarily on the facts of the event and resolutions to their child's jealousy experience, rather than defining or talking about the emotional state itself. Upon examination of the influence of maternal reminiscing content, I found that mothers who included more emotional content tended to have children that used more emotion explanations when talking individually about their past experience compared to the children of mothers who referred less to emotion states when talking with their child.

Within the context of a *co-constructed* narrative, a child's and mother's discourse is mutually influenced by one another through a dialectical process (Vygotsky, 1978). This was evidenced in the current study by the numerous significant relationships between maternal speech and children's speech during the reminiscing task. Although the majority of the literature on parent-guided reminiscing has focused primarily on the mother's contribution to the conversation, I also examined the possible influence of children's reminiscing style and content on their individual personal narratives. This was done to provide corroboration that my results were indeed showing an effect of maternal speech and not just an effect of the mutual co-construction between children and their mothers. Overall, mothers and their children were very

similar in *style*, but varied considerably in *content*. Children, like mothers, were found to predominately use elaborations and repetitions when talking with their mother about their previous experience. In contrast to mothers, however, children were found to primarily include factual details about the event, rather than resolutions or descriptions of the emotion state itself. When directly examining the impact of children's reminiscing speech, I failed to find any influence of children's reminiscing *style* or *content*, demonstrating that it was indeed maternal speech —not children's— that had an effect on the quality of children's talk about their own emotional experiences individually.

Research question 6: Relations across narrative contexts. Finally, I examined whether participants' emotional discourse would transfer across narrative contexts. Specifically, I sought to assess (1) whether the measures of children's emotion understanding were related to one another across tasks (e.g., would children who scored higher on thematic understanding of jealousy during the fictional narrative also use more emotion explanations when talking about their own personal experience?), and (2) whether measures from mothers' fictional narratives were related to children's emotion understanding. In regards to children's emotion talk, both of the jealousy-specific emotion understanding measures (i.e., thematic understanding of jealousy, affect reasoning) were related to children's use of emotion explanations during the individual personal narrative. Children who displayed more jealousy understanding produced more sophisticated autobiographical narratives with more causal explanations of emotion included than children who displayed less jealousy understanding. Furthermore, children who displayed more thematic understanding of jealousy during the fictional narrative also produced more resolutions for their emotional experience when talking with their mother. While mothers' thematic understanding of jealousy was not related to any of the measures of children's emotion

understanding, significant relationships were found between mothers' use of emotion explanations during the fictional story and children's emotion understanding. Mothers who included more explanations for characters' emotions during the story had children who exhibited more thematic understanding of jealousy and generated more resolutions for their emotional experience during the co-constructed conversation with their mother.

Implications

First, the findings from the current study provide a much needed glimpse into children's comprehension of jealousy and interpersonal rivalry during middle childhood. Although very few studies have investigated children's understanding of jealousy, the findings from the current study confirm the results from my earlier work while expanding the age range to include children through 11-years-old. Previously, we found that for children between the ages of 5 and 8, anger was the most salient emotion attributed to the big frog, rather than explicit talk about jealousy (Aldrich et al., 2011). Qualitative assessments of the narratives in the present study revealed similar patterns. During the self-generated fictional story, both children and mothers most frequently referred to characters' experiencing the basic emotions of happiness, sadness, and anger, rather than explicit talk about the complex emotion of jealousy. However, when specifically asked how they thought the big frog felt and why, children's prompted responses emphasized the big frog's jealousy, anger, and sadness through explicit references to these emotions. Children's prompted individual personal narratives revealed that when talking about their own experience like the big frog, children explicitly referenced anger, jealousy, and sadness. Finally, during the co-constructed conversation with their mother, both children and mothers most frequently referenced the feelings of jealousy, sadness, and happiness. Ultimately, these results show that for children between the ages of 5 and 11, their understanding of jealousy

is related to the negative emotions of anger and sadness, feelings that have been found to be associated with jealousy by adults (Smith et al., 1988). While jealousy was not frequently referred to in the story book telling (by mothers or by children), I found that children provided more explicit references to jealousy when prompted (either about another's emotions or about their own), and this ability increased with age. From these findings, children's understanding of jealousy is such that older children are often able to provide an explicit "jealousy" label when prompted– showing that children's use of the term *jealous* is becoming part of their emotion state vocabulary between the ages of 5 and 11.

In addition, my data provide much needed information about how children use narrative evaluation in creating a *landscape of consciousness* about interpersonal rivalry during middle childhood. Labov and Waletzky originally proposed that evaluation as a linguistic device develops in a linear fashion; Suggesting that once a child acquires the skill to use evaluation for emphasis, they would be able to transfer its use across contexts (1967). My findings support this notion in part. For instance, I found that children's use of emotion explanations increased as a function of age, irrespective of narrative context. Furthermore, I found that children's jealousy understanding within the fictional narrative and affect reasoning probe question transferred to children's use of emotion explanations in the individual autobiographical narrative setting. However, as previously mentioned, children primarily focused on the emotions of happiness, sadness, and anger when recounting the episodes of the big frog's interpersonal rivalry with the little frog. On the other hand, when specifically asked about the big frog's feelings, a large amount of children's responses included explicit references to jealousy. Children were also found to use explicit references to jealousy when prompted to talk about a time they felt like the big frog and when asked to talk about their own experiences. Why would children not mention

jealousy in their self-generated stories, but be able to explicitly reference this complex emotion when asked? Some have suggested that instead of narrative evaluation developing linearly, its use is often context-dependent. For instance, Colette Daiute and Katherine Nelson suggest that children's use of evaluation is an iterative process, fluctuating based on their knowledge of— and engagement with— new communicative contexts (1997). According to these authors, young children initially enhance their acquired cultural scripts for events in their life through *individuating* the script (i.e., making it one's own) and *evaluating* the event in ways that provide meaning. Through this process, children are able to create a story from a script. As children age, and become engaged in new communicative contexts (such as the culture of school), this process of creating stories from scripts repeats itself within the new contexts. In doing so, children use less evaluation in the newer context, relying solely on their scripts, until they become accustomed to the newer context. Once adapted to the new context, children then begin to provide evaluation of their experiences to garner meaning for themselves and others. Ultimately, these ideas suggest that children often have the ability to use narrative evaluation, but do not do so in every context.

Building off of Daiute and Nelson's suppositions, my data show that children are becoming more skillful in answering questions about feelings surrounding interpersonal rivalry during middle childhood. Furthermore, as they become more aware of the social nature of emotions (such as is the case with jealousy in a relationship), children are more adept at providing explicit complex emotional evaluations of events within a social context (being asked questions by an adult investigator). It may be the case that, while children have been socialized to tell stories that contain emotional information, most of their early experiences have been with basic emotional themes (supported by the fact that the mothers telling the story tended to focus

on basic emotion references as well). Furthermore, children of this age range may have had less experience with narrating fictional stories themselves, especially ones centering on complex emotional themes. As such, children may have had less experience self-generating complex emotional evaluations of another's feelings during an episode of interpersonal rivalry. Indeed, it has been suggested that fictional narrative ability develops further as children become socialized into the culture of school (Ukrainetz et al., 2005). Beyond emphasizing the development of children's complex emotional evaluation during between the ages of 5 and 11, the current study provides evidence that it is indeed important to utilize various narrative genres in assessing children's developing abilities (Daiute, 2011). If not, the abilities that one is seeking to document may be masked by the narrative event itself.

