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UNIVERSITY OF CALIFORNIA,  
IRVINE

Who Really Chopped Down the Cherry Tree?  
Accuracy Demands and Child Gender in Parent-Child Reminiscing

THESIS

submitted in partial satisfaction of the requirements  
for the degree of

MASTER OF ARTS

in Social Ecology

by

Emily Marie Slonecker

Thesis Committee:  
Assistant Professor J. Zoe Klemfuss, Chair  
Associate Professor Jessica Borelli  
Professor Jodi Quas

2018



## **DEDICATION**

“And here you are living, despite it all.” – Rupi Kaur

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## ABSTRACT OF THE THESIS

Who Really Chopped Down the Cherry Tree?

Accuracy Demands and Child Gender in Parent-Child Reminiscing

By

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Master of Arts in Social Ecology

University of California, Irvine, 2018

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Parents frequently talk to their children about past experiences. When parents perceive it is important for their child to provide a highly factual recount of a past event, they may use evaluations to encourage accuracy. Specifically, negative evaluations serve to negate the child's input ("No, that didn't happen") while positive evaluations are used to specifically affirm their input ("Yes, that's right") or more generally encourage conversation ("Uh-huh" or "Oh, I see"). However, some literature suggests that these more general encouraging evaluations may serve a different function relative to appraising, or positive and negative, evaluations. As such, the present research explored this relation in conjunction with conversation accuracy demand and child gender. Eighty-nine children ( $M_{age} = 54.93$  months) engaged in a brief, scripted play activity with a researcher. Afterwards, caregivers were instructed to discuss the event with their child, either in a factual way or an entertaining way. These conversations were coded on a variety of narrative characteristics, including how frequently caregivers used evaluations. Analyses revealed that parents used appraising and encouraging evaluations differently. In addition, an interaction between child gender and context condition was found for appraising

evaluations. Theoretical implications, as well as potential application and future directions, are discussed.

## INTRODUCTION

In the novel *The Hitchhiker's Guide to the Galaxy* by Douglas Adams, a supercomputer named Deep Thought is built and asked to answer the meaning of life. More specifically, the computer's creators ask him to answer "The Ultimate Question of Life, The Universe, and Everything". After deliberating for 7.5 million years, Deep Thought finally gives them an answer: the number forty-two. The creators are, understandably, quite underwhelmed by this meaningless answer. When they demand an explanation from Deep Thought, he explains that in order to get a meaningful answer, the creators must first ask a meaningful question. And no one, not even Deep Thought, can truly identify or explain what "The Ultimate Question of Life" is to begin with.

Although this anecdote stems from a fictional narrative, there are aspects that ring true. For centuries, humans have tried, and often failed, to identify and answer life's most fundamental questions— Why am I alive? What am I doing here? Who am I? As a species, we have come the closest, perhaps, to answering the latter of these questions. The majority of people, if given some time to think on it, could probably describe themselves to another person. Their description may not be particularly accurate or elaborative, but this understanding of self reflects an essential component of our life as a sentient being. As we age and change, our sense of self provides roots that anchor our experiences and perspectives. These roots, in turn, sprout into behaviors and actions above the surface, while continuously growing and mutating below.

This growth can be attributed, at least partially, to our ability to store and process memories. Humans possess a remarkable aptitude for memory functioning (Tulving, 2005). Our ability to remember what kind of pizza we like or the first time we fell in love makes us who we are; it shapes the way we interact with our every-changing environment, view our past and

future, and even make meaning of life. Humans display the first signs of memory while in utero (DeCasper & Spence, 1986). Once born, children quickly develop more sophisticated forms of memory, such as recognition and recall, and begin to display limited verbal recall of recent past experiences around 16 to 18 months after birth (Bauer, 2002, 2004, 2007; Bauer et al., 2004). As children develop linguistically, parents may start to engage in joint reminiscing with their child. In these conversations, parents will discuss shared past experiences, such as a trip to the park or what they ate for lunch the previous day. At first these conversations are, understandably, quite one-sided; the parent will do the majority of the narrating, frequently elaborating and expanding on any short phrases or words their child offers (Fivush, 2007, 2011; Fivush et al., 2017; Fivush & Nelson, 2004; Kuebli, Butler, & Fivush, 1995; Nelson & Fivush, 2004; Reese & Brown, 2000; Reese & Fivush, 1993; Reese, Haden, & Fivush, 1993).

For example, a young boy might point to a picture of a dog and say “mee-mah” to which his mother may reply, “Yes, that’s right! We visited grandma yesterday and saw her doggy. You loved the doggy, didn’t you?” In this example, the parent is taking what the child said and adding context and structure. This type of scaffolding not only promotes a parent-child dialogue, but also teaches children how to structure their verbal narratives during storytelling (Haden, Haine, & Fivush, 1997). Of course, not all parents will respond in the same way. Some parents may scaffold more or emphasize different components of a narrative. As a result, children are exposed to differing narrative structures and strategies, which in turn, lead to variability in autobiographical memory skills later in life (Bird & Reese, 2006; Farrant & Reese, 2000; Fivush, 2007, 2011; Fivush et al., 2017; Haden, 1998; Haden et al., 1997; Reese & Fivush, 1993; Reese et al., 1993).

There are a multitude of reasons why a parent may favor a certain narrative style relative to another. For instance, parents may regulate their conversations, including those about the past, based on the gender of their child (Alea & Bluck, 2003; Fivush, Bohanek, Zaman, & Grapin, 2012; Fivush, Brotman, Buckner, & Goodman, 2000; Gryzman & Hudson, 2013; Kuebli & Fivush, 1992; Kuebli et al., 1995; Leaper, Anderson, & Sanders, 1998; Tenenbaum & Leaper, 2003; Zaman & Fivush, 2011, 2013). Although research in this area can be complex and conflicting, multiple studies have found that child gender is associated with the content and construct of parent-child conversations. Depending on the gender of a child, a parent may, for instance, be more elaborative, quicker to correct, or more likely to display maternal narrative control (Fivush et al., 2000; Gryzman & Hudson, 2013; Katz, Assor, Kanat-Maymon, & Bereby-Meyer, 2006; Kuebli & Fivush, 1992; Leaper et al., 1998; Tenenbaum & Leaper, 1998; Zaman & Fivush, 2013). Vice versa, there are also pronounced gender differences in autobiographical memory capabilities between boys and girls, with some research suggesting that girls show an advantage and/or preference for autobiographical memory recall starting at a very young age (Bemis, Leichtman, & Pillemer, 2011; Gryzman & Hudson, 2013). These differences manifest in the specificity of narratives, with young girls frequently engaging in memory recall that is more complete, complex, elaborative, and specific, relative to young boys (Gryzman & Hudson, 2013).

Given that narrative specificity is associated with the perceived accuracy of recount, it stands to reason that child gender may also relate to the accuracy demand of a reminiscing conversation. The accuracy demand of a conversation reflects how important both members of the conversation dyad believe it is to provide highly accurate information. In some instances, such as when dyads are talking to entertain, it may not necessarily be important to gather highly

accurate information or recount an event in a detailed and complete manner. For instance, a young girl who recently started school may wish to reminisce with her dad about an activity she completed earlier in the day. If they are talking just to emotional bond or entertain, then the girl can provide a general overview of what happened without her father necessarily feeling a pressure to extract accurate or specific details about the event.

However, other situations might provoke the perception of a higher accuracy demand. For instance, a parent may need to ask their child about an alleged transgression or crime he or she witnessed. In this type of conversation, both the parent and child may believe it is especially important to focus on providing the most accurate story possible. As a result, the parent may make a substantial effort to elicit detailed and precise information about the event in question.

Parents can use a variety of narrative techniques to elicit or convey signals about accuracy when discussing an event with their child. Specifically, parents may use evaluative feedback, or comments that confirm or negate child input, to encourage accuracy (Cleveland & Reese, 2005; Cleveland, Reese, & Grolnick, 2007; Reese & Brown, 2000; Reese & Fivush, 1993; Reese et al., 1993). Generally within the literature, evaluations are divided into positive and negative evaluations. Negative evaluations include comments that correct or negate (“No, that’s not what happened”), while positive evaluations include comments that both affirm (“Yes, that’s right!”) and generally encourage (“Oh really?”). However, there is a growing body of research to suggest that these general encouragements are quite unique compared to comments that correct or affirm.

These general encouragers, also known as facilitators, back-channel utterances, or response tokens, convey that the listener is interested in and listening to the speaker’s narrative (Gardner, 2001; Lambertz, 2011; McCarthy, 2003). However, unlike affirmations or corrections,

they do not necessarily signal anything about the accuracy of the conversation. Instead, these utterances, which we have labeled neutral evaluations, seem to serve the more general function of encouraging engagement. This distinction is noteworthy, especially when considering the accuracy demand of a conversation. While negating and affirming evaluations seem to actually appraise what is being said and thus make some judgment on accuracy, neutral evaluations do little to signal one way or the other about the importance of accuracy. As a result, neutral evaluations may be utilized quite differently relative to affirming and negating evaluations when discussing the past. Yet, the distinction between neutral evaluations and affirming/negating evaluations is frequently overlooked in the literature, with many conflating the two.

Thus, the present study aimed to examine reminiscing conversations from a perspective that acknowledged the nuanced nature of evaluative feedback. Caregiver-child dyad conversations about an unshared event were examined. Parent feedback was considered, with an emphasis on differentiating the function of appraising evaluations (affirming and negating) and engaging evaluations (neutral). Evaluations were examined specifically within the context of child gender, given its well established, yet frequently underreported, relation with autobiographical memory (Grysmann & Hudson, 2013), as well as conversation accuracy demand.



## CHAPTER ONE: LITERATURE REVIEW

### Key Terms

Memory is a complex and intricate system with many unknowns and little consensus (see Baddeley, 1997). As such, it is important to specify how this manuscript will define certain key terms. The term *episodic memory* will refer to memory for a specific event or experience, including the what, when, and where of the event. In contrast, the term *autobiographical memory (AM)* will refer specifically to the understanding of such memories within the context of the self. In other words, autobiographical memories involve an expansion beyond the simple facts of an experience and require a person to view himself or herself as the experiencer of the event (for a detailed argument of this perspective, see Fivush, 2011). The term *gender* will be used to refer exclusively to self- or parent-reported biological sex, as this is how the term is often defined in the literature.<sup>1</sup> The term *joint reminiscing* will refer to the discussion of an event experienced by both members of the conversation dyad; *disjointed reminiscing* will refer to the discussion of an unshared event. Finally, the term *evaluations* will refer to a parent's verbal assessment of what their child has recently said in a conversation. In this paper, evaluations are a narrative tool used by parents during conversations to confirm, negate, or question the child. For example, a parent may agree with what the child has said (e.g., "Mhm. That is what happened") or contradict them (e.g., "No, it didn't happen like that"). This type of evaluation should not be confused with another type of parent evaluation, sometimes referred to as "emotion evaluations" (Bird & Reese, 2006; Peterson & Biggs, 2001; Reese, Bird, & Tripp, 2007). Emotion evaluations are comments that reflect and expand on a child's emotional state (e.g., "You felt sad"), and are unrelated to the focus of the present study.

