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Children's engagement and competence in personal recollection: Effects of parents' reminiscing goals

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Abstract

Parents' goal orientations in parent–child reminiscing were examined in this study, where 28 preschoolers (mean age = 46 months) experienced a standardized event. Dyads discussed the event that evening, with parents randomly assigned to either an "outcome-oriented" or a "process-oriented" condition. Outcome-oriented parents, who were told that children subsequently would be tested on event-related recall, were more controlling in these conversations compared with process-oriented parents, who were told that children's personal perspective would be assessed. Parents did not differ in their provision of structure. Children were interviewed 2 weeks later. Autonomy support in the parent–child conversation predicted children's engagement in the interview. Parental structure predicted children's recall of details and the coherence of their memories. Effects of parental reminiscing styles for children's memory and motivation to reminisce are discussed.

Keywords: Autobiographical memory; Parent–child reminiscing; Reminiscing style; Parenting goals; Parental structure; Autonomy support; Engagement

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Introduction

Autobiographical memories are the specific and long-lasting memories that are often critical in constructing one's life story and sense of self (Brewer, 1986; Neisser, 1988; Nelson, 1993). Such memories are creative constructions that are mediated by social interaction. The conversations children have with parents about personally experienced past events are an important source of autobiographical memory.

Parental reminiscing style

Researchers have described parents as being either high or low elaborative in past event conversations with children (Fivush, 1994; Fivush & Fromhoff, 1988; McCabe & Peterson, 1991; Reese & Fivush, 1993; Reese, Haden, & Fivush, 1993). High-elaborative parents structure memory through the use of open-ended questions, usually "wh" questions such as "what," "when," and "where." These parents support children in expressing their personal perspectives and are inclined to follow children's agendas in reminiscing. Low-elaborative parents tend to ask questions until obtaining desired responses, and they discount children's points of view and agendas when these do not accord with their own.

It has been assumed that the high- and low-elaborative styles indicate divergent reminiscing goals and orientations toward reminiscing. Indeed, Engel (1995) distinguished not between a high-elaborative style and low-elaborative style but rather between a reminiscing style and a practical remembering style, notable for distinct overriding goals. Reminiscing parents appear to have the goal of getting children to contribute actively, such that reminiscing "seem[s] to serve a purpose in and of itself. It's as if [parents] were saying, 'Let's talk about the past, let's reminisce together"' (p. 141). These parents seem to be focused on the process of children's active memory construction. Practical remembering parents appear to have the goal of getting children to remember something specific for a particular reason; "in effect, the message to the child is: The past is useful for clarifying or adding to the present" (p. 142). These parents seem to be focused on children's accurate recall as an outcome of these conversations.

Children of high-elaborative parents demonstrate fuller memories in conversation with parents and researchers, both concurrently (Fivush & Fromhoff, 1988; Hudson, 1993; Leichtman, Pillemer, Wang, Koreishi, & Han, 2000; Reese & Fivush, 1993) and longitudinally (McCabe & Peterson, 1991; Reese et al., 1993). Furthermore, this relation between parental reminiscing style and children's emergent memory appears to be causal. In an intervention with low-income mothers and their preschool children, Peterson, Jesso, and McCabe (1999) trained mothers to ask open-ended elaborative questions, especially about context (when and where), and to follow and confirm children's utterances. Two years later, intervention children produced more memories with a researcher than did children in a control group. The intervention children's memories were also longer and included greater detail and context-setting references to when and where. Boland, Haden, and Ornstein (2003) subsequently concluded that the strongest impact of the elaborative style is in terms of the descriptive detail children recall, although it is worth noting that the researchers' parent intervention targeted talk *during* a to-be-remembered event rather than postevent reminiscing.

Few studies have examined parental reminiscing styles and children's memory for controlled events. Parents in the past event reminiscing style studies have been asked to discuss naturally occurring past events. Because these events are undocumented, it has been impossible to speak to issues of veridicality or to the influence of event-related talk

prior to research participation. Misinformation studies (e.g., Schwartz-Kenney & Goodman, 1999) have examined children's memory for experimental events to determine susceptibility to misleading postevent information. However, only McGuigan and Salmon (2004) examined reminiscing style and children's memory for a documented event, and this study explored effects of experimenters' talk rather than parents' talk with children. The current study is the first to combine experimental and naturalistic paradigms by examining parents' reminiscing styles and children's memory for a documented event.

Mechanism of reminiscing style

Another limitation of the extant research is that recent experimental studies have conflated the various elements that comprise the elaborative style. These include use of open-ended elaborative questions, provision of information that helps children to get on board in reminiscing, confirmation of children's conversational contributions, and a willingness to follow children's personal perspectives and conversational leads. Because previous studies that have manipulated elaborative style have included multiple facets of the style, the contributions of particular components have not yet been determined. For example, both Peterson et al. (1999) and Boland et al. (2003) coached mothers in using open-ended elaborative questions but also encouraged mothers to follow children's perspectives and conversational leads. It is important to delineate the aspects of the style that account for its positive effects. Accordingly, in this study we focused on a particular aspect of parents' elaborative style. Specifically, the current study focused on the parental goal of facilitating children's participation and interest in these reminiscing conversations by taking children's perspectives and following their leads. In so doing, we used the framework of self-determination theory as a way of conceptualizing differential effects of the elaborative style.