Another pattern to emerge from the qualitative analyses was the distinct overlap between the emotions of jealousy and envy. Past theoretical work has separated these two emotions based on different causal experiences; jealousy is motivated by thoughts of losing an important relationship to a rival, whereas envy is motivated by thoughts of wanting something another person possesses (Smith et al., 1988). More recent scholarship has continued to separate the two emotions, through making ownership distinctions: either wanting something that another person has or not wanting to lose what has already been acquired. Specifically, according to Ben-Ze'ev (2010), feelings of jealousy are related to negative thoughts about losing something that we possess to another, often times our relationships (e.g., *I hope my best friend doesn't like him better than me.*), while feelings of envy are related to negative thoughts surrounding a perceived inferiority to another that is –in our eyes– unwarranted (e.g., *It's not fair that she gets all of the accolades, I work hard too.*). However, empirical work with adults has often found little to no differences in individuals' distinctions between the terms *jealousy* and *envy* (Salovey & Rodin,

1984, 1986; Smith et al., 1988). In fact, a recent corpus-based appraisal of individuals' use of these terms found that both *jealousy* and *envy* are used to refer to very similar affect-inducing situations (Ogarkova, 2007). The results from the present study fall in line with the research suggesting that these two terms are used interchangeably, with *jealousy* being used most commonly to denote feelings of both jealousy *and* envy by adults (Smith et al., 1988). Although the current study employed the theoretical distinction between these two emotions for the qualitative assessments, the children and mothers in the sample did not differentiate between the two feelings. When asked to talk about a time the child felt jealous, the majority of mother-child dyads talked about an experience of envy or when their child wanted what another person had while often using the term *jealous* to describe those feelings. Indeed, none of the mothers or children referred to the emotion state of *envy* explicitly. The same was true of children's individual accounts of jealousy and references to the big frog's feelings during the post-story probe questions; while some of the children referred to envy experiences, none ever used the term *envy*. In fact, the term *envy* was only used twice throughout the entire study. Both references were by an 11-year-old boy during the fictional narrative task in reference to the big frog's feelings: "*the older frog is sitting with the newer frog and he looks pretty envious and like angry at the younger frog*; *then the boy tells the old frog to stay behind while the him, the other pets, and including the younger frog go off some boat adventure and the older frog looks even more like envious than ever*". While the participants in the study often regarded feelings of jealousy and envy similarly, examination of children's affect reasoning enhances what we know about children's jealousy understanding between the ages of 5 and 11. Overall, children's prompted responses about the motivations for the big frog's feelings revealed that as children get older during middle childhood, they become more adept at reasoning about another's feelings of

jealousy in terms of loss. Specifically, around the age of 8, children recognize the threat of losing something important in a relationship to another –a defining component of jealousy from a theoretical point of view. In the present sample, this was referenced through explicit statements of the loss of affection in a relationship, the loss of attention from others, or the loss of social standing such as being replaced by another.

Fourth, the findings from my study suggest that between the ages of 5 and 11, children's perspective-taking ability and understanding of, and ability to talk about, complex emotions increases. Specifically, I documented age-related increases in children's socio-cognitive development during middle childhood through assessment of their perspective-taking ability and through multiple measures of their emotion understanding within various narrative contexts. My initial decision to examine children's perspective-taking skills in relation to their understanding of a complex emotion (i.e., jealousy) was largely driven by numerous proposals suggesting that emotion understanding and perspective taking are critically intertwined (e.g., Erikson, 1950; Selman, 1971, 1980, 1981). With both of these competencies becoming more elaborated throughout middle childhood (Wellman et al., 2001), it was clear that research investigating children's understanding of a complex emotion necessitated an examination of perspective-taking ability as well. Within the current study, I found that children's socio-cognitive development, narrative abilities, and intellectual development all increased as a function of age. However, when specifically examining children's emotional discourse, different patterns of development emerged. For instance, across narrative tasks, children were found to produce both emotion labels and emotion explanations for individuals' feeling states. Children's use of emotion labels, however, was not found to increase with age and was not related to any of the socio-cognitive development measures. Conversely, children's use of emotion explanations was

found to increase with age and was associated with developmental increases in social-cognition (i.e., perspective-taking ability or emotion comprehension) throughout the various narrative tasks. These findings suggest that children's labeling of a person's emotion state is already developed by middle childhood, where there is still a large amount of variability in the use of emotion explanations between the ages of 5 and 11. Furthermore, as children's perspective-taking ability and emotion comprehension grows during middle childhood, so does children's ability to move beyond explicit labels to provide more causal information about emotions.

In addition, I observed distinct effects of socio-cognitive development (i.e., perspective-taking ability, emotion comprehension) on the various emotion understanding measures. In particular, I found that perspective-taking ability influenced children's self-generated talk about others' emotions, whereas general emotion comprehension (TEC scores) influenced children's prompted talk about another's emotions or about their own. Robert Selman suggested that perspective taking is a skill that is required to infer how someone else is feeling (1971). Within the current study, perspective-taking ability was shown to have the most influence on children's emotional discourse when a child was asked to self-generate a story, not when specifically asked how the big frog was feeling or when asked to talk about their own previous emotional experience. For these prompted narratives, children's emotion comprehension played a larger role in whether or not they would provide explanations for emotion. The data from the current study demonstrate that during middle childhood, perspective-taking ability plays a large role in whether children emphasize the motivations behind characters' emotions when they are acting as a gatekeeper to a storyline. By being able to step into the characters' shoes, children are then better able to determine how a character is feeling and why and then relate those details to their audience. In addition, my findings indicate that a child's perspective-taking skill plays less of a

role in being able to directly answer a question about another's feelings or to generate an emotional experience of their own. As shown in the current study, in doing the latter, children's general emotion comprehension is more prominent in a child's ability to provide causal explanations for those feelings. Given the pattern of results found, my findings corroborate claims that perspective taking is an essential component in children's emotion understanding. Moreover, my data indicate that children's emotion understanding and perspective-taking ability become more integrated during middle childhood, with enhanced perspective-taking ability assisting children in their perceptions of others' feelings of jealousy and helping children convey information about another person's feelings of interpersonal rivalry and increased emotion comprehension helping children convey information about their own.

The results of this study also support the claim that parent-guided reminiscing mediates children's socio-cognitive understanding (Fivush et al., 2006). Specifically, the current study provides evidence that variations in maternal input are related to individual differences in children's abilities to talk about their own emotional experiences. Furthermore, my data extend the literature by finding that the stylistic differences of maternal reminiscing related to young children's abilities function in much the same manner during middle childhood. Overall, I found evidence that maternal *elaboration* enhances, while maternal *repetition* impedes, the quality of children's autobiographical narratives. The current research also extends the literature on mother-child reminiscing by including analyses investigating the influence of *children's* reminiscing speech. In doing so, my data suggest that children's reminiscing speech does not have an effect on their autobiographical abilities.

From a sociocultural perspective (Vygotsky, 1978), when talking with a parent about a past experience children are acquiring the norms and meanings of that experience ascribed by

their culture. Through the creation of shared accounts of their previous experiences with their mother, children gradually blend information from their mother's discourse into their knowledge base as this material is internalized (Nelson, 1996). Through this lens, if we view the role of the mother in the co-constructed narrative task as teacher and the role of the child as apprentice, the pattern of findings from the present study illustrate the dynamic process involved in mother-child conversations. Within the context of jealousy experiences, mothers who used more elaboration, or increasingly embellished the conversation with their child, had children who were better able to explain their past emotional experience when alone. I suggest maternal elaboration functions as a way to encourage children to think for themselves and to foster within them a sense of exploration about the events surrounding their emotional experience and what caused those feelings. As a result of this encouragement, children are better equipped to relate emotional experiences on their own (as shown in the results from my study). Conversely, when mothers continuously repeat the same details over and over, they are not introducing anything new to their children and thereby they are not encouraging their children's ability to think for themselves or about their previously experienced feelings. As shown in my findings, mothers who repeatedly referenced the same details about the event had children who were less able to provide emotional explanations in their own autobiographical accounts of jealousy.

In sum, I also want to emphasize the differences in the predictive value of maternal *style* versus maternal *content* given the fact that these types of reminiscing were taken from the same utterances (i.e., each utterance was coded for both style and content). Notably, while maternal style (i.e., elaborations, repetitions) influenced the quality of children's autobiographical narratives, there was only a small trending effect of maternal *emotion state* content, and no effect of the other types of maternal content (i.e., facts, resolutions). These findings indicate that it was

not just maternal talkativeness that had an effect on children's abilities to tell higher quality personal narratives. On the contrary, my results suggest that during middle childhood it is not really *what* mothers say, but *how* they say it that influences children's abilities to talk about their own past experiences of emotion.