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<sup>1</sup> See the discussion of limitations and future directions in Chapter 5 for more comments on this terminology.

## **Memory and Reminiscing**

When people recall specific events and view them through the lens of the self, they are accessing the autobiographical memory system (Alea & Bluck, 2003; Alea & Wang, 2015; Bird & Reese, 2006; Bluck, 2003; Bluck & Liao, 2013; Farrant & Reese, 2000; Fivush, 2011; Fivush & Haden, 2003). These recalled events can range from the subpar turkey sandwich we ate for lunch Tuesday to the birth of our first child. Regardless of significance, if we view an event as having occurred specifically from our perspective, it is autobiographical in nature. Such memories are considered, more broadly, declarative memories, as they are facts or events that are consciously digested and recalled (Bauer, Hertsgaard, & Dow, 1994; Stickgold, 2005; Walker & Stickgold, 2004; Wilhelm, Prehn-Kristensen, & Born, 2012). While the exact means by which declarative memories are stored is up for debate, many believe they are initially stored in the hippocampus for a finite amount of time before either decaying or moving to the neocortical areas of the brain associated with long term memory (Bauer et al., 1994; Marshall & Born, 2007; Stickgold, 2005; Walker & Stickgold, 2004; Wilhelm et al., 2012).

Declarative memories emerge early in life, with nine-month-old infants demonstrating the ability to remember and imitate a series of actions after a delay (Bauer, 2007). As infants age, memory functioning becomes more robust and reliable. For instance, Bauer et al. (2000) conducted a longitudinal assessment of deferred imitation, an early indicator of declarative memory. Infants ranging in age from 13- to 20-months were taught a multistep sequence. Following this initial session, infants were prompted to recall the sequences after delays ranging from one month to one year. They found that infants' recall reliabilities seemed to vary as a function of age and delay. The oldest infants displayed reliability at all delay lengths, including

one year; the second eldest infants showed recall above chance at the first three delays; and the youngest infants only displayed reliable recall at the one-month delay.

However, it is not until early childhood that the first signs of AM specifically begin to emerge (see Nelson & Fivush, 2004, for review). The development of AM is characterized as gradual, with children slowly honing the skill over time. For instance, when children first begin to refer to the past around 16- to 18-months of age, they tend to use single words that reference very recent events (Nelson & Fivush, 2004; Nelson & Ross, 1980). While this development may seem insignificant, it should not be undervalued. These utterances, although limited, are the first indications that children can not only retrieve AM, but also have an interest in verbalizing their experiences to other people (Eisenberg, 1985; Hudson, 1990; Tomasello, 1999). This interest and ability continues to grow throughout childhood, with children making references to the distant past by 20- to 24-months and eventually providing full and relatively coherent accounts of past experiences by the age of three (Eisenberg, 1985; Nelson & Fivush, 2004; Sachs, 1983).

During these early years, parents also begin to engage in reminiscing, or conversations about AMs, with their child. Much like Vygotsky's (1962, 1978) cognitive development theories, it is suggested that parents use AM conversations to scaffold their child's understanding of language, self, society, and the world (Callanan & Valle, 2008; Nelson, 2007; Nelson & Fivush, 2004). When a child first learns to talk about the past, his or her parent will provide the majority of the narrative structure and information. From this scaffolding, the child will learn how to structure discussion of an experience, what is and is not acceptable to talk about, and which narrative characteristics distinguish a high-quality narrative from a low-quality narrative within the constraints of their culture (Alea & Wang, 2015; Fivush & Nelson, 2004; Wang, 2001; Wang, Hou, Tang, & Wiprovnick, 2011). As with cognitive scaffolding, the child's parent will

begin to contribute less and less to reminiscing conversations as the child grows in his or her AM skills. Forced to fill in the gaps, the child will rely on modeling the behaviors his or her parent previously displayed. This modeling elicits further feedback and clarification from the parent, which is then incorporated into future conversations by the child. This cycle continues until the child eventually develops a full understanding of how to participate in and talk about experiences and activities in a culturally-appropriate manner (Fivush, 2011).

Theoretically, when people talk about the past, they want to structure their stories in the “best” way possible—they want to highlight the narrative components that are valued and relevant to their culture and sense of self. Parents will adapt their scaffolding to fit this standard through a variety of mechanisms. One of the more robustly researched areas of narrative structure is maternal elaboration (Fivush, 2007; Fivush & Fromhoff, 1988; Fivush & Nelson, 2004; Fivush et al., 2017; Huson, 1990; Melzi, Schick, & Kennedy, 2017; Reese & Brown, 2000; Reese et al., 1993). Maternal elaboration refers to, simply, how elaborative and complex a mother’s contribution is to the parent-child conversation. Research suggests that parents vary widely on this dimension, with highly elaborative mothers engaging in long conversations, with a large volume of descriptions and evaluations, while less elaborative mothers engage in fewer conversations and talk with less detail and specificity (Fivush, 2007; Fivush & Fromhoff, 1988; Fivush & Nelson, 2004; Hudson, 1990; Reese & Brown, 2000).

Parents also differ in how efficiently they teach their child to tell a coherent narrative, a component of high quality narratives. As mentioned previously, AMs go beyond simply remembering what happened; a person is remembering what happened *to them*. As such, individuals need the narrative skills to piece together their personal experiences and perspective into a cohesive story. By the age of three, children are able to tell stories with some semblance

of cohesion (Fivush, Gray, & Fromhoff, 1987). However, they still rely heavily on parental intervention and scaffolding to keep the narrative consistent. Parents may try to model cohesive narrative behavior for their children. This may include the narrative techniques such as a heavy use of orienting terms, emotional evaluations, and referencing (Haden et al., 1997; Peterson & McCabe, 1992). Children, knowingly or not, pick up on these characteristics and incorporate them into their own unscaffolded narratives with others as they grow.

### **Child Gender and Memory**

As with many advancements during childhood, contextual factors may play a role in establishing a developmental trajectory. For instance, children are often socialized from a very early age based on their gender. Social-developmental theories suggest that children learn gender roles over the course of childhood through cognitive learning, socialization, and experiences (Chaplin & Aldao, 2013). Societal gender norms may also be projected onto children from a young age. As such, a child's development may be shaped both implicitly and explicitly by their gender.

Gender norms seem to relate to how parents approach talking about the past with their children. Although gender differences in the AM literature are somewhat inconsistent (see Grysman & Hudson, 2013, for a recent review), many studies have found that parents display gender-specific reminiscing behaviors. For instance, research suggests that mothers produce more elaborations when talking with girls relative to boys (Bemis et al., 2011; Fivush, Berlin, McDermott Sales, Mennuti-Washburn, & Cassidy, 2003). In addition, mothers frequently engage in more prolonged discussions, ask more open-ended questions, use more evaluations and supportive language, and scaffold more extended narratives with daughters relative to sons (Grysman & Hudson, 2013; Leaper et al., 1998; Reese et al., 1993). In contrast, research has

suggested that boys are more likely to specifically receive affirming evaluations and have information explained to them during informal learning exercises (Alessandri & Lewis, 1993; Crowley et al., 2018).

It is important to note that these differences may not necessarily be unique to reminiscing conversations or even driven by the parent. Rather, they may instead reflect overall differences in the way society interacts with children based on their gender. For instance, parents and other adults could engage in many of these same conversation patterns when talking to a child outside the contexts of joint reminiscing. In addition, it is entirely possible that parents are, rather than initiating gender-specific behavior, reacting to innate gender-specific behaviors

For instance, girls show a proclivity for social stimuli and face-to-face interactions starting during infancy (Caldera & Huston, 2016; Connellan, Baron-Cohen, Wheelwright, Batki, & Ahluwalia, 2000). As a result of these early experiences, girls may develop a more advanced skill set for social interactions, like engaging in reminiscing conversations. Similarly, research suggests that girls naturally display a wider range of emotive faces within the first months of life relative to boys (Malatesta & Haviland, 1982). This wide array of responses may in turn encourage parents to engage socially with female infants more frequently than male infants.

Perhaps relatedly, a robust line of literature suggests that girls also display an advantage and/or preference for reminiscing conversations from a young age. Girls tend to provide longer narratives with less prompting relative to boys (Peterson & McCabe, 1992). Furthermore, girls' narratives tend to be more complete and contain more specificity, greater detail, and more factual information relative to boys (Bemis et al., 2011; Farrant & Reese, 2000; Gryzman & Hudson, 2013). As such, the way parents communicate with their children, and the way their children

communicate back, may be shaped gender. In turn, this may translate to parents using differing narrative approaches when talking with their children about the past.

### **Conversation Goals and Accuracy Demand**

Parents may also adjust their narrative approach based on the specific goal of the AM conversations. According to work by Kulkofsky and colleagues (2009, 2010, 2011), parent-child conversations about the past have nine distinct functions. AM conversations can be used to encourage caregiver-child bonding, teach lessons and direct behavior, regulate emotions, build interdependence, entertain, develop memory skills, and maintain peer relationships (Kulkofsky, 2011). In accordance with these conversation goals, parents may modify their own narrative structures to elicit a specific response. For instance, researchers found that conversations used for teaching purposes were associated with a greater focus on discussing the child in relation to others (Kulkofsky, 2011).

More broadly, this conversation goal may relate to the accuracy demand of the reminiscing conversation. For instance, a study conducted by Kulkofsky and colleagues (2011) found that children between six- and eight-years of age varied the accuracy of their narratives as a function of perceived conversation goal. In the study, children were read a story and then asked to retell the narrative in either truthful or entertaining way, thus differing the goal and accuracy demand of the retelling context. The authors found that those children in the truthful condition uttered more verbatim statements and had a lower error rate relative to children in the entertainment condition (Kulkofsky, Principe, Debaran, & Stouch, 2011). In contrast, those in the entertainment condition incorporated more false details into their narratives, an indication that the emphasis on entertainment may have lowered their perception of the conversation's accuracy demand.

It appears that parents are also susceptible to changing their behavior in response to conversation accuracy demands. For example, Cleveland, Reese, & Gronick (2007) found that parents who knew their child would be tested on their factual recall of an event exhibited a high level of control and power assertion when discussing the event with their child. In the study, twenty-eight preschooler-caregiver dyads engaged in multiple reminiscing activities. During one activity, a research assistant guided the child through a zoo-themed activity. Although parents did not participate in the activity, they did observe the activity and watched their child move through the “zoo.”

Parents were then instructed to reminisce about the activity later that night with their child. In addition, they were primed with one of two conversational goals. Process-oriented parents were told to have a conversation about their child’s perspective of the experience, as the child would be tested on this subject two weeks later. In contrast, outcome-oriented parents were told to focus their conversation on accuracy, as their child’s factual recall for the event would be tested two weeks later.