Self-determination theory

Self-determination theory (cf. Deci & Ryan, 1985; Grolnick, 2003) asserts that autonomy, competence, and relatedness are universal and basic human needs. The theory may permit an understanding of how parental reminiscing styles affect children's memory. Parents help children to realize the three needs by fostering (a) a sense of autonomy and intrinsic motivation through supporting children's personal volition and choice, (b) a sense of competence through providing levels of structure that are situationally appropriate, and (c) a sense of relatedness through interacting with children in a warm and affectionate manner. These needs are relatively independent; for example, parents may support children's autonomy without supporting their competence.

Autonomy support

When parents exert pressure on children to think or behave in a particular way, children cease to experience autonomy (Deci & Ryan, 1987). This, in turn, has negative effects on intrinsic motivation for, and engagement in, activities. In contrast, when parents are autonomy supportive, they take children's perspectives and encourage children to pursue personal interests, thereby helping children to maintain intrinsic motivation and engagement. Parents who do not take children's perspectives and who encourage children to pursue the parents' interests rather than the children's own (i.e., controlling parents) are facilitating extrinsic

motivation and a lack of engagement. The extent to which parents are controlling or autonomy supporting may be attributable, in part, to their goal orientation. For example, in an experimental study with two conditions, Grolnick, Gurland, DeCourcey, and Jacob (2002) invited mothers to participate with children in several activities. Mothers in one group were induced to focus on children's later independent performance; these parents were told that children would be tested on tasks similar to those they undertook with their mothers and that parents are responsible for children's performance. A second group of mothers were focused on process; instructions did not call attention to performance standards, and parental responsibility for children's performance was not emphasized. Parents who focused on children "getting it right" tended to be controlling and discouraging of children's autonomy. Consequently, children were less interested in related activities.

Structure

Structure can be conceptualized as the provision of tools that are necessary for successful task completion. This may include guidelines, interventions, and regularities that children need to feel competent. Children of parents who provide appropriate levels of structure have a better understanding of how to obtain success and avoid failure than do children of parents who provide less appropriate structure (Grolnick & Ryan, 1989).

Applying self-determination theory to parent–child reminiscing

Autonomy support

Parents who are autonomy supportive in reminiscing are expected to have children who are more intrinsically motivated to engage in reminiscing. Children of controlling parents are expected to be less intrinsically motivated to engage in reminiscing. In keeping with the relative independence of the needs proposed by self-determination theory, autonomy is predicted to affect children's motivation to reminisce rather than the quality of their memory. In this respect, it is worth noting that the instructions given to mothers in the correlational studies have varied. As a result, it is unclear exactly what goals mothers have been given in these studies. For example, Cleveland and Reese (2005) told mothers that they were interested in the information young children recall about past events, and they instructed mothers to talk about past events in the manner in which they felt most comfortable. Haden, Haine, and Fivush (1997) told mothers that they were interested in how much and what kinds of information children remember about past experiences, and they asked mothers to discuss past events with children "in a natural and spontaneous way" (p. 298). Haden (1998) instructed mothers "to elicit [their] child's memory of the selected events as [they] normally would talk about the past" (p. 102). Finally, McCabe and Peterson (1991) asked parents to record "stories about personal experience, about real life events that have happened in the past," and to do so "like you ordinarily behave when you ask your child to talk about past events" (p. 226).

Structure

Reminiscing remains difficult for young children to undertake alone until the school years (Fivush, Haden, & Adam, 1995). Parents who are elaborative with children

during joint reminiscing are giving children the necessary structure for reminiscing that is predicted to affect children's memory competence. Parents who are primarily repetitive are not giving children the necessary tools for participating in reminiscing. As noted previously, the training studies have conflated the provision of elaborations with parents' willingness to follow children's personal perspectives and conversational leads.

Cleveland and Reese (2005) took a first step in separating the effects of autonomy support and elaborative structure by examining both dimensions in an observational study of mother–child reminiscing. In line with self-determination theory, autonomy support and elaborative structure emerged as independent dimensions of parents' styles. The data revealed positive links between mothers' provisions of autonomy support and elaborative structure and children's memory during the early preschool years. By 65 months, children whose mothers provided high structure (in the form of open-ended elaborative questions), compared with those who provided low structure, offered more memory regardless of how autonomy supportive the mothers were. Although these findings are noteworthy, the effects of elaborative structure and autonomy support are yet to be verified experimentally. Moreover, Cleveland and Reese did not include a measure of children's engagement and therefore were unable to directly test the prediction that autonomy support would mainly affect children's interest in reminiscing.