In addition, the present study sheds light on differences in the emotional socialization process for girls and boys. Numerous studies have found that women are more emotionally expressive than men throughout the lifespan (see Brody, 1985 for a review). However, work with children has traditionally focused on preschoolers' talk about basic emotions. My data suggest that the gender differences commonly reported in young children's speech are also present during middle childhood, but to a lesser degree. For instance, I found that gender was a significant predictor of children's use of emotion explanations during the individual personal narrative, with girls including more causal explanations for emotion than boys. Furthermore, of the children who told their personal story from the perspective of the big frog, girls were more likely than boys to talk about an episode where they had felt jealous due to interpersonal rivalry in a relationship. At the same time, I found that girls and boys did not differ in their socio-cognitive development, intellectual development, or emotion understanding through any of the fictional narrative measures (both self-generated and prompted). The absence of gender differences found in the current study's fictional narrative measures was also documented in my earlier research (Aldrich et al., 2011). Taken together, these results suggest that girls' emotional discourse is not all-encompassing; instead their enhanced abilities seem to be context-dependent. Indeed, others have found that during middle childhood, girls' autobiographical narratives are more social in nature when compared to boys': 8-year-old girls when talking about the past, incorporated not only feelings associated with the event, but also mentioned the other people

who were present and the relationships involved, more so than 8-year-old boys (Buckner & Fivush, 1998). In addition, research with older children has found that girls describe past experiences in a more interpersonal context than boys. For instance, Stapley and Haviland (1989), in a study of 11- to 17-year-olds, found that girls and boys differed in the types of events that brought about emotions. For boys, more prominent emotions (i.e., those that were self-reported as being experienced with the greatest frequency, intensity, and duration) were activity-based and related to goal attainment. Girls' prominent emotions on the other hand, were related to relationships and interactions with others. The foundation for the individual personal narrative task employed in the current study was the large body of research reporting gender differences in preschoolers' talk about basic emotional experiences. While the girls and boys in the present study did not vary in terms of their abilities or emotion expression during the story-related tasks, they did differ when it came to talking about their own experiences. Therefore, the results of this study support the notion that girls from a young age learn to relate their own emotional experiences in terms of other people, more so than do boys, with this knowledge being reflected in the girls' more sophisticated autobiographical accounts of jealousy.

Upon investigation of the maternal influence on children's emotional autobiographical discourse, my findings fall in line with studies reporting differences in the ways in which girls and boys are socialized to express emotion. As mentioned previously, the literature on maternal reminiscing speech has traditionally focused on reminiscing *style* or reminiscing *content,* with both approaches contributing related findings regarding gender differences in maternal socialization of emotion. For instance, studies have found that mothers are more elaborative with their daughters than with sons (Fivush et al., 2003; Reese & Fivush, 1993; Reese et al., 1996) and in turn girls are more elaborative than boys (Buckner & Fivush, 1998). In addition, research

focusing on the *content* of mother-child conversations has found that mothers talk more about emotions with girls than with boys (Adams, Kuebli, Boyle, & Fivush, 1995; Dunn, Bretherton, & Munn, 1987; Fivush & Buckner, 2000) and place emotional conversations in a more interpersonal context with daughters than with sons (Buckner & Fivush, 1998; Fivush, 1989; Fivush et al., 2003). In turn, girls talk more about emotion (Dunn et al., 1987; Fivush, Brotman, Buckner, & Goodman, 2000) and do so in a more interpersonal context than boys (Buckner & Fivush, 1998; Stapley & Haviland, 1989).

Consistent with the gender differences found in maternal-guided reminiscing with preschoolers' about their basic emotion experiences, my data suggest that these disparities exist between girls' and boys' conversations with their mothers during middle childhood. While I found that mothers of girls did not differ in terms of verbal intelligence or any of the fictional narrative measures when compared to mothers of boys, I did find that mother-daughter dyads tended to talk more about the jealousy experience than mother-son dyads. These results further support the idea that girls are socialized to view emotion as being more central to their sense of self to a greater extent than boys. Although I only assessed mother-child reminiscing at one time-point during middle childhood, I believe the co-constructed narratives elicited for the current study reflect the habitual conversational patterns between these mothers and their children when talking about any past experience. Indeed, research has shown that maternal reminiscing style is relatively stable over time. For instance, highly elaborative mothers continue to be highly elaborative when talking to their children at older ages (Haden, Ornstein, Rudek, & Cameron, 2009; Reese et al., 1993). In sum, my data reflect girls' internalization that emotions arise largely *from* interactions with others and are also *resolved* through interactions with others. With mother-daughter dyads tending to talk about their jealousy experience at greater length than

mother-son dyads, I suggest that girls are acquiring more information as to who they are as an emotional person through their mother-child exchanges than are boys.

Finally, given that the current study is the first investigation of parent-guided reminiscing about a *jealousy* experience, I believe it is worth noting the content of maternal speech in the present study in relation to research on maternal socialization of emotional self-concept. When mothers talk to their child about the past, they inform their child's maturing emotional self-concept in three interconnected ways: (1) self-in-relation (i.e., *this is how I convey my feelings to others*), (2) self-definition (i.e., *this is the kind of emotional person I am*), and (3) self-management (i.e., *this is how I resolve negative emotions*; Fivush et al., 2003). In the first study to examine whether maternal reminiscing varies according to the type of negative emotion being discussed, Fivush and her collaborators found that conversations between mothers and their 4-year-old children about experiences of fear, anger, and sadness were related to different aspects of developing emotional self-concept (2003). For instance, conversations about fear were found to focus on coping or emotional self-management (i.e., comprised elaboration of facts and resolutions about the event), conversations about anger focused on the self-definition aspect of emotional self-concept (i.e., included a large amount of talk about the emotional state itself), and discourse about sadness experiences were directed towards self-in-relation and emotional self-management (i.e., comprised of evaluative feedback and resolutions about the event). These findings led the authors to suggest that through their conversations with their mothers, "children are developing culturally appropriate emotional self-concepts about the experience and expression of specific emotions" (Fivush et al., 2003, p. 190).

Through examination of the content of maternal speech during the co-constructed narrative, the findings from the current study provide a much-needed glimpse into the messages

children are receiving about the appropriateness of expression of feelings surrounding interpersonal rivalry. In particular, I found comparable patterns of maternal speech to children concerning jealousy and the maternal speech to younger children about fear reported by Fivush et al. (2003). For instance, mothers in the current study elaborated on facts of the event and coping strategies or resolutions to their child's jealousy experience as did the mothers with their 4-year-olds about fear. Fivush suggests that by focusing on the *factual* details of the event rather than the emotional state itself, mothers are conveying to their children that the feelings surrounding jealousy are unnecessary feelings to have. Furthermore, by talking about facts and resolutions instead of including a large amount of evaluative feedback or talk about the emotional state itself, mothers are emphasizing the self-management component of their child's developing emotional self-concept (i.e., *this is what I can do when I feel jealous*), rather than self-in- relation (i.e., *this is how I let others know I feel jealous*) or self-definition (i.e., *I am a jealous person*).

The idea that children may be socialized to cope with jealousy feelings, but not to self-identify or talk about those feelings with others, is supported through changes in how jealousy has been viewed in Western culture. From a historical perspective, jealousy has not always held a negative connotation. For instance, in the Middle Ages jealousy was often seen as an emotional impetus for honorable behavior (Stearns, 2010). However, since the 1930's, American culture has increasingly characterized jealousy as an undesirable, unattractive emotion that individuals should strive not to experience or express. Early research suggested that jealousy is commonly associated with childishness, with the social-acceptability of this emotion decreasing as one becomes older (Gesell, 1956; as cited in Stearns, 2010). More recent research has found that Americans believe, more so than other cultures, that feelings of jealousy should be suppressed

(Stearns, 2010). As such, I suggest that our current cultural standards of jealousy expression do not correspond to the frequency with which jealousy is experienced in relationships. Moreover, provided the emergent literature suggesting that jealousy is often associated with episodes of bullying aggression (Delgado, 2012; Turkel, 2007), further research investigating children's perceptions of jealousy and parental and peer socialization concerning how to express –and cope with– the negative feelings resulting from interpersonal rivalry is highly warranted.