Researchers found that these differing goals translated to unique parental scaffolding. Specifically, parents exposed to a high accuracy demand via the outcome-oriented condition displayed more narrative control during the zoo reminiscing conversation relative to parents in the process-oriented condition. Additionally, parents in the outcome-oriented condition displayed marginally more narrative control during the zoo reminiscing conversation relative to a baseline measure. These results suggest that parents were not only sensitive to the perceived accuracy demand of the conversation, but also tangibly changed the way they talked with their child as a result. Parents who felt a high accuracy demand became focused on insuring the accuracy of their child, even at the cost of discouraging child autonomy.



Within this study, Cleveland and colleagues (2007) also examined the construct of parental structure in relation to conversation goal. Parental structure was defined as pertaining to elaborations, repetitions, confirmations, and negations (Cleveland et al., 2007). The authors paired elaborations and confirmations as a measure of elaborative structure and total repetitions and negations as a measure of repetitive structure. Interestingly, the researchers found no difference in elaborative structure or repetitive structure between context conditions. However, it is unclear if confirmations and negations, when considered in isolation from elaborations and repetition, were impacted by condition.

### **The Use of Evaluations in Conversation**

Confirmations and negations, sometimes labeled jointly as “evaluations,” are frequently measured in the reminiscing literature. As defined in the Cleveland et al. (2007) article, as well as many others in the field (Cleveland & Reese, 2005; Reese & Brown, 2000; Reese et al., 1993) negations are considered corrections or statements that undermine a child’s statement (e.g., “That is not what happened”). In contrast, confirmations include affirmations (e.g., “Yes, that’s right!”), as well as more general encouragement (e.g., “Uh-huh”) or repeating the child’s statement back to them.

As with the coding scheme used by Cleveland and colleagues (2007), it is not unusual for researchers to analyze evaluations within the context of larger narrative construct, such as elaborative structure or maternal support. In these instances, the majority of studies (Cleveland et al., 2007; Cleveland & Reese, 2005; Reese & Brown, 2000; Reese et al., 1993; Haden, 1998) do not conduct separate analyses to parse out how evaluations alone relate to reminiscing behaviors. As a result, the full effects of confirmations and negations may be misrepresented in the narrative literature.

Additional inaccuracies may result from the field's tendency to label both affirmations and general encouragement as positive evaluations. In actuality, there is a substantial body of literature that suggests these instances of general encouragement are a separate entity relative to affirmations (Gardner, 2001; Lambertz, 2011; McCarthy, 2003). While it seems apt to label affirmations as positive evaluations, it seems inaccurate to label neutral encouragement, like "Uh-huh," as reflecting the same construct. Instead, researchers have labeled these neutral narrative constructs by a variety of other names, including response tokens, minimal responses, and backchannels. Whereas affirmations serve to specifically confirm some level of acceptance of what the speaker has said (e.g., "You're right," or "Mhm."), response tokens (e.g., "Oh?") or repeating back a sentence verbatim (e.g., "You saw the train?") does not necessarily indicate if the listener agrees or disagrees with the speaker's input. Instead, these utterances simply serve to assure the speaker they are being understood and that the listener is still listening (Gardner, 2001; Lambertz, 2011; McCarthy, 2003). In other words, response tokens serve to move the conversation forward without offering judgment on the perceived agreeableness or accuracy of what is being said. This stands in contrast to affirming and negating statements. These "true" evaluations serve to distinctly speak to the accuracy of the speaker's recent comments. Both affirmations and negations are inherently directional (positive or negative) whereas response tokens, which we have labeled neutral evaluations, are noncommittal—they can be used regardless of the accuracy of the speaker's narrative. As such, it can be argued that neutral evaluations serve a distinct purpose relative to affirming and negating evaluations.

These functions translate to the way parents and children speak about the past. Both implicitly and explicitly, parents can use affirmations and negations to send their child signals about the accuracy of his or her statement. When parents perceive their children has provided an

accurate response, they may provide an affirming evaluation (“Yes, that’s right!”) to reassure the child that his or her recollection is accurate. Likewise, when parents perceive that their child has provided an incorrect response, they may provide a negating evaluation (“No, that’s not what happened”). And indeed, this approach seems to work in some situations, with research suggesting that gentle corrections to children’s inaccuracies encourage improved performance on reasoning tasks (Spiker, Cantor, & Klouda, 1985). In contrast however, neutral evaluations may offer parents a way to indicate engagement and attention to a conversation without providing appraisal or judgment on the accuracy of their child’s statement (e.g., “Oh, I see”). Similar to a parent adding additional information or asking an open-ended question, neutral evaluations may serve to simply move the reminiscing conversation forward (Hedrick, Haden, & Ornstein, 2009; Larinka & Bauer, 2010; Reese et al., 1993).

## CHAPTER TWO: THE PRESENT STUDY

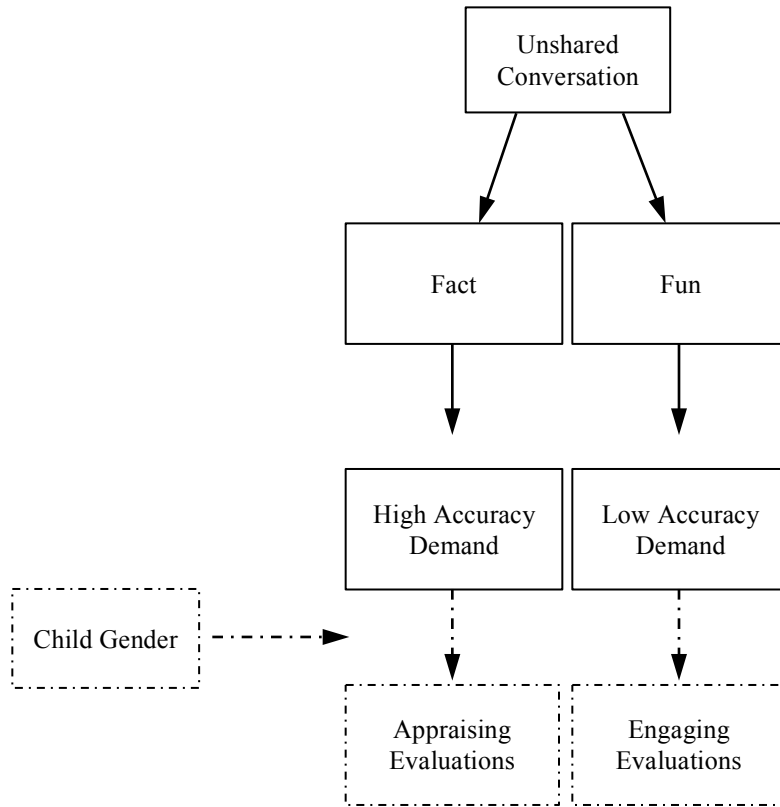
### Theoretical Evaluation Model

Given this distinction, we propose that parent evaluations serve two distinct functions within the reminiscing conversation. We theorize that, within the context of disjointed reminiscing, parents use evaluations to either *appraise* or *engage*. When parents use appraising evaluations, such as confirmations and negations, they use the evaluations to specifically validate or invalidate their child's input. In contrast, when parents use engaging evaluations, so neutral evaluations, they are simply trying to move the conversation forward, without signaling anything about accuracy.

Notably, it seems likely that this usage may differ as a function of accuracy demand and child gender. As previously discussed, girls display a skill for recalling specific and detailed episodes with little prompting, while boys tend to produce vague and relatively disengaged accounts of the past (Bemis et al., 2011; Farrant & Reese, 2000; Gryzman & Hudson, 2013; Peterson & McCabe, 1992). As a result, girls may produce more "fact-sounding" narratives and require little encouragement to stay engaged, while boys may produce vague descriptions and require a hefty amount of encouragement to stay involved in the reminiscing conversation.

Thus, when a parent is focused on gathering facts, they will want to use appraising evaluations to scaffold their child's narrative in a truthful direction. The specificity of girls' narratives will give them more opportunities to do so, thus causing parents to use more appraising evaluations with girls relative to boys when the conversation is focused on facts. In contrast, if a conversation is focused on having fun, parents will rarely feel the need to use appraising evaluations with either gender. Finally, parents will want to do what they can to keep their sons engaged in the reminiscing conversation, and will therefore use engaging evaluations

more with boys relative to girls regardless of whether the conversation is focused on facts or fun. See Figure 2.1 for a depiction of the theoretical evaluation model.



*Figure 2.1.* The theoretical evaluation model.

### **Study Aims and Hypotheses**

In the present study, caregiver-child dyads engaged in reminiscing about an event only experienced by the child. Prior to recall, caregivers were told to approach the conversation from a factual perspective or a fun or entertaining perspective (similar to the manipulation used in Kulkofsky et al., 2011). These directions were assumed to manipulate the accuracy demand of the situation, such that caregivers in the fact condition felt a high accuracy demand, while caregivers in the entertainment condition experienced a low accuracy demand. As a result, it was expected that parents would vary in their usage of evaluations for appraisal or

engagement. In addition, this variability was considered in relation to child gender. Thus, the general aim of the present study was to examine the theoretical evaluation model previously described. The specific aims of the study were as follows:

**Specific Aim 1:** Examine the joint effects of recall context and child gender on caregivers' use of appraising evaluations while reminiscing about an unshared experience.

***Hypothesis 1A:** Caregivers will use more appraising evaluations with girls when the accuracy demand is high in the fact condition, relative to boys.*

***Hypothesis 1B:** Caregivers will use the same amount of appraising evaluations with girls when the accuracy demand is low in the entertainment condition, relative to boys.*

***Hypothesis 1C:** Caregivers will use fewer appraising evaluations with girls in the Entertainment condition, relative to the fact condition.*

***Hypothesis 1D:** Caregivers will use the same amount of appraising evaluations with boys across both conditions.*

**Specific Aim 2:** Examine the joint effects of recall context and child gender on caregivers' use of neutral evaluations while reminiscing about an unshared experience.

***Hypothesis 2A:** Caregivers will use more engaging (neutral) evaluations with boys, regardless of accuracy demand, relative to girls.*

## CHAPTER THREE: METHOD

### Participants

Eighty-nine children were recruited for the present study along with their caregiver. Four dyads did not complete all relevant procedures and were excluded from analyses. One participant was recruited with the understanding that she fell within the predetermined study age range (36 to 72 months) but was identified as being significantly outside of the study age range by her mother on study questionnaires (reported age: 82 months). Thus, this dyad was also excluded from analyses, leaving a final sample size of 84 caregiver-child dyads.

Children ranged in age from 37 months to 72 months ( $M = 54.93$ ,  $SD = 9.01$ ) with 38 females ( $M_{age} = 56.13$ ,  $SD = 8.97$ ) and 46 males ( $M_{age} = 53.93$ ,  $SD = 9.02$ ). Caregivers consisted of 77 biological mothers, four biological fathers, two domestic partners who regularly resided in the home, and one grandmother. All children were typically developing and fluent in English. Approximately forty-three percent of child participants were Latino/Hispanic, 17% were African American, 17% were Caucasian, 10% were multiethnic, 5% were Asian, and 2% were Mexican or Mexican-American; six percent of parents indicated other or did not provide a race/ethnicity for their child. Approximately forty-four percent of caregivers identified as Latino/Hispanic, 20% were Caucasian, 17% were African American, 10% were Asian, 5% were multiethnic, and 2% percent were Mexican/Mexican-American; two percent of parents indicated other or did not provide a race/ethnicity. Ninety-four percent of participating caregivers had at least some college education; approximately 58% reported an annual household income of \$60,000 or more. Participants were recruited from two locations (Miami, FL and Orange County, CA) by two local participant recruitment firms. Caregivers were contacted via telephone using a pre-approved telephone script and scheduled for one study session.