The current study

This study examined the effects of goal orientation on parents' provision of structure and autonomy support in parent–child reminiscing and the effect of structure and autonomy support on children's subsequent memory and engagement with an experimenter. The experimental manipulation, which occurred following a standardized laboratory event, involved assigning parents to either a "process-oriented" or an "outcome-oriented" condition. Process-oriented parents were told that we were interested in children's perspectives and would be talking to their children about the laboratory event in a follow-up interview. Outcome-oriented parents were told that we would be testing their children for the quantity and veridicality of their memory for the laboratory event. We predicted that process-oriented parents would provide more autonomy support in follow-up conversations about the laboratory event that evening, whereas outcome-oriented parents would demonstrate more control in an effort to help children get the memory "right." We also predicted that parents would provide comparable structure across conditions.

Experimenter–child interviews took place 2 weeks after dyads' laboratory visit. Children's recall was coded for the content, accuracy, and temporal and thematic coherence of their memory narratives. Children's engagement in the interview was also coded. We predicted a main effect of condition, with children in the process-oriented condition demonstrating elevated levels of engagement compared with children in the outcome-oriented condition. Regardless of condition, we expected that children whose parents provided high elaborative structure in the laboratory event conversation would provide more detailed memory than would those whose parents did not provide high elaborative structure (cf. Boland et al., 2003; Cleveland & Reese, 2005). We also predicted that these children would provide more coherent memory

narratives in the subsequent interviews (cf. Peterson et al., 1999). Finally, we predicted that, irrespective of condition, parents who were more autonomy supportive in the laboratory event conversation would have children who demonstrated greater engagement in the memory interview. We predicted that this would be independent of parents' provision of structure.

Method

Participants

Participants were 28 preschoolers with their primary caregivers in a university child study center and at a home visit. Dyads were recruited from preschools, day care facilities, and playgroups in middle-class communities in a New England city. Children's mean age was 46 months at the first session (range = 34–59). Of the 28 children, 17 were boys and 11 were girls, with 18 of the participants being first-born children. Among the parents, 12 worked outside the home, 16 had bachelor's degrees, and 9 had postgraduate degrees. In terms of race, 24 children were European American, 1 child was African American, 2 children were biracial Hispanic, and 1 child had an Asian American parent. English was the primary language spoken in all of the homes.

Procedure

After obtaining parental consent and establishing rapport, dyads were escorted to a quiet room in the laboratory, where they discussed a shared past event. This conversation was tape-recorded. Children then participated in a language assessment while parents completed a questionnaire in an adjoining room. Subsequently, children were invited to a "pretend zoo" (McGuigan & Salmon, 2004) by an assistant experimenter who had been individually trained in the protocol by the primary experimenter. The pretend zoo event was composed of six animals, each with three or four activities aimed at achieving a goal, with a total of 27 features that could be recalled. (For example, each child becomes the zookeeper by donning the zookeeper outfit. The child and the assistant experimenter visit the gorilla and help to make the gorilla clean by blowing bubbles on it, brushing its fur, polishing its feet, and putting a necklace around its neck.) The overall goal of the event was to find the "lost" baby elephant. Children were guided through the zoo by the assistant experimenter, who used elaborative narration akin to McGuigan and Salmon's (2004) during event elaboration. Children were shown each activity before performing it on their own (e.g., blowing bubbles on the gorilla) or being assisted in doing so (e.g., putting on the zookeeper outfit). Parents observed but did not participate in the zoo, thereby facilitating event standardization across participants. The primary experimenter remained out of the room for the duration of the event. When the zoo event was complete, parents were given an audiocassette recorder and received the goal orientation manipulation and instructions about discussing the event with their children, who remained out of hearing range. The primary experimenter visited the dyads in their homes 2 weeks later and conducted the follow-up memory interviews. Children received small gifts at the conclusion of each session.

Measures

Baseline memory conversations

At the laboratory, parents were told, "The first thing we'd like you to do is to think of a one-time event that you and [the child] experienced together in the past, which you can talk about today. We'd like this to be a novel past event that took place on only one occasion and was of relatively short duration (so an event that took place within the span of 1 day). It also should be an event that does not already have a story line inherent to it, like the plot of a book or a movie." Parents were instructed to discuss these events in whatever way was most natural and comfortable for them; no time constraints were placed on the length of conversation. All dyads discussed positive events. Examples included going to the circus and a school trip to a farm. The experimenters remained out of the room for the duration of these conversations. Some dyads discussed more than one past event during this conversation. In cases of multiple past events, only the longest event was coded.

Zoo memory conversation

Before leaving the laboratory, parents were given a cassette recorder and received the goal orientation manipulation. The sense of having a goal was conveyed to all parents to ensure that process-oriented parents were no more likely than outcome-oriented parents to go off topic in the zoo conversation. Process-oriented parents were told, "People often have different perspectives on events, and it is possible that [the child's] perspective on the visit to the pretend zoo is in some ways different from yours. We are interested in [the child's] perspective, and I will be asking [the child] some questions about this event when I come to your house. I would like you to have a conversation with [the child] about the pretend zoo and see what [the child's] perspective is." Outcome-oriented parents were told, "We are interested in how much children remember about their experiences and how accurate their memories are. I will be testing [the child] on [his or her] memory for the visit to the pretend zoo when I come to your house to see what [he or she] remembers. I would like you to have a conversation with [the child] about the pretend zoo to get [him or her] ready for this test." All parents were told, "I would like you to tape-record this conversation, preferably at bedtime tonight. If it is not feasible to record the conversation at bedtime, you may do so in another quiet time and place this evening, preferably between dinner and bedtime." Two parents were not home on the evening of their visit to the laboratory, and so they recorded the zoo conversation the following afternoon.