Limitations and Directions for Future Research

The current study addressed the need for investigations of mother-child reminiscing with older, non-White children from diverse socio-economic backgrounds, put forth by Robyn Fivush (Fivush et al., 2006). Overall, I had a substantially diverse sample in terms of ethnicity and socio-economic status (SES; e.g., maternal education) in comparison to the majority of studies that have used White, middle-class Western mothers with preschoolers. Despite the relative diversity of my sample, however, I was unable to compare group differences based on ethnicity or SES due to unequal sizes of the various groups. In order to bridge multiple gaps in the literature, it is essential for future studies to continue to examine not only children's *complex* emotion understanding during middle childhood, but to also explore whether the maternal and child speech patterns found in the current study remain stable across different cultures and different economic backgrounds.

In addition, the present study was unique in part due to its investigation of maternal-guided reminiscing during middle childhood. I acknowledge however, that by only examining maternal speech, portions of the socialization process in regards to children's emotion expression and comprehension remain unaddressed. Of particular interest, is the role of fathers in parent-

child conversations. Some studies have found that paternal speech during early childhood displays similar gendered patterns as reported in the literature regarding maternal speech. For instance, fathers of daughters were found to talk more about emotion than fathers of sons when discussing their 3-year-old's previous experience of sadness (Fivush et al., 2000). Some studies with older children, however, have provided evidence that parental socialization of emotion may go against conventional gender-stereotypes. For example, in investigating gendered patterns in emotion talk between mothers and fathers with their early adolescents (i.e., 12.5 year-olds), we found that boys were more likely to talk about sadness with their fathers than were girls, and when talking to their fathers, girls were significantly more likely to introduce anger to the conversation than were boys (Aldrich & Tenenbaum, 2006). Given the lack of research on parent-child emotional discourse during middle childhood and the disparate findings from preschool and adolescence concerning father-child exchanges, future research should inquire as to what fathers are bringing to the conversation during middle childhood. Furthermore, I suggest that future research should specifically explore whether paternal reminiscing functions in the same manner as maternal reminiscing in regards to children's development of emotional self-concepts.

Conclusions

The findings of the current study have increased our knowledge of the particular roles of perspective taking, gender, and maternal reminiscing in children's understanding of jealousy during middle childhood. In summary, I found that between the ages of 5 and 11, older children exhibited an increased understanding of jealousy across multiple measures of emotion understanding relative to their younger peers. My findings also confirmed results from empirical work with adults, suggesting that children during middle childhood also often fail to distinguish

between feelings of jealousy and envy. In addition, I provided evidence that during middle childhood perspective taking is distinctly linked to children's abilities to determine, and talk about, another person's jealousy arising from interpersonal rivalry. This is noteworthy in that (1) it is the first study to document relationships between children's emotion understanding and perspective-taking ability using an independent assessment of perspective-taking skill during middle childhood, and (2) it is the first study to assess children's understanding of jealousy (a *complex* emotion) within a variety of narrative contexts.

Through the use of fictional narratives, individual personal narratives, and co-constructed autobiographical narratives, I was able to examine gender differences and explore the maternal socialization process of jealousy discourse. While the present study's findings bridge a gap in the literature concerning how children talk about complex emotions during middle childhood, overall my data corroborate the gender differences found in children's speech within the preschool literature. Girls and boys did not significantly differ in terms of their socio-cognitive development, intellectual development, or in any of the fictional narrative measures of emotion understanding. Girls did, however, convey higher quality personal narratives of jealousy, including more explanations for their emotional experience than did boys. Furthermore, when talking with their mothers, mothers and daughters had a tendency to talk at greater length about the jealousy experience than mothers and sons. Taken together, I believe my findings support the notion that girls' acquisition of emotion understanding is directly tied to interpersonal relationships.

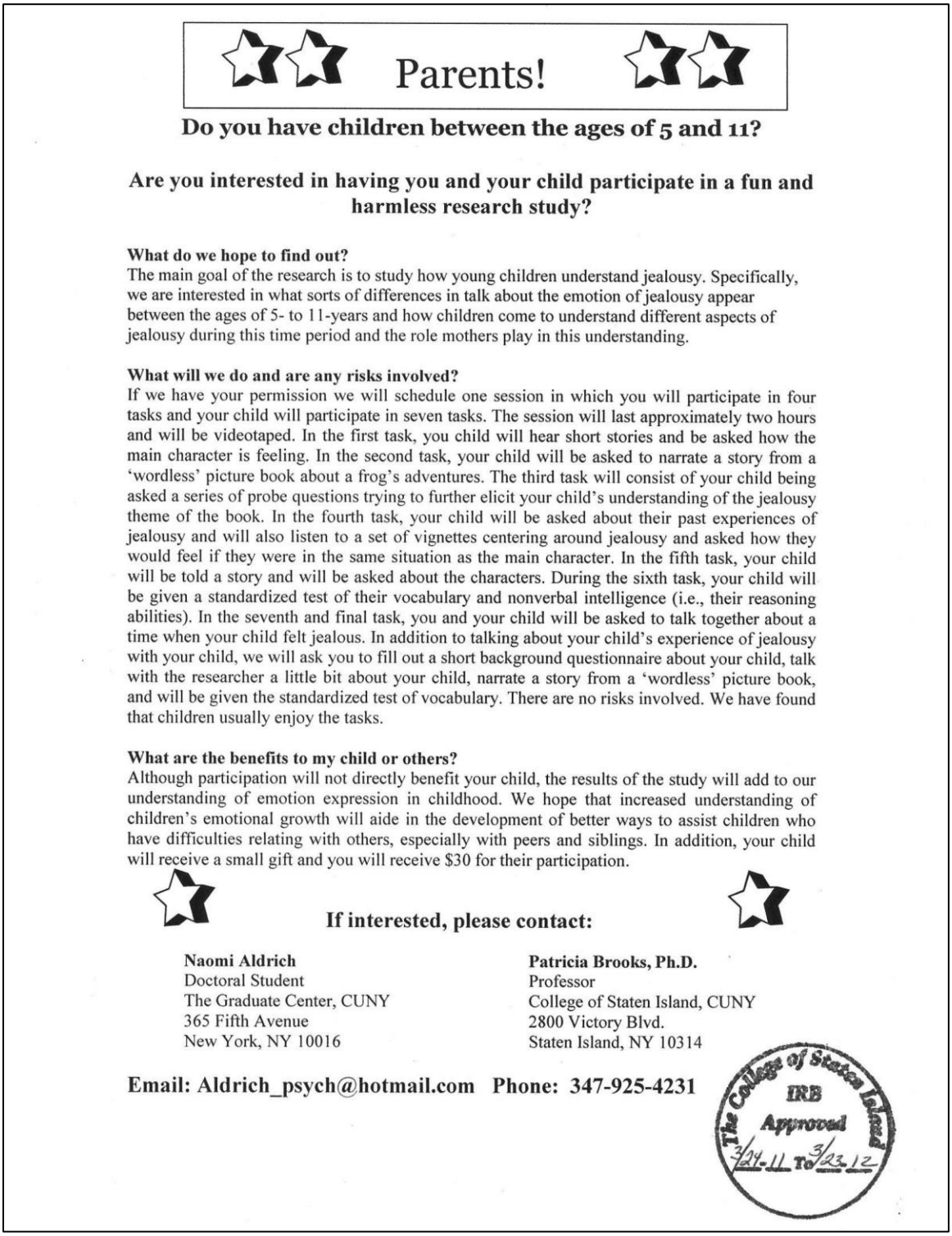
Additionally, my study extends the literature on maternal-guided reminiscing by examining the roles of both style and content, and by including an examination of both parties'

contributions to the conversation. In doing so, I documented that maternal elaboration is beneficial for children's autobiographical narrative abilities during middle childhood.

In conclusion, the present study combines research methodology from many different areas of narrative inquiry to bring together a more coherent account of children's comprehension of jealousy during middle childhood. This study has provided a foundation for future research efforts investigating children's comprehension of complex emotions during middle childhood by emphasizing the need to take into account children's perspective-taking abilities. In addition, the current study illuminates some of the socialization practices behind children's explicit expression of jealousy, or lack thereof. Hopefully in the future, research such as this, may be used to inform as to how the internal feelings of interpersonal rivalry become outwardly expressed as aggressive actions towards another.

Appendix A

Recruitment Flyer



Parents!

Do you have children between the ages of 5 and 11?

Are you interested in having you and your child participate in a fun and harmless research study?