## **Materials and Measures**

Caregivers completed a demographic questionnaire, along with an adapted child language fluency questionnaire (Gathercole, Stadthagen-Gonzalez, & DeCubas, 2017) to assess language upbringing. In addition, the child completed the Expressive Vocabulary Test, 2<sup>nd</sup> Edition (EVT-2; Williams, 1997). The EVT-2 is a measure of expressive vocabulary and word retrieval (Williams, 1997). The test consists of 190 items that cover 20 categories of content and parts of speech and items gradually increase in difficulty. Reliability ranges from .87 to .94 and the test is highly correlated ( $r = .82$ ) with the Peabody Picture Vocabulary Test (PPVT-4; Dunn, Dunn, Bulheller, & Hacker, 2007). The test was administered individually and is appropriate for the age range of the present study. Raw test scores were calculated and then converted to an age normative score. Caregivers also completed the Caregiver Reminiscence Scale during the study session (CRS; Kulkofsky & Koh, 2009). However, these data were not utilized in the present analyses.

## **Procedure**

The present study was approved by the appropriate Institutional Review Boards prior to testing. Dyads completed one session in two child-safe testing rooms at one of two local universities involved in the project. Prior to each session, the testing room and an adjacent play activity room were set up with necessary materials. The play activity room was decorated with hidden clues that, when followed sequentially, resulted in the discovery of a hidden stuffed elephant. At the beginning of each session, study procedures were explained to the caregiver and child by a trained primary researcher. The caregiver and child were given the opportunity to ask questions before written informed consent was collected from the caregiver and verbal assent was obtained from the child. Caregivers were given a copy of the consent form for their records.



**Parent-child autobiographical conversation.** After the consent process, the researcher transitioned to the parent-child autobiographical conversation. During this transition, the researcher instructed the parent-child dyad to pick a past event to discuss together. The researcher explained that the past event had to be a singular event the dyad experienced together in the three months prior to the study session. The caregiver and child were given time to nominate an event, with assistance from the researcher provided as needed. Once an event was nominated, the researcher explained that he/she would leave the room for five minutes and instructed the dyad to discuss the nominated event as they normally would at home. The researcher then started an audio recording for later offline coding and left the room. After five minutes had elapsed, the primary researcher and a novel, secondary researcher entered the room and stopped the audio recording.

**Play activity transition.** The primary researcher briefly introduced the dyad to the secondary researcher. He/she then explained that the secondary researcher would accompany the child to an adjacent room to play a short game. After the secondary researcher and child left the room to engage in the play activity, the primary researcher used a script to briefly describe the play activity to the caregiver. Regardless of context condition, all caregivers were told the goal of their child's play activity was to find a hidden stuffed animal. However, the specific details of this description varied by condition; at scheduling, dyads were randomly assigned to either a fact condition or an entertainment condition.

In the fact condition, caregivers were told their child was pretending to be a detective solving the kidnapping of a stuffed animal. The researcher explained that once reunited, the caregiver should try to find out exactly what happened during the activity. The caregiver was instructed to collect any information that might help solve the kidnapping case and were

specifically told to ask the child about the kidnapper's identity. In the entertainment condition, caregivers were told their child was playing hide and seek with a stuffed animal in the next room. The researcher emphasized that the game was meant to be silly, and explained that once reunited, the caregiver should encourage their child to discuss their play experience in a entertaining and exciting way. Caregivers in this condition were also specifically instructed to ask their child who helped the stuffed animal hide. Caregivers in both conditions were provided with written instructions for their reference and given the opportunity to ask clarification questions. See Appendix A for the instructions provided in each condition.

**Play activity.** While the primary researcher conducted the play activity transition with the caregiver, the secondary researcher and child completed the play activity in an adjacent testing room. When the secondary researcher and child entered the play activity room, the researcher started an audio recording and provided the child with verbal activity instructions that varied by context condition. See Appendix B for the instructions provided in each condition. Children in the fact condition were told that a stuffed animal had been kidnapped. They were instructed that as a detective, they should look around the room for clues about the animal's location. Children in the entertainment condition were told that a stuffed animal wanted to play a game of hide and seek with them. The secondary researcher explained that someone had previously helped the animal hide and suggested they try to figure out the hiding place. In both conditions, the secondary researcher then helped the child find each hidden clue in order, culminating in the child locating the hidden elephant. When the child successfully found the hidden elephant, the secondary researcher congratulated the child and gave him or her an animal sticker. At the end of the play activity, the secondary researcher ended the audio recording and transitioned the child back to the testing room where their caregiver was waiting.

**Parent-child interview.** After the secondary researcher returned the child to their caregiver, the primary researcher instructed the caregiver to talk about the play activity using the condition-specific instructions discussed during the play activity transition. The primary researcher explained that he/she would wait outside the room until the caregiver or child indicated they were done with their conversation. The primary researcher then turned on the audio recorder and left the room.

**Interviewer-child interview.** Once the dyad indicated their interview was complete, the primary researcher returned to the room and explained that he/she would like to talk about the activity with the child given that he/she was not present during the activity. The caregiver was asked to complete questionnaires in an adjacent during the interview. After the caregiver left, the primary researcher asked the child to explain everything that had happened during the play activity. While the child was talking, the primary researcher engaged in verbal and non-verbal active listening (e.g. “Oh”, “I see”, nodding) and provided neutral encouragement (e.g., “What else can you tell me?”) only when necessary. Once the child indicated they were unable to provide further details, the researcher asked them a series of 12 scripted follow up questions (see Appendix C). At this point, the audio recording was stopped and the primary researcher completed the age-appropriate version of the EVT-2 with the child as described in the test inventory manual. Finally, the caregiver and child were reunited, thanked for their participation, and provided with a small toy and monetary incentive.

### **Data Reduction**

Age normative scores from the EVT-2 were calculated according to the inventory manual and used in the present analyses as a measure of language ability (Williams, 1997). All conversations recorded during the procedure were transcribed verbatim, in English, from

audiotapes by a research assistant. The transcripts were bracketed by relevant conversational turns such that the first turn was the first task-relevant continuous block of speech from the parent or child followed by a response from the other member of the dyad and so on. Each turn was then bracketed by propositions (subject-verb constructions) as is common procedure in dyadic reminiscing research (e.g., Adams, Kuebli, Boyle, Reese, & Eppen, 1995; Principe, DiPuppo, & Gammel, 2013; Principe, Trumbull, Gardner, Van Horn, & Dean, 2017). A second research assistant checked all transcripts for inaccuracies.

Trained undergraduate research assistants who were blind to the study hypotheses then coded each transcript. Off topic turns (e.g., “I’m hungry” or “What should we talk about?”) and unintelligible talk were coded as irrelevant and not considered further. Transcripts were coded for various narrative dimensions, including narrative volume and caregiver evaluations. Two coders independently coded at least 20% of the transcripts to calculate reliability. Reliability for caregiver evaluations was moderate across evaluation types. Any discrepancies were discussed until a consensus was reached for each narrative code. This code was then used by one coder to complete the remaining transcripts.

**Narrative volume.** Narrative volume for each conversation was measured via the total number of conversation turns taken by the caregiver and child.

**Caregiver evaluations.** In line with previous research (e.g. Cleveland & Reese, 2005; Cleveland et al., 2007; Reese & Brown, 2000; Reese et al., 1993) any caregiver utterances that confirmed, negated, questioned, or repeated the child’s previous statements were considered evaluative. Any utterances identified as evaluative were then secondarily coded as an affirming evaluation, neutral evaluation, or negating evaluation. Evaluations were sub-categorized as affirming if they served to specifically affirm or support what was said (e.g., “Mhm” or “That’s

right”). In contrast, evaluations were coded as neutral if they simply repeated and/or questioned what was said (e.g., “The car was blue?” or “You saw a mouse.”), or if the speaker provided non-specific encouragement to continue talking (e.g., “Oh, ok” or “Oh really?”). Finally, evaluations were coded as negating if the caregiver disagreed with or corrected what the child previously said (e.g., “No, that didn’t happen” or “That doesn’t sound right”).

## CHAPTER FOUR: RESULTS

Multiple statistical analyses were conducted to examine the specific aims and hypotheses of the present thesis. As outlined in Chapter 2, data were reduced prior to analyses. Descriptive statistics were calculated and data distributions were adjusted as necessary. Appraising evaluations (affirming and negating evaluations combined) were analyzed in relation to child gender and context condition, as well as relevant covariates. These two evaluation types were then analyzed separately, as were neutral evaluations. Finally, a subsample of caregivers was created, with descriptive statistics again calculated and used to adjust distributions as necessary. These data were then analyzed in regards to the four evaluation categories explored with the full sample (appraising, affirming, negating, and neutral).

### **Preliminary and Descriptive Analyses**

As mentioned previously, five participants were excluded from data analysis; four participants did not complete the study and one participant was outside the study age range. For the remaining sample ( $N = 84$ ), the frequency of occurrence for each caregiver evaluation type (affirming, neutral, and negating) was calculated in regards to the parent-child interview. As such, each dyad received four evaluation scores: 1) the number of affirming evaluations used, 2) the number of neutral evaluations used, 3) the number of negating evaluations used, and 4) the number of appraising evaluations used, which was calculated as the combined amount of affirming and negating evaluations. The total number of conversation turns was also included in the analyses as a measurement of conversation length.

Preliminary analyses revealed no significant differences in child gender, age, EVT-2 normative scores, family income, or child ethnicity between the fact and entertainment context

conditions. There were also no significant demographic differences between males and females.

See Table 3.1 for specific values.

Table 3.1

*Demographic Characteristics of Caregiver and Child Participants*

Demographic Variable	Full Sample (N = 84)
<b>Child Gender</b>	
Male	45.2% (46)
Female	54.8% (38)
<b>Child Age*</b>	54.93 ± 9.01
<b>EVT-2 Normative Scores</b>	103.29 ± 14.72
<b>Caregiver Relationship</b>	
Biological Mother	91.7% (77)
Biological Father	4.8% (4)
Other	3.6% (3)
<b>Child Ethnicity</b>	
Hispanic/Latino	42.8% (36)
Caucasian	16.7% (14)
African American	16.7% (14)
Asian	4.7% (4)
Multiethnic	10.7% (9)
Mexican/Mexican American	2.4% (2)
Other/Not Reported	6% (5)
<b>Caregiver Ethnicity</b>	
Hispanic/Latino	44% (37)
Caucasian	20.2% (17)
African American	16.7% (14)
Asian	9.5% (8)
Multiethnic	4.8% (4)
Mexican/Mexican American	2.4% (2)
Other/Not Reported	2.4% (2)
<b>Household Income</b>	
Under \$30,000	10.7% (9)
\$30,000-\$59,000	31% (26)
\$60,000+	58.3% (49)
<b>Caregiver Education</b>	
HS Graduate or Less	3.6% (3)
Some College or College Degree	73.8% (62)
Post-College Degree	20.2% (17)
Not Reported	2.4% (2)

*Note.* Data are presented as  $M \pm SD$  or % ( $n$ ), as appropriate.