Parents also kept a daily record of how often the pretend zoo was discussed over the 2-week period between the laboratory visit and the follow-up home interview.

Children's language

Children's language was assessed by the third edition of the Test of Early Language Development (TELD-3) (Hresko & Hammill, 1999). The TELD-3 is an untimed language assessment for children between 2 years 0 months and 7 years 11 months of age. It includes receptive and expressive language subtests, and it yields an overall spoken language score that was used as the final measure of children's language ($M = 101$, $SD = 17.79$, range = 61–137).

Memory interview

The primary experimenter visited dyads in their homes 2 weeks later ($M = 14$ days, $SD = 0.74$) and conducted the memory interview, which was audiotaped. This was a structured interview entailing a free recall phase followed by a directed recall phase. The experimenter first introduced the pretend zoo topic by telling the children, "I'd like you to tell me everything that happened when you went to visit the pretend zoo." Five sanctioned open-ended prompts were used to encourage children's maximal recall: "What else happened?"; "Tell me more about that"; "What else did you see at the zoo?"; "Anything else you can tell me about that?"; and "What else can you tell me about the zoo?" The experimenter repeated prompts when children did not respond. For example, if the experimenter asked "What else happened?" and children either did not respond or responded by changing the subject, the experimenter would repeat, "What else happened at the pretend zoo?" A t test revealed no difference in the number of prompts used across the two conditions, $t < 1$. When children appeared to be unable to provide more information, the directed recall phase of the interview began. All children were provided with six directed recall prompts corresponding to each of the activities in the pretend zoo. For example, children were told, "I heard that when children visit the pretend zoo, they visit a gorilla. Tell me what happened when you visited the gorilla at the pretend zoo."

Coding

The baseline conversations, zoo event conversations, and memory interviews were transcribed in full. Coding was performed from the transcripts.

Parental autonomy support

Parental autonomy support is defined as the encouragement of self-initiation and independent problem solving with the provision of choice and a minimal degree of control and power assertion (Ryan, Deci, & Grolnick, 1995). A coding scheme that had been developed and employed successfully by Cleveland and Reese (2005) was adapted for the current study to code for parental autonomy support in the baseline and zoo event conversations. All parental turns were coded for how functionally autonomy supportive or controlling they were in the context of the given conversation, such that no turn was considered in isolation from the forgoing conversation. A turn was considered to be highly autonomy supportive if it followed the child's conversational lead, whereas a low-autonomy support turn, or a controlling turn, was one that promoted the parent's own memories and conversational agenda. Specifically, the coding scheme (Appendix A) entails a 5-point scale ranging from *low autonomy support* to *high autonomy support*.

Two independent raters coded 25% of the baseline transcripts and 25% of the zoo event transcripts. Using a Shrout–Fleiss intraclass correlation (Shrout & Fleiss, 1979), the interrater reliabilities were $r = .95$ and $r = .91$, respectively. For both the baseline and zoo conversations, after calculating reliability, disagreements between coders were discussed and resolved. Each coder then coded half of the remaining baseline and zoo transcripts. Final measures of autonomy support per conversation were obtained by averaging the scores across all conversational turns.

Parental structure

Parental utterances were coded for structure in accordance with previously employed coding schemes that measure different types of elaborations and repetitions (cf. Haden, 1998). *Elaborations* were parental utterances containing new information and could be in the following forms: (a) open-ended questions (e.g., "What was your favorite part of the zoo?"), (b) yes/no questions (e.g., "Was there a beverage?"), and (c) statements (e.g., "You made a sun for the tiger"). *Repetitions* consisted of mothers' repetitions of their own prior utterances in the following forms: (a) open-ended repetitions, (b) yes/no repetitions, and (c) statement repetitions. We also coded for *confirmations*, in which mothers repeated and/or explicitly confirmed children's utterances (e.g., "And you were looking for the baby elephant, that's right!"), and *negations*, in which mothers explicitly or implicitly negated children's utterances (e.g., "That is not what happened. Tell me what happened"). Confirmations and negations, as structural provisions, were not conflated with autonomy support and control. Indeed, parents may be relatively controlling or autonomy supportive in how they deny children's memories. For example, as in the previous example, a parent may negate a child by saying, "That is not what happened. Tell me what happened"; without any follow-up, this does not help the child and is relatively controlling. Alternatively, a parent may negate a child by saying, "Was he a monkey or was he something else?"; this invites the child to reflect on his or her memory and is relatively neutral.