What do we hope to find out?
The main goal of the research is to study how young children understand jealousy. Specifically, we are interested in what sorts of differences in talk about the emotion of jealousy appear between the ages of 5- to 11-years and how children come to understand different aspects of jealousy during this time period and the role mothers play in this understanding.

What will we do and are any risks involved?
If we have your permission we will schedule one session in which you will participate in four tasks and your child will participate in seven tasks. The session will last approximately two hours and will be videotaped. In the first task, you child will hear short stories and be asked how the main character is feeling. In the second task, your child will be asked to narrate a story from a 'wordless' picture book about a frog's adventures. The third task will consist of your child being asked a series of probe questions trying to further elicit your child's understanding of the jealousy theme of the book. In the fourth task, your child will be asked about their past experiences of jealousy and will also listen to a set of vignettes centering around jealousy and asked how they would feel if they were in the same situation as the main character. In the fifth task, your child will be told a story and will be asked about the characters. During the sixth task, your child will be given a standardized test of their vocabulary and nonverbal intelligence (i.e., their reasoning abilities). In the seventh and final task, you and your child will be asked to talk together about a time when your child felt jealous. In addition to talking about your child's experience of jealousy with your child, we will ask you to fill out a short background questionnaire about your child, talk with the researcher a little bit about your child, narrate a story from a 'wordless' picture book, and will be given the standardized test of vocabulary. There are no risks involved. We have found that children usually enjoy the tasks.

What are the benefits to my child or others?
Although participation will not directly benefit your child, the results of the study will add to our understanding of emotion expression in childhood. We hope that increased understanding of children's emotional growth will aide in the development of better ways to assist children who have difficulties relating with others, especially with peers and siblings. In addition, your child will receive a small gift and you will receive $30 for their participation.

If interested, please contact:

Naomi Aldrich
Doctoral Student
The Graduate Center, CUNY
365 Fifth Avenue
New York, NY 10016

Patricia Brooks, Ph.D.
Professor
College of Staten Island, CUNY
2800 Victory Blvd.
Staten Island, NY 10314

Email: Aldrich_psych@hotmail.com Phone: 347-925-4231

The College of Staten Island IRB Approved 3/24-11 To 3/23-12

Appendix B

Informed Consent (Page 1 of 2)

COLLEGE OF STATEN ISLAND
The City University of New York
www.csi.cuny.edu

Department of Psychology

Consent Form

Dear Parents,
We would like to ask you for permission to include your son/daughter in a project that is being conducted by Naomi Aldrich and Patricia Brooks of the College of Staten Island, CUNY. The project is called "Children's Socio-Cognitive Understanding of Jealousy". Here are some answers to questions you might have. We hope they will help you to understand the project's aims and objectives.

What do we hope to find out?
The main goal of the research is to study how young children understand jealousy. Specifically, we are interested in what sorts of differences in talk about the emotion of jealousy appear between the ages of 5- to 11-years and how children come to understand different aspects of jealousy during this time period and the role mothers play in this development.

What will my child do and are any risks involved?
If we have your permission we will schedule one session in which you will participate in four tasks and your child will participate in seven tasks. The session will last approximately two hours and will be videotaped. In the first task, you child will hear short stories and be asked how the main character is feeling. In the second task, your child will be asked to narrate a story from a 'wordless' picture book about a frog's adventures. The third task will consist of your child being asked a series of probe questions trying to further elicit your child's understanding of the jealousy theme of the book. In the fourth task, your child will be asked about their past experiences of jealousy and will also listen to a set of vignettes centering around jealousy and asked how they would feel if they were in the same situation as the main character. In the fifth task, your child will be told a story and will be asked about the characters. During the sixth task, your child will be given a standardized test of their vocabulary and nonverbal intelligence (i.e., their reasoning abilities). In the seventh and final task, you and your child will be asked to talk together about a time when your child felt jealous. In addition to talking about your child's experience of jealousy with your child, we will ask you to fill out a short background questionnaire about your child, talk with the researcher a little bit about your child, narrate a story from a 'wordless' picture book, and will be given the standardized test of vocabulary. There are no risks involved. We have found that children usually enjoy the tasks.

What are the benefits to my child or others?
Although participation will not directly benefit your child, the results of the study will add to our understanding of emotion expression in childhood. We hope that increased understanding of children's emotional growth will aide in the development of better ways to assist children who have difficulties relating with others, especially with peers and siblings.

Is it possible for my child to not participate, if he/she does not want to participate or changes his/her mind about participating?
Yes, children are free to withdraw their participation at any time for any reason. You may also withdraw your child at any time for any reason.

Will any information about my child be recorded or published?
Confidentiality will be assured. Only your child's age, native language, and performance will be recorded. Additionally, I will videotape you and your child during the tasks so I can record the details accurately. All videos will be locked in the lab and all data will be stored on a password protected computer. We will keep the videotapes securely stored for at least 6 years after the data are published. No other information will be recorded or published (including your name, address, etc.) or in any way be linked with you or your child's answers.

Will I obtain a summary of the results?
If you wish, we'll be happy to share our findings with you by sending you a letter summarizing the results of the study when it is completed. Your child will get a small gift and $30 for their participation in the project.

Appendix B continued

Informed Consent (Page 2 of 2)

COLLEGE OF STATEN ISLAND
The City University of New York
www.csi.cuny.edu

Department of Psychology

If you have any questions about this study, please contact Dr. Patricia Brooks at 718-982-3793 or patricia.brooks@csi.cuny.edu. If you have any questions about participation in College of Staten Island research projects, please contact the CSI Institutional Review Board at 718-982-3867 (angela.cartmell@csi.cuny.edu). If you would like your child to participate, please sign the attached consent form (page 2). Please keep the first page for your records.

_____ I **consent** to my child's participation in the project "Children's Socio-Cognitive Understanding of Jealousy"

_____ I **do not consent** to my child's participation in the project "Children's Socio-Cognitive Understanding of Jealousy"

We regularly speak these languages in our home _____

This is the primary language that my child speaks _____

_____ I **agree** to participate in the project "Children's Socio-Cognitive Understanding of Jealousy"

_____ I **do not agree** to participate in the project "Children's Socio-Cognitive Understanding of Jealousy"

_____ Mother's/Father's Name

_____ Your child's name

_____ Signature of Parent

_____ Your child's birth date

_____ Date

_____ I would like to be contacted if there are other similar studies in the future in which my child may be eligible to participate.

_____ Telephone

_____

_____ Address

Appendix C

Child Assent

COLLEGE OF STATEN ISLAND
The City University of New York
www.csi.cuny.edu

Department of Psychology

Child Assent Script

Hello, _____, my name is _____ (researcher). How are you doing today? I would like your help in a study about feelings I am doing at school. We're going to play a couple of games today and talk about some stories and I think that you and I might have some fun. After that you and your mom are going to talk a little bit. We will take breaks between the games so you can use the bathroom or get something to drink if you want. While we're talking I'm going to have this camera record us because it will help me remember what you say. After we're done you can pick a book, t-shirt, or magnet to take home with you if you would like.

If you feel funny and don't want to talk to me anymore, you just let me know and we can stop at any time. You won't get in any trouble, and no one will be mad at you. Okay?

Do you have any questions about what we'll be doing today?

Would you like to help me today?

Child's Indicated Response (circle): YES NO

_____ Date: _____
Signature of Researcher

_____ Date: _____
Signature of Witness

The College of Staten Island
IRB
Approved
3/24/11 To 3/23/12

2800 Victory Boulevard • Building 4S, Room 108 • Staten Island, New York 10314

Appendix D

Maternal Background Questionnaire

Mother Background Questionnaire

Date: _____

Your Name: _____

Your level of education: _____

Your Child's Name: _____

Your Child's Birthdate: _____

Was your child born prematurely or had any other complications at birth? If so, please explain below:

_____

_____

_____

What languages are spoken in your home? Please list below:

_____

_____

_____

Thank You!