\*Value expressed in months.

The residual scores for age, EVT-2 normative scores, total evaluations, and neutral evaluations were approximately normally distributed. The affirming evaluation, negating

evaluation, combined appraising data (affirming + negating), and conversation length scores were positively skewed. The conversation length data were normalized via a logarithmic transformation. A univariate analysis of the transformed data revealed a statistically significant interaction between child gender and test condition on total conversation length,  $F(1, 80) = 4.66$ ,  $p = .034$ , partial  $\eta^2 = .055$ , such that boys had longer conversations in the fact condition but shorter conversations in the entertainment condition, relative to girls.

The appraising, affirming, and negating data proved unresponsive to transformations, trimming, and/or Winsorizing. As a result, all three scores were converted to ordinal categorical variables. The appraising data, which ranged from zero to 14, were separated into three bins: zero appraising evaluations ( $n = 22$ ), one appraising evaluation ( $n = 22$ ), and two or more appraising evaluations ( $n = 40$ ). This approach, as opposed to categorizing the evaluations dichotomously, was used to standardize sample sizes among groups as much as possible. Likewise, the affirming evaluation scores, which ranged from zero to twelve, were separated into three bins: zero affirming evaluations ( $n = 30$ ), one affirming evaluation ( $n = 27$ ), and two or more affirming evaluations ( $n = 27$ ). Negating evaluations, which ranged from zero to six, were recoded dichotomously: zero negating evaluations ( $n = 59$ ) and at least one negating evaluation ( $n = 25$ ). Again, this approach was used to standardize sample sizes between groups as much as possible.

### **Predicting the Use of Appraising Evaluations**

A cumulative odds ordinal logistic regression with proportional odds was run to determine the effects of context condition (fact vs. entertainment context), child gender, child age, EVT-2 normative score, conversation length, and a condition by child gender interaction, on



the use of appraising evaluations (affirming and negating combined) by the caretaker during the parent-child interview.

There were proportional odds, as assessed by a full likelihood ratio test comparing the fitted model to a model with varying location parameters,  $\chi^2(6) = 2.59, p = .86$ . The deviance goodness-of-fit test indicated that the model was a good fit to the observed data,  $\chi^2(156) = 148.19, p = 0.66$ , but most cells were sparse with zero frequencies in 66.7% of cells. However, the final model statistically significantly predicted caregivers' use of appraising evaluations over and above the intercept-only model,  $\chi^2(6) = 24.88, p < .001$ .

Of the six predictor variables, one was statistically significant (conversation length) and one was marginally significant (context condition  $\times$  gender). An increase in conversation length was associated with an increase in the odds of a caregiver using two or more appraising evaluations during the parent-child interview, with an odds ratio of 44.69,  $\chi^2(1) = 15.61, p < .001, 95\% \text{ CI } [6.79, 294.25]$ . The interaction of condition by child gender was marginally associated with the odds of a caregiver using two or more appraising evaluations during the parent child interview,  $\chi^2(1) = 2.97, p = .085$ . See Table 3.2 for regression coefficients and standard errors.

Table 3.2

*Summary of Ordinal Logistic Regression Analysis Predicting The Use of Appraising Evaluations*

<i>Variable</i>	<i>B<sup>a</sup></i>	<i>Wald</i>	<i>Odds Ratio</i>	<i>Significance</i>
Condition	-1.38 (.67)	1.42	0.25	.23
Child Gender	-1.44 (.70)	1.73	0.24	.19
EVT-2 Scores	.02 (.02)	2.34	1.03	.13
Child Age	.02 (.03)	0.56	1.02	.45
Total Turns	3.80 (.96)	15.61	44.69	< .001***
Condition × Gender	1.66 (.96)	2.97	5.24	.085†
-2 log likelihood	148.19			
Model chi-square	24.88			
<i>df</i>	6			
Significance	< .001			

a. Standard errors in parentheses.

† $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

### Separating Affirming and Negating Evaluations

In an effort to tease apart these results, affirming and negating evaluations were analyzed separately. A cumulative odds ordinal logistic regression with proportional odds was run to determine the effects of context condition (fact vs. entertainment context), child gender, child age, EVT-2 normative score, conversation length, and a condition by child gender interaction, on the use of affirming evaluations by the caretaker during the parent-child interview.

There were proportional odds, as assessed by a full likelihood ratio test comparing the fitted model to a model with varying location parameters,  $\chi^2(6) = 2.46$ ,  $p = .87$ . The deviance goodness-of-fit test indicated that the model was a good fit to the observed data,  $\chi^2(156) = 158.87$ ,  $p = 0.42$ , but most cells were sparse with zero frequencies in 66.7% of cells. However,

the final model statistically significantly predicted caregivers' use of affirming evaluations over and above the intercept-only model,  $\chi^2(6) = 21.13, p = .002$ .

Of the six predictor variables, two were statistically significant (EVT-2 normative scores and conversation length) and three were marginally significant (context condition, child age, and condition by gender interaction). An increase in EVT-2 normative scores was associated with an increase in the odds of a caregiver using two or more affirming evaluations during the caregiver-child interview, with an odds ratio of 1.03,  $\chi^2(1) = 3.85, p = .05, 95\% \text{ CI } [1.000, 1.062]$ .

Likewise, an increase in conversation length was associated with an increase in the odds of a caregiver using two or more affirming evaluations during the caregiver-child interview, with an odds ratio of 11.45,  $\chi^2(1) = 8.64, p = .003, 95\% \text{ CI } [2.253, 58.194]$ . Test condition had a marginal effect on the prediction of caregivers using two or more affirming evaluations during the interview,  $\chi^2(1) = 3.53, p = .06$ , as did child age,  $\chi^2(1) = 2.91, p = .09$ , and the interaction of condition by child gender,  $\chi^2(1) = 2.69, p = .10$ . See Table 3.3 for regression coefficients and standard errors.

Table 3.3

*Summary of Ordinal Logistic Regression Analysis Predicting The Use of Affirming Evaluations*

<i>Variable</i>	<i>B<sup>a</sup></i>	<i>Wald</i>	<i>Odds Ratio</i>	<i>Significance</i>
Condition	-1.59 (.63)	3.53	0.21	.06†
Child Gender	-1.33 (.65)	1.68	0.27	.19
EVT-2 Scores	.03 (.02)	3.85	1.03	.05*
Child Age	.04 (.03)	2.91	1.04	.09†
Total Turns	2.44 (.83)	8.64	11.45	.003**
Condition × Gender	1.50 (.91)	2.69	4.46	.10†
-2 log likelihood	158.87			
Model chi-square	21.13			
<i>df</i>	6			
Significance	.002			

a. Standard errors in parentheses.

† $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .0$

In addition, a binomial logistic regression was performed to ascertain the effects of context condition, child gender, child age, EVT-2 normative score, conversation length and a condition by child gender interaction, on the likelihood that caregivers would use a negating evaluation during their parent-child interview. Linearity of the continuous variables with respect to the logit of the dependent variable was assessed via the Box-Tidwell (1962) procedure. There were no studentized residuals with a value above three standard deviations. The full model was statistically significant,  $\chi^2(6) = 21.50$ ,  $p = .001$ , explained 32.6% (Nagelkerke  $R^2$ ) of the variance in the use of negating evaluations, and correctly classified 75.6% of cases. However, of the six predictor variables, only conversation length was statistically significant (as shown in Table 3.4), such that an increase conversation length was associated with the increased likelihood of a caregiver using a negating evaluation.

Table 3.4

*Summary of Binomial Logistic Regression Analysis Predicting The Use of Negating Evaluations*

<i>Variable</i>	<i>B<sup>a</sup></i>	<i>Wald</i>	<i>Odds Ratio</i>	<i>Significance</i>
Condition	.24 (.74)	1.05	1.27	.55
Child Gender	.43 (.81)	0.36	1.54	.35
EVT-2 Scores	.03 (.02)	0.89	1.03	.17
Child Age	.02 (.03)	1.85	1.02	.57
Total Turns	-3.82 (1.06)	0.33	0.02	<.001***
Condition × Gender	.24 (1.18)	13.00	1.27	.84
Model chi-square	21.50			
<i>df</i>	6			
Significance	.001			

a. Standard errors in parentheses.

† $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

### **Predicting the Use of Neutral Evaluations**

A multiple regression was run to predict the number of neutral evaluations used by caregivers during the parent-child interview from context condition, child gender, conversation length, child age, EVT-2 normative scores, and a condition by child gender interaction. There was linearity as assessed by partial regression plots and a plot of studentized residuals against predicted values. There was homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. There was no evidence of multicollinearity, as assessed by tolerance values greater than 0.1. There was one studentized residual with a value of 3.56 standard deviations. However, the point was further inspected and ultimately kept in the analysis, given that it had a centered leverage value lower than 0.2 and a Cook's Distance value lower than 1. All other data had values within a normative range. The assumption of normality was also met, as assessed by a Q-Q plot. The model significantly

predicted the amount of total evaluations used,  $F(6, 75) = 24.10, p < .001$ , adjusted  $R^2 = .63$ .

However, this effect was driven exclusively by conversation length,  $p < .001$ ; context condition and child gender did not appear to significantly contribute to the prediction. Regression coefficients and standard errors can be found in Table 3.5.

Table 3.5

*Summary of Multiple Linear Regression Analysis Predicting The Use of Neutral Evaluations*

<i>Variable</i>	<i>B<sup>a</sup></i>	<i>β</i>	<i>Wald</i>	<i>Significance</i>
Condition	.77 (1.73)	2.18	1.27	.26
Child Gender	.93 (1.81)	2.55	1.58	.21
EVT-2 Scores	.02 (.04)	1.02	0.15	.70
Child Age	-.12 (.07)	0.89	2.70	.10†
Total Turns	26.01 (2.21)	$1.97e^{11}$	138.61	<.001***
Condition × Gender	1.33 (2.59)	3.77	0.26	.61
Model chi-square	88.10			
<i>df</i>	6			
Significance	<.001			

a. Standard errors in parentheses.

† $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

### **Exploratory Analyses with Subsample**

As previously described, the affirming and negating distributions were converted to ordinal categorical variables to account for extreme positive skew. However, converting continuous variables to categorical is known to contribute to the loss of nuanced information (Van Belle, 2011). Given that our hypotheses were focused on rather small and incremental differences, there was a concern that our regression analyses would not fully capture these relations. As such, we decided to conduct exploratory analyses with a subsample of the study sample.