Two independent raters coded 25% of the baseline transcripts and 25% of the zoo event transcripts, with the remaining transcripts being divided equally between raters. The average reliabilities across all codes were 84 and 85%, respectively, with a Cohen's κ of .81 in both cases. Because confirmations and elaborations are conceptually related (cf. Reese & Fivush, 1993), as are negations and repetitions, these variables were collapsed into the two structural variables correspondingly termed *elaborative structure* (total elaborations + confirmations) and *repetitive structure* (total repetitions + negations) for each conversation; this also served to limit the number of structural variables.[1]

Coherence of children's memories

Children's memory narratives with the interviewer were coded for coherence in free recall according to a modified version of a coherence coding scheme with several dimensions (Baker-Ward et al., 2003). Memories were coded for temporal coherence according to a 5-point scale, with those at the low end including no information about temporal order and those at the high end showing a clear demarcation of the beginning, middle, and end. The memory narratives were also coded for thematic coherence, again according to a 5-point scale; those at the low end were substantially off topic, whereas those at the high end had well-integrated narrative components and included a resolution or an ending. Two independent raters coded 25% of the transcripts. Using Shrout–Fleiss intraclass correlations, the interrater reliabilities were $r = .97$ for temporal coherence and $r = .98$ for thematic coherence. The remaining transcripts were rated by one coder.

[1] Analyses were run on all of the structural variables, but the strongest pattern of correlations was for these two composite variables.

Children's engagement in the memory interview

Children's engagement in the free and directed recall phases of the interview were coded according to a 5-point scale. Children rated as low on engagement were those who would not talk about the zoo or for whom it was extremely difficult to elicit memory information. For example, although these children occasionally provided considerable recall by the interview's conclusion, they were difficult to get on task and/or to keep on task during the interview, often with lengthy intervals between utterances. At the other end of the scale were children who provided memory information spontaneously and eagerly and who seemed to be genuinely keen on talking about the zoo. Children's overall engagement was assessed by their engagement across both phases of the interview. Two independent raters coded 25% of the transcripts. Using a Shrout–Fleiss intraclass correlation, the interrater reliabilities were $r = .98$ for free recall and $r = .90$ for directed recall, with $r = .94$ for overall engagement. The remaining transcripts were rated by one coder.

Children's memory scoring

The coherence coding measured the narrative quality of children's memories. Tallies were also taken of how much information children recalled accurately. Children were credited with one item of information for actions, objects, and descriptors that were part of the zoo event. Specifically, children's memory provisions were scored for how many zoo animals they recalled, how many features they recalled out of a possible 27 (e.g., "We went to a zebra and he was *hungry for lunch*"), and how many details they recalled (e.g., "We had some *red* playdough"). The free and directed recall phases of the interviews were scored separately. When children repeated a previously recalled piece of information, they received credit only for the first mention (cf. McGuigan & Salmon, 2004). Children did not receive credit for incorrect information. Two independent raters coded 25% of the transcripts for an interrater reliability of 94%. Calculation of Cohen's κ resulted in .92 agreement.

Results

Preliminary analyses

One parent in the process-oriented condition failed to record a zoo event conversation; although a conversation was recorded, the dyad discussed another of the day's events and therefore was excluded from the analyses. Several of the structure variables were positively skewed. To adjust for skewness, a square root transformation was performed; transformed variables are used in all correlational analyses (Tabachnick & Fidell, 1989). Table 1 shows the means and ranges of all child and parent variables.

Unpaired t tests with condition as the grouping variable showed that the experimental groups were not significantly different from one another at baseline on age, $t < 1$ (process: $M = 45$ months, $SD = 6.67$; outcome: $M = 46$ months, $SD = 8.16$), or language scores, $t < 1$ (process: $M = 100$, $SD = 22.54$, range = 61–137; outcome: $M = 102$, $SD = 12.12$, range = 86–117), nor was there a difference in gender across the two groups, $\chi^2(1) = 1.29$, $p > .20$ (process: 6 girls and 8 boys; outcome: 5 girls and 9 boys). Parental autonomy in the baseline conversations also did not differ between groups, $t < 1$ (process: $M = 3.22$, $SD = 0.22$; outcome: $M = 3.23$, $SD = 0.21$), nor did elaborative structure, $t < 1$

Table 1
Means and ranges of child and parent variables

	M	*SD*	Range
Child variables			
Age (months)	46	7.35	34–59
TELD standard language score	101	17.79	61–137
Free recall			
Animals	2.93	1.92	0–5
Features	3.36	3.36	0–11
Details	0.14	0.59	0–3
Total	6.43	5.05	0–18
Directed recall			
Animals	0.29	0.81	0–4
Features	3.04	3.27	0–12
Details	0.07	0.26	0–1
Total	3.43	3.47	0–13
Coherence			
Temporal	0.96	1.14	0–4
Thematic	1.04	0.96	0–3
Engagement			
Free recall	1.71	1.63	0–4
Directed recall	1.50	1.55	0–4
Total	3.21	2.97	0–8
Parent variables			
Autonomy			
Baseline conversation	3.23	0.21	2.70–3.51
Zoo conversation	3.24	0.38	2.50–4.17
Elaborative structure			
Baseline conversation	56.93	46.82	6–178
Zoo conversation	35.81	23.25	5–86
Repetitive structure			
Baseline conversation	13.59	12.49	0–37
Zoo conversation	19.65	21.71	0–110

(process: $M = 59$, $SD = 50$; outcome: $M = 55$, $SD = 45$), or repetitive structure, $t < 1$ (process: $M = 14$, $SD = 14$; outcome: $M = 13$, $SD = 12$). Finally, the structural variables correlated across conversation type (baseline and zoo event): elaborative structure, $r = .53$, $p < .01$; repetitive structure, $r = .40$, $p < .05$.