Appendix E

Episodic Structure of *One Frog Too Many*

Picture no.	Episode
1	Prelude: setting and discovery of the problem
2	(The big frog becomes jealous after the boy receives a new frog)
3	
4	Episode 1: consequence of problem
5	(The big frog bites the new frog upon introduction)
6	
7	
8	Episode 2: consequence of problem
9	(The big frog kicks the new frog during play and is punished)
10	
11	
12	Episode 3: consequence of problem
13	(After being punished, the big frog sneaks back to the group and
14	continues to express disapproval of the new frog)
15	
16	Episode 4: consequence of problem
17	(The big frog further bullies the new frog, resulting in the loss of the new
18	frog)
19	
20	
21	
22	Episode 5: effects of the protagonist's actions
23	(The supporting characters exhibit various emotions due to the loss of the
24	new frog)
25	
26	Completion: solution to the problem
27	(The new frog returns and the two frogs become friends)
28	

Appendix F

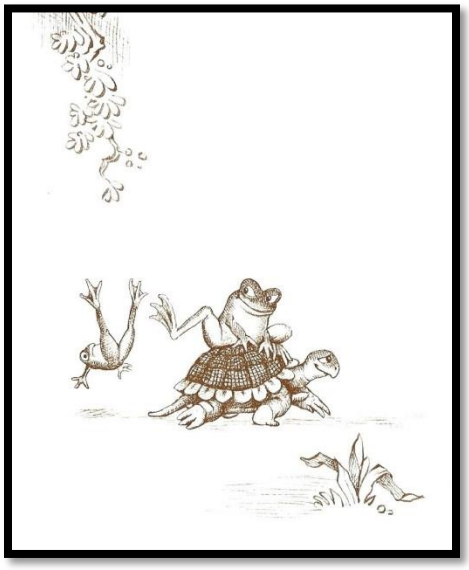
Examples from *One Frog Too Many* (Mayer & Mayer, 1975)

Page 2

(from Prelude)

Page 3

(from Prelude)



Page 10

(from Episode 2)

Page 11

(from Episode 2)

Appendix G

Sample Pictures from the Video-taped Perspective-Taking Ability Assessment

Appendix H

Perspective-Taking Ability Assessment Questions

(Adapted from Selman & Byrne, 1974)

Level 1 – Subjective Perspective Taking

Does Ben know how Abigale feels about the kitten?
How come?

Does Abigale know why Ben cannot decide whether or not to climb the tree?
How come?

If Ben doesn't tell her about the promise, what's a reason that Abigale could think that Ben's not going to climb the tree?
How come?

Level 2 – Self-Reflective Perspective Taking

What does Ben think his dad will think of him if he finds out?

Does Ben think his dad will understand why he climbed the tree if he climbs it?
How come?

Level 3 – Mutual Perspective Taking

What does Ben think most people would do in this situation?

If Ben and his dad talk about it, what could they decide together?
How come?

Appendix I

Narrative Coherence Measure (Page 1 of 2)

1

Child _____

Combined Narrative Measure – One Frog Too Many

Story Structure Features	**1 = present 0 = absent**		
Abstract Inclusion of a Title for their story			
Introduction Conventional opening • EX: one day, once upon a time, once			
Orientation Setting the stage for the narrative by introducing the characters, setting, and time • Characters: There was a little boy • Setting: He was in his room • Time: *One winter's* day (formal introduction of characters and setting is usually marked structurally by the use of "*there was…*" "*it was…*" or "*one day there was…*"	**Char**	**Sett**	**Time**
Character Delineation Specific identification of characters • EX: the littlest frog, the baby frog, the mama frog			
Coda Conventional story closing • EX: the end, *that's it*, happily ever after			
Conjoined noun/verb or adverbial phrases • Verb: The frog jumped through the window and fell on the big frog • Noun: They saw a little frog and a big frog • Adverbial: He climbed the tree slowly and carefully			
	Score		
Connectives • No connectives (score 0) • And, so, then, and so, and then (score 1) • More sophisticated connectives other than those already credited as causal markers (because, so that), EX: but, only, after, before, when, finally (score 2)			
First mention of story characters – code whichever is introduced first • No first mention, "looking at present" (score 0) • Unspecified pronouns, "he, they, one was looking at a present" (score 1) • Presupposed reference using definite article + noun, "the pets, the boy" (score 2) • Non-presupposing introduction using indefinite article + noun or number = noun, "a dog, some animals, three pets" (score 3)			
Total Story Structure Features:			

Appendix I continued

Narrative Coherence Measure (Page 2 of 2)

2

Story Events	1 = present 0 = absent
Boy receives a new frog	
Big frog bites little frog	
Big frog kicks little frog off of turtle's back	
Big frog kicks little frog off of the boat	
Everyone searches for the missing frog	
Everyone goes home upset	
Little frog returns	
The big frog learns to be nice to the little frog when he comes back (problem resolution)	
Total Story Events:	

Total Combined Narrative Measure: _____

Appendix J

Thematic Understanding of Jealousy Measure

1

Child _____

One Frog Too Many – Thematic Understanding of Jealousy

Explicit Mention of Jealousy – 5 points	
If **no** explicit mention of jealousy, score according to: **Basic Emotions Identified**- 1 point for each type mentioned (up to 5 points) • EX: anger, sadness, fear, disgust, contempt	
Behavioral Reaction Indicative of Jealousy – 1 point • EX: the big frog went off by himself in the forest	
Mention of a Mental State or Cognition Relative to the Big Frog's Jealousy – 1 point • EX: the big frog thought that the boy would no longer love him	
Reference to the New Frog's Interference in Big Frog's Relationship with boy/family – 1 point • EX: the baby frog was taking all the boy's attention from the big frog	
Total Thematic Understanding Score (out of 9 possible points):	

Appendix K

Reminiscing Style and Content Coding Sample

(Co-Constructed Narrative between a Mother and her 5-year-old Daughter)

S: Reminiscing Style, C: Reminiscing Content

Mother: One time, uh do you remember? **[Prompt]**

Mother: It was actually yesterday. **[S = Elab, C = Fact]**

Mother: Do you remember when yesterday? **[Prompt]**

Mother: I was sitting on Dada's [grandfather's] lap? **[S = Elab, C = Fact]**

Child: Yeah. **[Yes/No Response]**

Mother: And what happened? **[Prompt]**

Mother: When you came down stairs? **[S = Elab, C = Fact]**

Child: I was sad. **[S = Elab, C = Emot]**

Mother: Why? **[S = Eval, C = Emot]**

Child: Because you sat on his lap. **[S = Rep, C = Fact]**

Mother: Why were you sad? **[S = Eval, C = Emot]**

Mother: Because he's all yours, right? **[S = Elab, C = Fact]**

Child: Yeah. **[Yes/No Response]**

Mother: He's not mine anymore? **[S = Elab, C = Fact]**

Child: Uh huh. **[Yes/No Response]**

Child: He's mine. **[S = Rep, C = Fact]**

Mother: So that's, that was one time when you were jealous. **[S = Elab, C = Emot]**

References

Adams, S., Kuebli, J., Boyle, P., & Fivush, R. (1995). Gender differences in parent-child conversations about past emotions: A longitudinal investigation. *Sex Roles, 33* (5/6), 309-323. doi: 10.1007/BF01954572

Aldrich, N.J., & Tenenbaum, H.R. (2006). Sadness, anger, and frustration: Gendered patterns in early adolescents' and their parents' emotion talk. *Sex Roles, 55,* 775-785. doi: 10.1007/s11199-006-9131-y

Aldrich, N.J., Tenenbaum, H.R., Brooks, P.J., Harrison, K., & Sines, J. (2011). Perspective taking in children's narratives about jealousy. *British Journal of Developmental Psychology, 29* (1), 86-109. doi: 10.1348/026151010X533238

Bamberg, M., & Damrad-Frye, R. (1991). On the ability to provide evaluative comments: Further explorations of children's narrative competencies. *Journal of Child Language, 18*, 689-710. doi:10.1017/S0305000900011314

Bamberg, M., & Reilly, J.S. (1996). Emotion, narrative, and affect. In D.I. Slobin, J. Gerhardt, A. Kyratzis, & J. Guo (Eds.), *Social interaction, social context and language: Essays in honor of Susan Ervin-Tripp* (pp. 329–341). Norwood, NJ: Erlbaum.