**Preliminary and descriptive analyses.** Due to the conversation parameters and coding rules utilized for the present study, it was possible for a caregiver to use only neutral evaluations when reminiscing with their child. Analyses revealed that 22 caregivers used neutral evaluations exclusively and failed to use at least one appraising (affirming or negating) evaluation throughout the entire length of the caregiver-child interview. Given that the majority of our hypotheses focused on comparing the use of appraising evaluations with engaging (neutral) evaluations, this absence made portions of our data difficult to interpret. In addition, these individuals contributed to the zero-heavy, positively skewed affirming and negating distributions. As such, a subsample ( $n = 62$ ) was created of caregivers who used at least one appraising (affirming or negating) evaluation during the parent-child interview. See Table 3.6 for descriptive data. Each evaluation scores (appraising, affirming, negating, and neutral) for the subsample was then divided by the total number of conversation turns to calculate the proportion of affirming, neutral, negating, and appraising evaluations used during the caregiver-child interview relative to total conversation turns.

Table 3.6

*Demographic Characteristics of Caregiver and Child Participants for Subsample*

Demographic Variables	Subsample ( <i>n</i> = 62)
<b>Child Gender</b>	
Male	58.1% (36)
Female	41.9% (26)
<b>Child Age*</b>	54.77 ± 9.18
<b>EVT-2 Normative Scores</b>	104.48 ± 13.94
<b>Caregiver Relationship</b>	
Biological Mother	93.6% (58)
Biological Father	3.2% (2)
Other	3.2% (2)
<b>Child Ethnicity</b>	
Hispanic/Latino	32.3% (20)
Caucasian	21% (13)
African American	17.7% (11)
Asian	3.2% (2)
Multiethnic	14.5% (9)
Mexican/Mexican American	3.2% (2)
Other/Not Reported	8.1% (5)
<b>Caregiver Ethnicity</b>	
Hispanic/Latino	32.3% (20)
Caucasian	27.4% (17)
African American	19.3% (12)
Asian	9.7% (6)
Multiethnic	6.5% (4)
Mexican/Mexican American	3.2% (2)
Other/Not Reported	1.6% (1)
<b>Household Income</b>	
Under \$30,000	12.9% (8)
\$30,000-\$59,000	29% (18)
\$60,000+	58.1% (36)
<b>Caregiver Education</b>	
HS Graduate or Less	3.2% (2)
Some College or College Degree	75.8% (47)
Post-College Degree	19.4% (12)
Not Reported	1.6% (1)

*Note.* Data are presented as  $M \pm SD$  or % (*n*), as appropriate.

\*Value expressed in months.

**Analysis of covariance for appraising evaluation proportions.** A two-by-two ANCOVA was conducted to examine the effects of context condition and child gender on the proportion of appraising (affirming + negating) evaluations used by caretakers throughout the parent-child interview, controlling for child age and EVT-2 normative scores. There were no



main effects of child gender,  $p = .52$ , or context condition,  $p = .60$  on the proportion of appraising evaluations used. However, there was a statistically significant interaction between context condition and child gender,  $F(1, 55) = 10.36$ ,  $p = .002$ , partial  $\eta^2 = .158$ . See Figure 3.1.

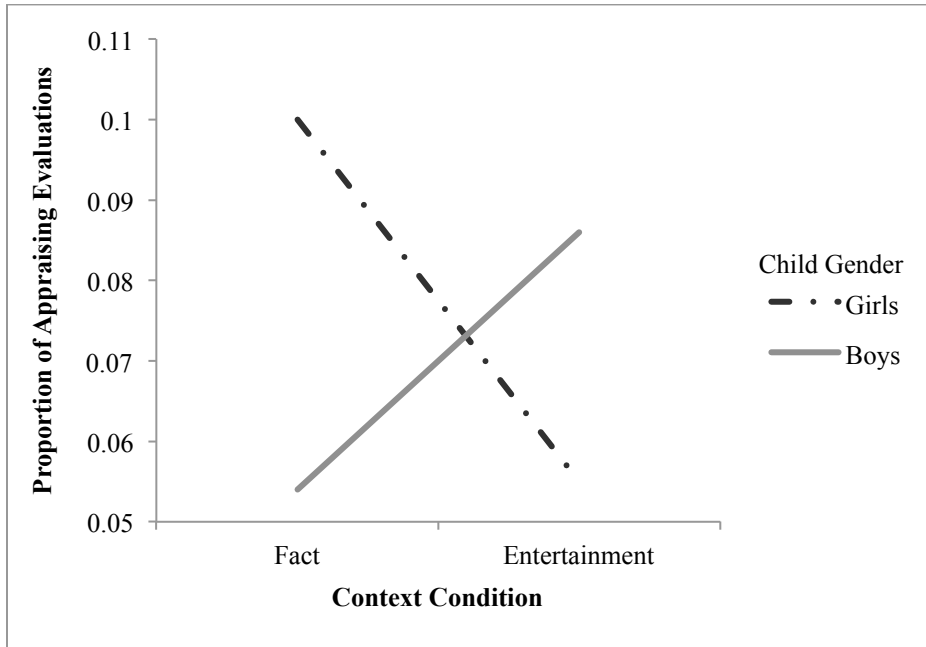


Figure 3.1. Subsample’s proportion of appraising evaluations on context condition by child gender.

Therefore, an analysis of simple main effects for appraising evaluations was performed with statistical significance receiving a Bonferroni adjustment and being accepted at the  $p < .025$  level. There was a statistically significant difference in the mean proportion of appraising evaluations used between girls ( $M = .10$ ) and boys ( $M = .054$ ) in the fact condition,  $F(1,55) = 6.84$ ,  $p = .011$ , partial  $\eta^2 = .111$ . In contrast, there was no difference in the mean proportion of appraising evaluations used between girls ( $M = .055$ ) and boys ( $M = .086$ ) in the entertainment condition,  $F(1, 55) = 3.67$ ,  $p = .06$ , partial  $\eta^2 = .063$ . Girls differed between context conditions, with girls in the fact condition receiving significantly more appraising evaluations relative to girls in the entertainment condition,  $F(1, 55) = 5.83$ ,  $p = .019$ , partial  $\eta^2 = .096$ . However, boys

did not differ significantly between conditions,  $F(1, 55) = 4.41, p = .04$ , partial  $\eta^2 = .074$ . See Figure 3.2 and Table 3.7.

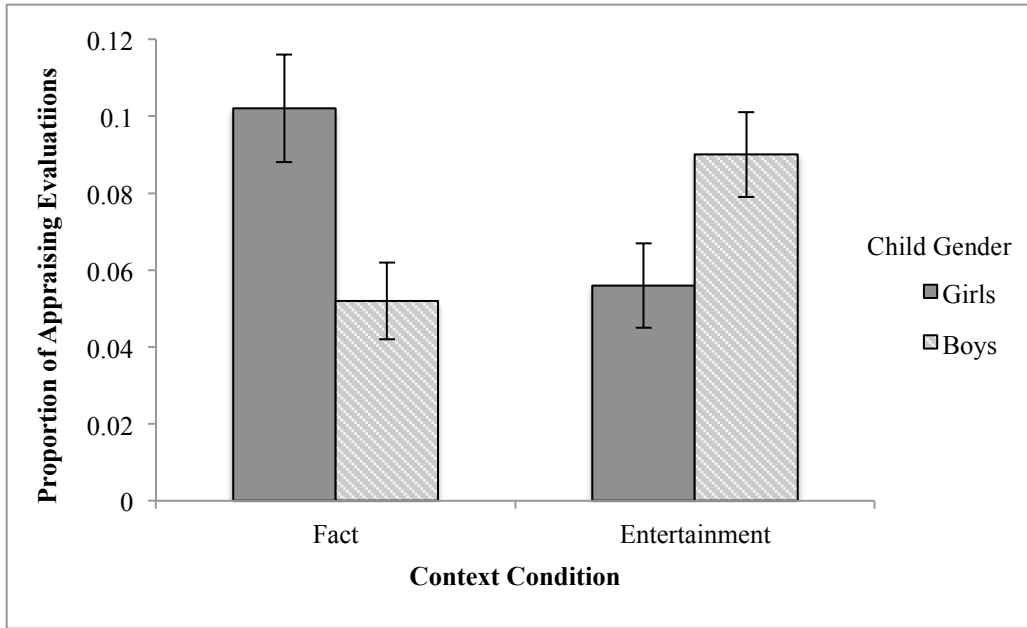


Figure 3.2. Subsample’s simple main effects of appraising evaluations on context condition by child gender.

Table 3.7

*ANCOVA Results and Descriptive Statistics for Proportion of Appraising Evaluations Used by Context Condition and Child Gender*

Context Condition	Proportion of Appraising Evaluations <sup>a</sup>	
	Girls	Boys
Fact	0.10 (.014)	.054 (.010)
Entertainment	.055 (.011)	.086 (.011)

Variable	SS	df	F	p	$\eta_p^2$
Condition	.001	1	0.27	.60	.005
Child Gender	.001	1	0.43	.52	.008
EVT-2 Scores	$2.07e^{-5}$	1	0.01	.92	<.001
Child Age	.005	1	2.60	.11	.045
Condition × Gender	.021	1	10.36	.002**	.158
Error	.110	55			

a. Data represent means, standard errors in parentheses.

† $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Analysis of covariance for affirming evaluation proportions.** A separate two-by-two ANCOVA was conducted to examine the effects of context condition and child gender specifically on the proportion of affirming evaluations used by caretakers throughout the parent-child interview, controlling for child age and EVT-2 normative scores. There were no main effects of gender,  $p = .54$ , or context condition,  $p = .92$ , on the proportion of affirming evaluations used. However, there was a statistically significant interaction between context condition and child gender,  $F(1, 55) = 11.05, p = .002$ , partial  $\eta^2 = .167$ . See Figure 3.3.

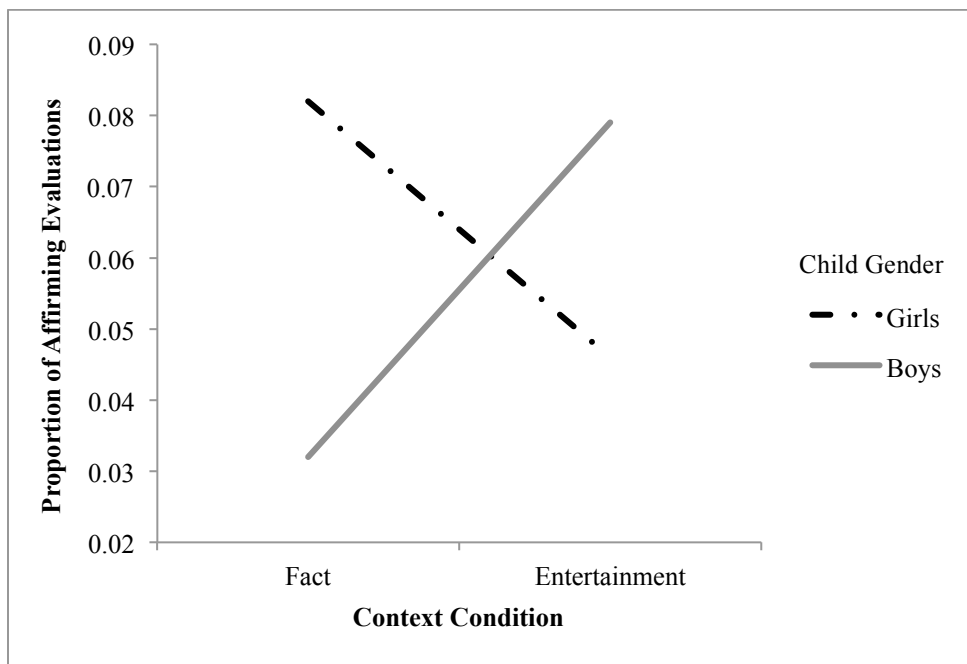


Figure 3.3. Subsample’s proportion of affirming evaluations on context condition by child gender.