Correlations were run between language and the child memory variables. There was a significant correlation between language and children's recall of animals, $r = .40$, $p < .05$, and a marginally significant correlation between language and children's total recall, $r = .37$, $p < .10$. Children's language did not correlate with their engagement in the interview or with the coherence of their memories (*r*s ranged from .08 to .33, *p*s $> .10$). Correlations were run between children's recall and their engagement in the memory interview; overall, children who were rated as more engaged tended to recall more (*r*s ranged from $-.13$, $p > .20$, to .70, $p < .01$, with 70% of the correlations being significant). Finally, correlations were also run between children's language and the parental variables of structure and autonomy support. There was a significant correlation between children's language

and parents' repetitive structure, $r = -.46$, $p < .05$, but none of the other parental variables was significantly correlated with children's language.

Correlations were run between the parental measures of structure and autonomy support in the baseline conversations. There was a marginally significant negative correlation between autonomy support and repetitive structure, $r = -.36$, $p < .10$. There was no correlation between autonomy and elaborative structure, $r = -.12$, $p > .20$.

Correlations were also run between the parental measures of structure and autonomy support in the zoo conversations. There was a significant negative correlation between autonomy support and elaborative structure, $r = -.44$, $p < .05$, and between autonomy support and repetitive structure, $r = -.50$, $p < .05$. Higher autonomy support was also associated with shorter conversational length, as assessed by the total number of parental turns, $r = -.51$, $p < .05$.

Parents in the outcome-oriented condition, as compared with parents in the process-oriented condition, reported talking slightly more frequently about the pretend zoo on the day it occurred, $t(25) = 1.83$, $p < .10$. However, there were no significant group differences on any other day or across the 2-week period between the pretend zoo visit and the experimenter interview.

Main analyses

Main analyses aimed first to ascertain the effect of experimental condition on parents' provision of elaborative structure and autonomy support in the zoo conversations. Following this, analyses were conducted to determine the effects of parental structure and autonomy support on children's memory in the experimenter–child interview.

Parents' structure and autonomy support

The first goal was to examine the effects of the experimental manipulation (outcome goal orientation vs. process goal orientation) on parents' provision of structure (elaborative or repetitive) and autonomy support in the parent–child zoo conversations. In all three analyses, we conducted condition (process-oriented vs. outcome-oriented) by time (baseline vs. zoo) repeated measures analyses of variance (ANOVAs) with condition as the between-participants factor and time of conversation as the within-participants factor.

Structure. For elaborative structure, there was no main effect of condition, $F < 1$, $\eta_p^2 = .01$. There was also no interaction of time and condition, $F < 1$, $\eta_p^2 = .01$. There was, however, a main effect of time, $F(1, 23) = 5.98$, $p < .05$, $\eta_p^2 = .20$, indicating that parents decreased their provision of elaborative structure from the baseline to the zoo event conversation.

For repetitive structure, there also was no main effect of condition, $F < 1$, $\eta_p^2 = .00$. In addition, there was no interaction of time and condition, $F < 1$, $\eta_p^2 = .00$. There was, however, a main effect of time, $F(1, 23) = 15.32$, $p < .01$, $\eta_p^2 = .39$, indicating that parents increased their provision of repetitive structure from the baseline to the zoo event conversation.

Autonomy support. For autonomy support, there was a significant main effect of condition, $F(1, 24) = 11.12$, $p < .01$, $\eta_p^2 = .31$ (process: $M = 3.34$, $SD = 0.05$; outcome: $M = 3.12$, $SD = 0.05$). There was not a main effect of time, $F < 1$, $\eta_p^2 = .01$. More important, there was a significant interaction of time and condition, indicating a change in autonomy support from baseline to laboratory event conversation as a function of condition, $F(1, 24) = 12.00$, $p < .01$, $\eta_p^2 = .32$. Follow-up t-tests, within condition, were run to

Table 2
Correlations between parental variables in zoo event conversation and children's memory in interview

	Elaborative structure	Repetitive structure	Autonomy support
Recall of details	.51**	.17	−.15
Recall of features	.24	−.10	−.16
Recall of animals	.15	−.23	−.02
Total recall	.28	−.14	−.13
Temporal coherence	.40*	−.03	−.10
Thematic coherence	.22	−.15	.12
Overall engagement	−.03	−.35†,a	.38*,b

[a] Became nonsignificant after controlling for children's language.
[b] Became marginally significant after controlling for children's language.
* $p < .05$.
** $p < .01$.
† $p < .10$.

isolate this interaction effect. There was a significant pre/post difference in the process-oriented condition, $t(12) = 3.31$, $p < .01$, indicating that parents became more autonomy supportive in the zoo conversation ($M = 3.49$) compared with baseline ($M = 3.20$). There was a marginally significant pre/post difference for parents in the outcome-oriented condition, $t(13) = 1.90$, $p < .10$, with these parents becoming somewhat less autonomy supportive in the zoo conversation ($M = 3.01$) compared with baseline ($M = 3.23$).