Bauminger, N., Chomsky-Smolkin, L., Orbach-Caspi, E., Zachor, D., & Levy-Shiff, R. (2008). Jealousy and emotional responsiveness in young children with ASD. *Cognition and Emotion, 22* (4), 595-619. doi: 10.1080/02699930701439986

Ben-Ze'ev, A. (2010). Jealousy and romantic love. In S.L. Hart & M. Legerstee (Eds.), *Handbook of jealousy: Theory, research, and multidisciplinary approaches* (pp. 40-54). Malden, MA: Wiley-Blackwell.

Berman, R.A., & Slobin, D.I. (1994). *Relating events in narrative: A crosslinguistic developmental study.* Hillsdale, NJ: Erlbaum.

Bosacki, S.L., & Moore, C. (2004). Preschoolers' understanding of simple and complex emotions: Links with gender and language. *Sex Roles, 50* (9/10), 659-675. doi: 10.1023/B:SERS.0000027568.26966.27

Bourg, T., & Stephenson, S. (1997). Comprehending characters' emotions: The role of event categories and causal connectivity. In P.W. van den Broek, P.J. Bauer, & T. Bourg (Eds.), *Developmental spans in event comprehension and representation: Bridging fictional and actual events* (pp. 295–319). Mahwah, NJ: Erlbaum.

Brody, L.R. (1985). Gender differences in emotional development: A review of theories and research. *Journal of Personality, 53* (2), 102-149. doi: 10.1111/j.1467-6494.1985.tb00361.x

Bruner, J. (1987). Life as narrative. *Social Research, 54* (1), 11-32.

Buckner, J.P., & Fivush, R. (1998). Gender and self in children's autobiographical narratives. *Applied Cognitive Psychology, 12* (4), 407-429. doi: 10.1002/(SICI)1099-0720(199808)12:4<407::AID-ACP575>3.0.CO;2-7

Cervantes, C., & Callanan, M.A. (1998). Labels and explanations in mother–child emotion talk: Age and gender differentiation. *Developmental Psychology, 34*, 88-98. doi:10.1037/0012-1649.34.1.88

Cohen, J., & Cohen, P., Aiken, L.S., & West, S.G. (2002). *Applied multiple regression: Correlation analysis for the behavioral sciences* (3rd ed.). Mahwah, NJ: Erlbaum.

Cutting, A.L., & Dunn, J. (1999). Theory of mind, emotion understanding, language, and family background: Individual differences and interrelations. *Child Development, 70* (4), 853-865. doi: 10.1111/1467-8624.00061

Daiute, C. (2011). Trouble – In, around, and between narratives. *Narrative Inquiry, 21* (2), 329-336. doi: 10.1075/ni.21.2.11dai

Daiute, C. (2013). Dynamic narrating. In *Narrative inquiry: A dynamic approach* (pp. 1-40). Thousand Oaks, CA: Sage.

Daiute, C., & Nelson, K. (1997). Making sense of the sense-making function of narrative evaluation. *Journal of Narrative and Life History, 7* (1-4), 207-215.

Delgado, I.R. (2012). Bridging the gap: Relational aggression in the college environment. *Dissertation Abstracts International Section A: Humanities and Social Sciences, 72* (12-A), 4416.

Denham, S.A. (1998). *Emotional development in young children.* New York, NY: Guilford Press.

de Rosnay, M., & Hughes, C. (2006). Conversation and theory-of-mind: Do children talk their way to socio-cognitive understanding? *British Journal of Developmental Psychology, 24* (1), 7-37. doi: 10.1348/026151005X82901

Dubreuil, J., & McNiff, E. (2010, October 15). School bullying is epidemic and turning deadly: Bullied to death in America's schools. *20/20* [television broadcast]. New York, NY: American Broadcasting Company. Retrieved from http://www.abcnews.go.com/2020

Dunn, J., Bretherton, I., & Munn, P. (1987). Conversations about feeling states between mothers and their young children. *Developmental Psychology, 23* (1), 132-139. doi: 10.1037/0012-1649.23.1.132

Ekman, P. (1992). An argument for basic emotions. *Cognition and Emotion, 6* (3/4), 169-200. doi: 10.1080/02699939208411068

Erikson, E. (1950). *Childhood and society.* New York, NY: Norton.

Fivush, R. (1989). Exploring sex differences in the emotional content of mother-child conversations about the past. *Sex Roles, 20* (11/12), 675-691. doi: 10.1007/BF00288079

Fivush, R. (2001). Owning experience: The development of subjective perspective in autobiographical memory. In C. Moore & K. Lemmon (Eds.), *The self in time: Developmental perspectives* (pp. 35-52). Hillsdale, NJ: Lawrence Erlbaum.

Fivush, R., Berlin, L.J., McDermott Sales, J., Mennuti-Washburn, J., & Cassidy, J. (2003). Functions of parent-child reminiscing about emotionally negative events. *Memory, 11* (2), 179-192. doi: 10.1080/09658210244000351

Fivush, R., Brotman, M.A., Buckner, J.P., & Goodman, S.H. (2000). Gender differences in parent-child emotion narratives. *Sex Roles, 42* (3/4), 233-253. doi: 10.1023/A:1007091207068

Fivush, R., & Buckner, J.P. (2000). Gender, sadness, and depression: Developmental and socio-cultural perspectives. In A.H. Fischer (Ed.), *Gender and emotion: Social psychological perspectives* (pp. 232-253). Cambridge, UK: Cambridge University Press.

Fivush, R., & Haden, C.A. (1997). Narrating and representing experience: Preschoolers' developing autobiographical accounts. In P.W. van den Broek, P.J. Bauer, & T. Bourg (Eds.), *Developmental spans in event comprehension and representation: Bridging fictional and actual events* (pp. 169-197). Mahwah, NJ: Erlbaum.

Fivush, R., Haden, C.A., & Reese, E. (2006). Elaborating on elaborations: Role of maternal reminiscing style in cognitive and socioemotional development. *Child Development, 77* (6), 1568-1588. doi: 10.1111/j.1467-8624.2006.00960.x

Fivush, R., & Nelson, K. (2004). Culture and language in the emergence of autobiographical memory. *Psychological Science, 15* (9), 573-577. doi: 10.1111/j.0956-7976.2004.00722.x

Flavell, J.H., Green, F.L., & Flavell, E.R. (1993). Children's understanding of the stream of consciousness. *Child Development, 64* (2), 387-398. doi: 10.2307/1131257

Gesell, A. (1956). *Youth: The years from ten to sixteen.* New York, NY: Harper Collins.

Haden, C.A., Haine, R.A., & Fivush, R. (1997). Developing narrative structure in parent–child reminiscing across the preschool years. *Developmental Psychology, 33* (2), 295–307. doi: 10.1037/0012-1649.33.2.295

Haden, C.A., Ornstein, P.A., Rudek, D.J., & Cameron, D. (2009). Reminiscing in the early years: Patterns of maternal elaborativeness and children's remembering. *International Journal of Behavioral Development, 33* (2), 118-130. doi: 10.1177/0165025408098038

Harley, K., & Reese, E. (1999). Origins of autobiographical memory. *Developmental Psychology, 35* (5), 1338-1348. doi: 10.1037/0012-1649.35.5.1338

Harris, P.L., Olthof, T., Terwogt, M.M., & Hardman, C.E. (1987). Children's knowledge of the situations that provoke emotion. *International Journal of Behavioral Development, 10* (3), 319-343.

Hart, S., & Carrington, H. (2002). Jealousy in 6-month-old infants. *Infancy, 3* (3), 395-402. doi: 10.1207/S15327078IN0303_6

Kleinknecht, E., & Beike, D.R. (2004). How knowing and doing inform an autobiography: Relations among preschoolers' theory of mind, narrative, and event memory skills. *Applied Cognitive Psychology, 18*, 745-764. doi:10.1002/acp.1030

Labov, W., & Waletzky, J. (1967). Narrative analysis. In J. Helm (Ed.), *Essays on the verbal and visual arts* (pp. 12–44). Seattle, WA: University of Washington Press.

Landis, J.R., & Koch, G.G. (1977). The measurement of observer agreement for categorical data. *Biometrics, 33* (1), 159–174. doi:10.2307/2529310

MacWhinney, B., & Snow, C. (1990). The child language data exchange system: An update. *Journal of Child Language, 17*, 457–472. doi:10.1017/S0305000900013866

Mayer, M. (1969). *Frog, where are you?* New York, NY: Dial Books.