Therefore, an analysis of simple main effects for affirming evaluations was performed with statistical significance receiving a Bonferroni adjustment and being accepted at the  $p < .025$  level. There was a statistically significant difference in the mean proportion of affirming evaluations used between girls ( $M = .082$ ) and boys ( $M = .036$ ) in the fact condition,  $F(1,55) = 7.07, p = .01$ , partial  $\eta^2 = .114$ . In contrast, there was no difference in the mean proportion of

affirming evaluations used between girls ( $M = .042$ ) and boys ( $M = .074$ ) in the entertainment condition,  $F(1, 55) = 4.63, p = .048$ , partial  $\eta^2 = .069$ . There was a marginal difference between conditions for girls, with girls in the fact condition receiving significantly more appraising evaluations relative to girls in the entertainment condition,  $F(1, 55) = 4.86, p = .032$ , partial  $\eta^2 = .081$ . Boys significantly differed between conditions, with boys in the entertainment condition receiving significantly more affirming evaluations relative to boys in the fact condition,  $F(1, 55) = 6.33, p = .015$ , partial  $\eta^2 = .103$ . See Figure 3.4 and Table 3.8.

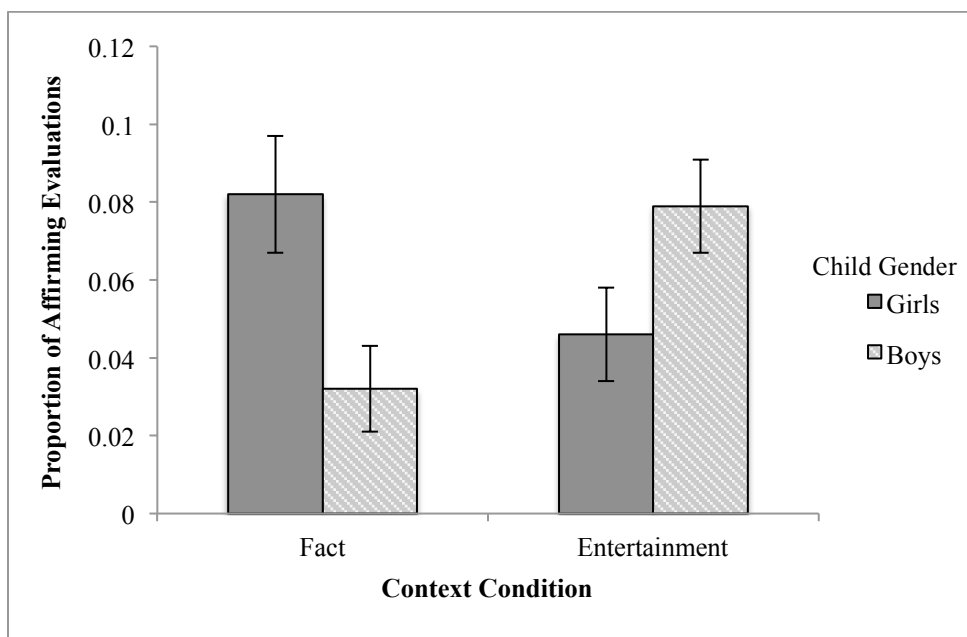


Figure 3.4. Subsample's simple main effects of affirming evaluations on context condition by child gender.

Table 3.8

*ANCOVA Results and Descriptive Statistics for Proportion of Affirming Evaluations Used by Context Condition and Child Gender*

Context Condition	Proportion of Affirming Evaluations <sup>a</sup>	
	Girls	Boys
Fact	.082 (.014)	.036 (.010)
Entertainment	.042 (.011)	.074 (.011)

<i>Variable</i>	<i>SS</i>	<i>df</i>	<i>F</i>	<i>p</i>	$\eta_p^2$
Condition	1.88e <sup>-5</sup>	1	0.01	.92	<.001
Child Gender	.001	1	0.38	.54	.007
EVT-2 Scores	.003	1	1.34	.25	.024
Child Age	.011	1	5.80	.019*	.095
Condition × Gender	.022	1	11.05	.002**	.167
Error	.109	55			

a. Data represent means, standard errors in parentheses.

† $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Analysis of covariance for negating evaluation proportions.** A separate two-by-two ANCOVA was conducted to examine the effects of context condition and child gender specifically on the proportion of negating evaluations used by caretakers throughout the parent-child interview, controlling for child age and EVT-2 normative scores. There was no main effect of condition,  $p = .43$ , or gender,  $p = .93$ , and no interaction effect,  $p = .88$ . See Table 3.9.

**Analysis of covariance for neutral evaluation proportions.** A final two-by-two ANCOVA was conducted to examine the effects of context condition and child gender on the proportion of neutral evaluations used by caretakers throughout the parent-child interview, controlling for child age and EVT-2 normative scores. There was no main effect of condition,  $p = .21$ , or gender,  $p = .86$ , and no interaction effect,  $p = .87$ . See Table 3.10.

Table 3.9

*ANCOVA Results and Descriptive Statistics for Proportion of Negating Evaluations Used by Context Condition and Child Gender*

Context Condition	Proportion of Negating Evaluations <sup>a</sup>					
	Girls	Boys				
Fact	.018 (.008)	.018 (.006)				
Entertainment	.014 (.006)	.012 (.006)				
<i>Variable</i>	<i>SS</i>	<i>df</i>	<i>F</i>	<i>p</i>	<i>η<sub>p</sub><sup>2</sup></i>	
Condition	<.001	1	0.62	.43	.011	
Child Gender	4.07e <sup>-6</sup>	1	0.01	.93	<.001	
EVT-2 Scores	.003	1	5.39	.02*	.089	
Child Age	.001	1	2.10	.15	.037	
Condition × Gender	1.24e <sup>-5</sup>	1	0.02	.88	<.001	
Error	.032	55				

a. Data represent means, standard errors in parentheses.

†*p* < .10, \**p* < .05, \*\**p* < .01, \*\*\**p* < .001

Table 3.10

*ANCOVA Results and Descriptive Statistics for Proportion of Neutral Evaluations Used by Context Condition and Child Gender*

Context Condition	Proportion of Negating Evaluations <sup>a</sup>					
	Girls	Boys				
Fact	.338 (.042)	.338 (.030)				
Entertainment	.287 (.033)	.299 (.032)				
<i>Variable</i>	<i>SS</i>	<i>df</i>	<i>F</i>	<i>p</i>	<i>η<sub>p</sub><sup>2</sup></i>	
Condition	.027	1	1.63	.21	.029	
Child Gender	.001	1	0.03	.86	.001	
EVT-2 Scores	.005	1	0.28	.60	.005	
Child Age	.019	1	1.11	.30	.020	
Condition × Gender	<.001	1	.03	.87	<.001	
Error	.927	55				

a. Data represent means, standard errors in parentheses.

†*p* < .10, \**p* < .05, \*\**p* < .01, \*\*\**p* < .001

## CHAPTER FIVE: GENERAL DISCUSSION

Countless cultures, beliefs, and traditions have been carried across generations and eras thanks to the practice of parent-child reminiscing. For decades, researchers have strived to understand and disentangle the various characteristics and outcomes of this practice. More recently, however, the focus has shifted from not just understanding what parents say to their children, but also how and why they say what they do. The present study aimed to expand this literature. Specifically, the study sought to understand how parents modify their use of evaluations based on child gender and conversation goal. The literature frequently conflates evaluations that specifically affirm (“Yes, that’s right!”) with evaluations that simply encourage without providing implications about accuracy (“Uh-huh”). However, these two functions were teased apart in the present study and examined in relation to accuracy dynamic and child gender.

The first aim of the present study was to examine whether caregivers altered their use of appraising evaluations when discussing an event based on recall context and child gender. An ordinal regression of appraising evaluations revealed a marginally significant interaction between context condition and child gender. When affirming and negating evaluations were analyzed separately, the results seemed to suggest that affirming evaluations accounted for the majority of this marginal interaction.

Further analyses with our subsample revealed a similar, but more nuanced pattern that allowed us to explore our four specific hypotheses, all of which were supported. We first hypothesized that caregivers would use more appraising evaluations with girls in the fact condition, relative to boys. We believed that in the high accuracy demand fact condition, caregivers would want to appraise any “fact-sounding” information in an effort to scaffold their child’s recount in a truthful direction and signal to their child the importance of accuracy.

However, this requires the child to first provide “fact-sounding” information for the caregiver to appraise. Given that girls inherently provide more detailed and specific narratives relative to boys, we believed that girls would present their caregivers with more opportunities to use appraising evaluations relative to boys. And given the high accuracy demand of the condition, caregivers would oblige. This hypothesis was supported by our subsample analyses, with girls receiving more appraising evaluations relative to boys in the fact condition.

Next, we hypothesized that caregivers would use the same amount of appraising evaluations with girls in the entertainment condition, relative to boys. In the low accuracy demand entertainment condition, caregivers would have little incentive to specifically appraise their child’s recount. Instead, their priority would be on simply engaging in a fun conversation. As such, we did not expect parents to differ their use of appraising evaluations between genders in the entertainment condition, a hypothesis that was also supported by our subsample analyses.

Third, we hypothesized that caregivers would use the same amount of appraising evaluations with boys across both conditions. As mentioned, caregivers have little incentive to use appraising evaluations when the goal of the conversation is not to gather facts. As such, caregivers would be unlikely to use appraising evaluations in the entertainment condition. While parents may experience an increased incentive to use appraising evaluations in the fact conditions, boys’ tendencies to provide vague and simplistic descriptions of past events may have provide parents with little opportunity to do so. Therefore, we did not expect caregivers to differ in their use of appraising evaluations with boys across conditions, a finding reflected in our subsample analyses.

Finally, we hypothesized that caregivers would use fewer appraising evaluations with girls in the entertainment condition relative to the fact condition. Again, there is little incentive



to use appraising evaluations with a low accuracy demand, so girls, like boys, would be unlikely to receive appraising evaluations in the entertainment condition. Unlike boys, however, girls tend to provide specific and detailed narratives with very little prompting regardless of accuracy demand. As a result, they may have provided their parents with more elaborative and complete recounts of the play activity regardless of condition. While these “factual sounding” narratives have little currency when the goal of the conversation is entertainment, they provide parents with increased opportunities to evaluate when the goal is to gather facts. As such, we hypothesized, and our subsample data confirmed, that girls received fewer appraising evaluations in the entertainment condition relative to the fact condition.