Children's memory and engagement

The second goal was to examine the effects of condition on children's memory and engagement. ANOVAs were run with condition as the between-participants factor to test for main effects of condition on children's memory and engagement. None of these was significant (for children's recall, Fs $\leqslant 1.96$; for children's engagement, Fs $\leqslant 0.95$).

Therefore, the analyses sought to explore individual differences in parental structure and autonomy support and children's memory and engagement in the experimenter–child interview. Correlations were run between parents' zoo conversation variables and children's memory interview variables (Table 2).[2] The majority of children's recall occurred during the free recall phase of the interview rather than during the directed recall phase; because of this, and to reduce the number of variables, analyses focus on children's recall during the free recall phase. Analyses of parental elaborative structure and the child memory variables revealed several significant correlations. Elaborative structure correlated positively with children's recall of details and with the temporal coherence of children's memory narratives. Elaborative structure was not correlated with children's engagement in the interviews. Because there were marginally significant correlations between children's language and their recall in the memory interview, language was partialled out in these individual differences analyses. Controlling for child language, the pattern of correlations remained the same, with elaborative structure significantly correlated both with children's recall of details and with the temporal coherence of their memories.

[2] Partial correlations were also run between autonomy support at baseline and children's memory and engagement in the interview, controlling for children's language. None of these was significant (rs ranged from −.04 to .11).

There were no significant correlations between parents' repetitive structure in the zoo conversations and children's later memory or engagement, although repetitive structure was marginally negatively correlated with children's overall engagement. This marginally significant correlation disappeared, however, when controlling for child language.

Correlations were run between parental autonomy support in the zoo conversation and the child memory variables. Autonomy support was not significantly correlated with the amount that children recalled or with the coherence of their narratives. However, autonomy support in the zoo conversation did correlate significantly with children's overall engagement in the interviews. This correlation became marginal after controlling for child language. Due to the correlation between autonomy support and conversational length, we also ran this correlation controlling for length; with conversational length partialled out, autonomy support remained significantly positively correlated with children's overall engagement, $r = .40$, $p < .05$.

Discussion

Parents changed their reminiscing style in response to our manipulation targeting parents' goals for reminiscing. Process-oriented parents became more autonomy supportive in the zoo conversations than they had been at baseline, whereas outcome-oriented parents tended to become more controlling. We suggest that parents' goals in these conversations were affected by the experimenter's instruction in each condition. Taken together, these data support the prediction that, depending on their construal of the reminiscing goal, parents may focus to varying degrees on the process of remembering or on the outcome of remembering, with significant implications for their relative support or control of children's autonomy. In particular, the manipulation appears to have enhanced parental autonomy support in the process-oriented group. All but two of the parents in the process-oriented condition increased their provision of autonomy support from baseline to the zoo conversation, and the two parents who did not become more autonomy supportive demonstrated only a slight decrease in autonomy support. Thus, parents of children who are not going to be tested appear to be relatively supportive of children's autonomy in these conversations, presumably because of a lack of pressure on outcome.

Parents of children who would later be tested for recall accuracy appeared to have as a goal children's veridical recall; these parents were relatively controlling, ostensibly in an effort to help children get the memory correct. The findings thereby extend earlier research demonstrating that when parents focus on children's performance, they tend to act in a controlling manner. Grolnick et al. (2002) found that, overall, mothers in a high-pressure condition, similar to the outcome-oriented condition of the current study, acted in a controlling manner relative to those in a low-pressure condition. It is worth noting, however, that the effect of the outcome-oriented condition in the current study was marginally significant. Parents' natural autonomy support styles might help to account for this. Grolnick and colleagues determined that, although mothers who initially were controlling became even more controlling in the high-pressure condition, in one of their two tasks mothers who were high in autonomy support at baseline did *not* become more controlling when placed in the high-pressure condition. Grolnick and colleagues concluded, "Autonomy-supportive mothers did not appear to be vulnerable to our manipulation. In fact, although not significantly more, autonomy-supportive mothers were somewhat more

autonomy supportive in the high-pressure condition than in the low-pressure condition'' (p. 152). This ''reactive effect'' on the part of the autonomy-supportive mothers could explain why our condition effects for the outcome-oriented group were not as strong as for the process-oriented group, whereas the individual difference findings were strong and clear. Indeed, five parents in the outcome-oriented group in the current study either remained steady or actually increased their provision of autonomy support from baseline to the zoo conversation. This ''reactive effect'' is worth exploring in future studies.

The absolute increase and absolute decrease in autonomy support in the current study were relatively modest. This is especially noteworthy given the lack of main effects of condition on children's memory and engagement, partly a consequence of these moderate changes. It is suggested that future experimental manipulation should alter the instructions to the process-oriented parents. In particular, the phrase ''I'll be asking [the child] questions about this event when I come to your home'' might still encourage parents to ''test'' or ''enhance'' their children's recall. Future instructions might instead be phrased as ''I'll be interested in finding out [the child's] perspective and understanding of the pretend zoo. In the meantime, I'd like you to have a conversation with [the child] about this event.''