Mayer, M., & Mayer, M. (1975). *One frog too many.* New York, NY: Dial Books.

Menard, S. (1995). *Applied logistic regression analysis: Sage university series on quantitative applications in the social sciences.* Thousand Oaks, CA: Sage.

Nelson, K. (1996). *Language in cognitive development.* Mahwah, NJ: Erlbaum.

Nelson, K., & Fivush, R. (2004). The emergence of autobiographical memory: A social cultural developmental theory. *Psychological Review, 111* (2), 486-511. doi: 10.1037/0033-295X.111.2.486

Neter, J., Wasserman, W., & Kutner, M.H. (1989). *Applied linear regression models.* Homewood, IL: Irwin.

Ogarkova, A. (2007). "*Green-Eyed Monsters*": A corpus-based study of metaphoric conceptualizations of jealousy and envy in modern English. *Metaphorik.de, 13*, 87-147.

O'Neill, D.K., & Shultis, R.M. (2007). The emergence of the ability to track a character's mental perspective in narrative. *Developmental Psychology, 43* (4), 1032–1037. doi: 10.1037/0012-1649.43.4.1032

Parker, J.G., Low, C.M., Walker, A.R., & Gamm, B.K. (2005). Friendship jealousy in young adolescents: Individual differences and links to sex, self-esteem, aggression, and social adjustment. *Developmental Psychology, 41* (1), 235-250. doi: 10.1037/0012-1649.41.1.235

Peterson, C., & McCabe, A. (1983). *Developmental psycholinguistics: Three ways of looking at a child's narrative.* New York, NY: Plenum Press.

Peterson, C.C., & Slaughter, V.P. (2006). Telling the story of theory of mind: Deaf and hearing children's narratives and mental state understanding. *British Journal of Developmental Psychology, 24*, 151–179. doi:10.1348/026151005X60022

Phoenix, J., & Honda, M. (2012, August 8). Our children face a bullying epidemic. *USA Today*. Retrieved from http://www.usatoday.com

Pons, F., & Harris, P. (2000). *Test of Emotion Comprehension – TEC.* Oxford, UK: Oxford University.

Pons, F., & Harris, P.L. (2005). Longitudinal change and longitudinal stability of individual differences in children's emotion understanding. *Cognition and Emotion, 19* (8), 1158-1174. doi: 10.1080/02699930500282108

Pons, F., Harris, P.L., & de Rosnay, M. (2004). Emotion comprehension between 3 and 11 years: Developmental periods and hierarchical organization. *European Journal of Developmental Psychology, 1*, 127–152. doi:10.1080/17405620344000022

Reese, E., & Fivush, R. (1993). Parental styles of talking about the past. *Developmental Psychology, 29* (3), 596-606. doi: 10.1037/0012-1649.29.3.596

Reese, E., Haden, C.A., & Fivush, R. (1993). Mother-child conversations about the past: Relationships of style and memory over time. *Cognitive Development, 8* (4), 403-430. doi: 10.1016/S0885-2014(05)80002-4

Reese, E., Haden, C.A., & Fivush, R. (1996). Mothers, fathers, daughters, sons: Gender differences in autobiographical reminiscing. *Research on Language and Social Interaction, 29* (1), 27-56. doi: 10.1207/s15327973rlsi2901_3

Reilly, J.S. (1992). How to tell a good story: The intersection of language and affect in children's narratives. *Journal of Narrative and Life History, 2* (4), 355–377.

Russell, J.A., & Paris, F.A. (1994). Do children acquire concepts for complex emotions abruptly? *International Journal of Behavioral Development, 17* (2), 349-365.

Saarni, C. (1999). *The development of emotional competence.* New York, NY: Guilford Press.

Salovey, P., & Rodin, J. (1984). Some antecedents and consequences of social-comparison jealousy. *Journal of Personality and Social Psychology, 47* (4), 780-792. doi: 10.1037/0022-3514.47.4.780

Salovey, P., & Rodin, J. (1986). The differentiation of social-comparison jealousy and romantic jealousy. *Journal of Personality and Social Psychology, 50* (6), 1100-1112. doi: 10.1037/0022-3514.50.6.1100

Selman, R.L. (1971). Taking another's perspective: Role-taking development in early childhood. *Child Development, 42* (6), 1721-1734. doi: 10.2307/1127580

Selman, R.L. (1980). *The growth of interpersonal understanding: Developmental and clinical analyses.* New York, NY: Academic Press.

Selman, R.L. (1981). The child as a friendship philosopher: A case study in the growth of interpersonal understanding. In S.R. Asher, & J.M. Gottman (Eds.), *The development of children's friendships* (pp. 242-272). Cambridge, MA: Cambridge University Press.

Selman, R.L., & Byrne, D.F. (1974). A structural-developmental analysis of levels of role taking in middle childhood. *Child Development, 45* (3), 803-806.

Shackelford, T.K., Voracek, M., Schmitt, D.P., Buss, D.M., Weekes-Shackelford, V.A., & Michalski, R.L. (2004). Romantic jealousy in early adulthood and in later life. *Human Nature, 15* (3), 283-300. doi: 10.1007/s12110-004-1010-z

Smith, R.H., Kim, S.H., & Parrott, W.G. (1988). Envy and jealousy: Semantic problems and experiential distinctions. *Personality and Social Psychology Bulletin, 14*, 401-409. doi: 10.1177/0146167288142017

Snow, C.E., Tabors, P., Nicholson, P., & Kurland, B. (1995). SHELL: Oral language and early literacy skills in kindergarten and first-grade children. *Journal of Research in Childhood Education, 10*, 37–48. doi:10.1080/02568549509594686

Stapley, J.C., & Haviland, J.M. (1989). Beyond depression: Gender differences in normal adolescents' emotional experiences. *Sex Roles, 20* (5/6), 295-308. doi: 10.1007/BF00287726

Stearns, P.N. (2010). Jealousy in western history: From past toward present. In S.L. Hart & M. Legerstee (Eds.), *Handbook of jealousy: Theory, research, and multidisciplinary approaches* (pp. 7-26). Malden, MA: Wiley-Blackwell.

Strömqvist, S., & Verhoeven, L. (2004). Typological and contextual perspectives on narrative development. In S. Strömqvist & L. Verhoeven (Eds.), *Relating events in narrative, volume 2: Typological and contextual perspectives* (pp. 3–14). Mahwah, NJ: Erlbaum.

Symons, D., Peterson, C., Slaughter, V., Doyle, E., & Roche, J. (2005). Theory of mind and mental state discourse during book reading and story-telling tasks. *British Journal of Developmental Psychology, 23*, 81–102. doi:10.1348/026151004X21080

Trabasso, T., & Stein, N.L. (1997). Narrating, representing, and remembering event sequences. In P.W. van den Broek, P.J. Bauer, & T. Bourg (Eds.), *Developmental spans in event comprehension and representation: Bridging fictional and actual events* (pp. 237-270). Mahwah, NJ: Erlbaum.

Turkel, A.R. (2007). Sugar and spice and puppy dogs' tails: The psychodynamics of bullying. *Journal of the American Academy of Psychoanalysis and Dynamic Psychiatry, 35* (2), 243-258. doi: 10.1521/jaap.2007.35.2.243

Uchikoshi, Y. (2005). Narrative development in bilingual kindergarteners: Can Arthur help? *Developmental Psychology, 41*, 464–478. doi:10.1037/0012-1649.41.3.464

Ukrainetz, T.A., Justice, L.M., Kaderavek, J.N., Eisenberg, S.L., Gillam, R.B., & Harm, H.M. (2005). The development of expressive elaboration in fictional narratives. *Journal of Speech, Language, and Hearing Research, 48,* 1363–1377. doi: 10.1044/1092-4388(2005/095)

Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological processes.* Cambridge, MA: Harvard University Press.

Wellman, H.M., Cross, D., & Watson, J. (2001). Meta-analysis of theory-of-mind development: The truth about false belief. *Child Development, 72* (3), 655-684. doi: 10.1111/1467-8624.00304

Willenberg, I., & Kang, J. (2001). *Bear story coding manual.* Unpublished manuscript, Harvard University.