The second aim of the present study was to examine whether child gender and recall context impacted caregivers’ use of neutral, or engaging, evaluations when reminiscing about an unshared experience. Specifically, we hypothesized that caregivers would use more neutral evaluations with boys, regardless of accuracy demand, relative to girls. As mentioned, boys tend to be less forthcoming than girls when reminiscing. As such, parents may want to use these engaging evaluations with boys across all contexts, in an effort to keep them engaged in the conversation. This hypothesis was not supported by our data, as we found no main effects or interactions in the use of neutral evaluations.

There are a number of interpretations that can be gleaned from these findings. First, it appears that, as we expected, caregivers used neutral (engaging) evaluations and appraising evaluations quite differently. While caregivers seemed to moderate their use of appraising evaluations by child gender and conversation context condition, neutral evaluations appeared impervious to the influence of these variables. Instead, neutral evaluations seemed to be used quite consistently across context condition and child gender. This difference is striking given

that the literature frequently combines neutral, engaging evaluations, and positive, affirming evaluations under the label “positive evaluations” (Cleveland & Reese, 2005; Reese & Brown, 2000; Reese et al., 1993). However, these findings corroborate our belief that neutral evaluations may serve a unique function relative to appraising evaluations.

Our data also suggest that child gender is an important factor to consider when discussing and researching reminiscing behaviors. Gryzman and Hudson (2013) suggest in their review of the topic that many researchers fail to consider and/or report gender effects in the reminiscing literature. This is troublesome in light of the present results, which suggest certain narrative strategies may vary between genders. As a result, researchers who fail to take child gender into account may miss unique interactions. For instance, it is worth noting that we found no significant main effects in our results. Had we failed to consider the impact of gender on our behaviors of interest, we may have concluded null effects of context condition, as Cleveland and colleagues (2007) did in their reminiscing study. Of course, there is no way of knowing, in this specific study and others, whether gender effects were considered and omitted due to non-significant results or not considered all together; many authors do not report either way. However, the present results seem to suggest this oversight may underestimate the nuanced nature of reminiscing research, as it seems child gender can exhibit unique and powerful effects on narrative characteristics and reminiscing behaviors.

While these general findings align with our hypothesized model, it is important to note that other findings contradict our hypotheses. For instance, we failed to support our hypothesis that caregivers use more engaging evaluations with boys relative to girls. Based on the present data, it is difficult to parse out why exactly this may be the case. However, we offer a few speculations. First, it seems possible that these evaluations function more generally than

characterized in our model. Perhaps caregivers use neutral evaluations quite frequently and indiscriminately, regardless of the perceived level of engagement. Relatedly, it's possible that neutral evaluations serve a secondary function in addition to engagement. For instance, it has been suggested that these types of utterances can be used not only to encourage the conversation forward, but also simply as a conversation marker to indicate the speaker can keep talking (Lambertz, 2011; McCarthy, 2003). From that perspective, caregivers may wish to provide these tokens at an equivalent frequency, regardless of child engagement. As a result, any effects driven by engagement may have been washed out. Finally, there is also possible that there were simply no gender differences associated with child engagement in our sample. While such differences are suggested by the literature, it is unclear from the present data whether there was a true difference in engagement between genders.

In addition, it is important to note that our appraising findings were driven almost exclusively by the use of affirming evaluations. While we did not include any specific hypotheses about negating or affirming evaluations, our model would lead us to believe that caregivers would exhibit an increased tendency to negate or correct their child's recall when faced with a high accuracy demand. Yet, we found no such effect, with parents in both conditions providing very few negating evaluations relative to the other evaluations and overall conversation turns. However, this finding is not necessarily unexpected when considering experimental demand characteristics. Parents in the present study knew their dialogue was being recorded and, as a result, may have hesitated to act critically or negatively towards their child. As such, parents may have limited their use of negating evaluations and used them less frequently during the observed interview than they might during a similar, unobserved conversation.

Research also suggests that children tend to display a truth bias, or a tendency to recount accurate information when possible (Kulkofsky et al., 2011). As a result, children in the experiment may have offered few seemingly inaccurate statements for parents to negate. This may be especially true in the present paradigm, considering that there was no extended delay between the child experiencing the event and recalling the event, thereby limiting the inclusion of misinformation due to memory decay.

### **Limitations and Future Directions**

The limitations and future directions of the present study should also be acknowledged. For instance, it is important to note that many of presented interpretations are speculative based on the present data. While the current findings do seem to indicate that neutral evaluations are used differently relative to appraising evaluations, the present data do not allow us to fully understand how or why they differ. For example, we currently have no measure to suggest that parents were, for instance, specifically using neutral evaluations to engage their child. As such, future research should aim to quantitatively substantiate these underlying assumptions and rule out alternative explanations.

Likewise, future research should strive to systematically examine the coding schemes that are commonly used to measure evaluations in the literature. While many reminiscing studies explore the same narrative characteristics, such as elaborations, repetition, and evaluations, the specific definitions used for these terms or the way they are operationalized vary. As a result, it is difficult to collectively interpret findings in the field and form a nuanced consensus. As highlighted in the present data, constructs that are commonly conflated, such as affirming and neutral evaluations, may operate differentially depending on the phenomenon of interest. As

such, it is important for the field to develop specific and consistent definitions for reminiscing terms.

Finally, future research should not only make an effort to reconsider the impact of gender on child development, but also consider exploring expanded interpretations of gender. Within the scientific literature, the term “gender” or “gender identity” is frequently used to describe biological sex. However, it is important to note that these two terms are actually quite distinct in meaning and construct. Gender identity is a fluid and multi-faceted concept, constructed by a multitude of internal and external perceptions, pressures, stereotypes, and behaviors; biological sex is a reference to a physiological construct. The two labels, although frequently coalesced by society, are quite different in meaning and should not be used interchangeably.

Rather, terminology should accurately reflect the goal and conceptualization of the relevant research. For instance, if a researcher is interested in examining how a parent interacts with their child based on the child’s gender, some nuances may be lost if researchers define a child’s gender based on biological sex alone. Instead, it may be important to obtain a measure of how a parent *perceives* their child’s specific gender identity. Likewise, it could also be important to gather a measure of how the parent perceives the fluidity of gender identities and/or gender norms. These subjective measures may prove more relevant than biological sex when considering measures of parent behavior. Research on gender effects should also be open to adopting a continuous rather than dichotomous rating of gender. Again, this approach may allow researchers to capture more incremental gender effects that may be missed when gender is defined dichotomously.

## CONCLUDING REMARKS

The present study examined how caregiver-child dyads discussed an event experienced only by the child. Caregivers were told to focus on either gathering facts or entertaining during this conversation, as a way of moderating the accuracy demand of the conversation. The conversations were transcribed and coded to measure how often parents used evaluations. The valence of these evaluations (affirming, negating, or neutral) was considered from a functional perspective, as was child gender and the conversation context. We found that caregivers used appraising evaluations (negating and affirming evaluations) differentially relative to neutral evaluations. In addition, we found that conversation context and child gender interacted when considering appraising evaluations, such that caregivers used more appraising evaluations with girls in the fact condition, and similar appraising evaluations with girls and boys in the entertainment condition.

In conclusion, the present study provides a tentative step towards a more complete understanding of parent-child reminiscing. Specifically, the present results offer preliminary support for the proposed theoretical evaluation model, which differentiates between engaging feedback and appraising feedback and emphasizes the impact of child gender on reminiscing behaviors. If brought to fruition through future work and replication, this theory has the potential to make a lasting impact on the study of autobiographical memory and developmental psychology. Although these results are preliminary, we hope they will encourage further thought and exploration on the present topic, as it has potential applications within many fields, including eyewitness testimony, language development, gender studies, and cognitive development.

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## APPENDIX A

### Fact and Entertainment Condition Scripts for Caregiver Participant

#### Fact Condition:

“Your child will be playing the role of a detective and will be told that the stuffed animal was kidnapped and it will be her/his job to solve the case. When [child’s name] comes back to this room, it’s very important that you find out exactly what happened during the detective activity including gathering as much information as possible that might be useful for solving the case. Please ask your child if she or he remembers who kidnapped the stuffed animal. We are particularly interested in children’s memory for this part of the event.”

#### Entertainment Condition:

“Your child will be asked to pretend to play hide and seek with the stuffed animal and to try and find where it is hiding. This is meant to be a fun and silly game for children. When [child’s name] comes back to this room, try and get her/him to tell you what happened in a fun and entertaining way. Please ask your child if she or he remembers who helped the stuffed animal find it’s hiding place. We are particularly interested in children’s memory for this part of the event.”

## APPENDIX B

### Fact and Entertainment Condition Scripts for Child Participants

#### Fact Condition:

“Ok, [child name] in this activity it will be your job to be a detective. A stuffed animal has been kidnapped! Let’s look in this room for clues about where the stuffed animal was taken.”

*Guide the child to find the hidden clues one by one in order, starting by the door to the room, until they find the locked cabinet where the animal is hidden. Let the child use the key to unlock the cabinet.*

“Good work, detective! You found the kidnapped animal! Let’s put him back in his basket. Here’s an animal sticker for doing such a good job.”

#### Entertainment Condition:

“Ok, [child name] a stuffed animal wants to play a game with you! Someone helped the stuffed animal find a really good hiding place in this room, but I bet we can figure out where the stuffed animal is hiding.”

*Guide the child to find the hidden clues one by one in order, starting by the door to the room, until they find the locked cabinet where the animal is hidden. Let the child use the key to unlock the cabinet.*

“Good work! You found the animal’s hiding place! Let’s put him back in his basket. Here’s an animal sticker for doing such a good job.”

## APPENDIX C

### Interviewer-Child Interview Follow Up Questions

#### Fact Condition:

1. "Did [RA2 name] have to move a table to find the stuffed elephant?"
2. "Where was the stuffed elephant hidden?"
3. "What color ribbon was the stuffed elephant wearing?"
4. "Did you see Dan kidnap the stuffed elephant?"
5. "Did you see another stuffed animal in the room?"
6. "[RA2 name] used a magnifying glass?"
7. "Was anything hidden under a book?"
8. "Did you see the stuffed elephant's footprints?"
9. "Dan kidnaped the stuffed elephant, didn't he?"
10. "There was a second stuffed animal in the room?"
11. "Was anything hidden under the piece of paper?"
12. "[RA2 name] was wearing a special hat, right?"

#### Entertainment Condition:

1. "Did [RA2 name] have to move a table to find the stuffed elephant?"
2. "Where was the stuffed elephant hidden?"
3. "What color ribbon was the stuffed elephant wearing?"
4. "Did you see Dan help the stuffed elephant hide?"
5. "Did you see another stuffed animal in the room?"
6. "[RA2 name] used a magnifying glass?"
7. "Was anything hidden under a book?"
8. "Did you see the elephant's footprints?"
9. "Dan helped the stuffed elephant hide, didn't he?"
10. "There was a second stuffed elephant in the room?"
11. "Was anything hidden under the piece of paper?"
12. "[RA2 name] was wearing a special hat, right?"