There were significant negative correlations between autonomy support and elaborative structure in the zoo event conversations. Parents who were more supportive of children's autonomy in these conversations also provided less structure. In the current sample, parents who provided low autonomy support in the zoo conversation seemed genuinely concerned about their children's later performance and tended to have more structurally elaborative conversations with the children, although the intervention did not appear to change parents' provisions of structure. This may be attributable to relatively stable structural styles. Haden (1998) concluded that there is ''compelling support'' that a structural style ''reflect[s] stable, generalized strategies that mothers adopt in [talking about the past]'' (p. 110). Indeed, there were no group differences in the structural variables, which correlated across conversations.

It had not been possible, based on past research, to isolate experimentally the effects of elaborative structure from the effects of autonomy support. The current study takes an important step in this direction by attempting to change the goal of reminiscing. Moreover, a limitation of the naturalistic research has been a lack of verified and documented events. In addition to isolating the differential effects of autonomy support and elaborative structure, the current data permit assessment of the objective veracity of children's recall. Although there were no main effects of condition on children's recall, parents' provisions of elaborative structure and autonomy support in the zoo conversations differentially predicted several aspects of children's subsequent veridical recall. In the current study, elaborative structure in the zoo event conversation uniquely predicted children's subsequent veridical recall of details about the zoo. These findings parallel those of Boland et al. (2003), who found that children of elaboration-trained mothers recalled significantly more details about the experimental event than did children of untrained mothers. Boland and colleagues' study entailed use of the elaborative style during the unfolding of the event rather than during postevent talk, although McGuigan and Salmon (2004) demonstrated that postevent elaborations are especially beneficial for children's memory.

Positive effects of the elaborative style have also been seen in terms of the narrative quality of children's memories. For example, Peterson et al. (1999) concluded that parents' styles of talking about past experiences influence children's narrative skill development, especially in terms of the length of their memory narratives and the amount of unique information provided, such as the number of context-setting references to where and

when. Likewise, in the current study, parental elaborative structure in the zoo conversations uniquely predicted the temporal coherence of children's memories in the interview.

It appears that by promoting children's autonomy in reminiscing, parents may be actively fostering children's interest and engagement in constructing their personal memories. Indeed, parents' support of children's autonomy in the zoo conversation predicted children's engagement in the subsequent memory interview. This finding is consistent with self-determination theory, which would expect that parents who are more autonomy supportive in reminiscing will have children who are more intrinsically motivated to reminisce for its own sake, whereas parents who are more controlling would be expected to have children who are less intrinsically motivated to engage in reminiscing. We speculate that parents who tend to encourage children's autonomy in reminiscing may effectively be telling children that they have the authority to say what happened on remembered occasions. Because their ideas about the past are more likely to be encouraged and appreciated, these children may be more likely to readily build their own memories of personal events. This remains an issue for future investigation.

In sum, the current pattern of findings corresponds elegantly to the proposed independence of the tenets of self-determination theory. Parents who use an elaborative structure in reminiscing are giving children the necessary structure for personal memory. Self-determination theory would predict that children who have the benefit of elaborative structure will appear to be more competent in independent recall, although not necessarily more engaged in talking about the past. These predictions are borne out in the findings that parental elaborative structure predicted the later quantity and quality of children's recall, in terms of narrative detail and temporal coherence, but did not predict children's engagement in talking about the pretend zoo. Parental autonomy support would be predicted to mainly affect children's motivation to reminisce rather than the actual quality or quantity of their reminiscence. This prediction is borne out in the findings that parental autonomy support in the zoo conversation uniquely predicted children's later engagement in the memory interview but not children's memory competence.

We did not obtain nonverbal measures of children's memory. This is a limitation given that language, by which children's memory is measured, is itself a developing skill during the preschool years. Although we addressed this limitation statistically by controlling for children's language in the tests of individual differences, future research might include a recognition test alongside the verbal memory assessment. Such a test would call for receptive language skill in that children would need to understand verbal instruction but would not require children's verbalization of their memory. This would then measure children's recall but would not be a measure of what children can *tell* an experimenter.

Finally, this study builds on a body of research based nearly exclusively on well-educated, middle-class samples (but cf. Reese, 2002). Cautions must be raised about generalizing beyond such a population. Research in other domains indicates that interactions among various ecological systems may result in diverse populations responding differently under similar conditions (Bronfenbrenner, 1993).

Reminiscing about personally experienced events is an important part of an individual's construction of a sense of self and is also important for creating shared histories and interpersonal bonds. It allows individuals to share their personal memories with others but also plays a critical role in establishing and shaping those memories. The ways in which parents reminisce with children appear to be a product both of their general approach to reminiscing and of their particular situated goals; there are clearly differential effects of parents'

orientations to conversations about the past for children's engagement in reminiscing. Not only may the quality and quantity of children's personal memories be affected by parents' reminiscing style, but also children's interest in reminiscing and in constructing life stories may be affected by parents' orientation to reminiscing.

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Appendix A

Parental autonomy support coding scheme

Low autonomy support (1)	Turn changes the topic of conversation to be in line with parent's agenda or explicitly negates the child without providing helpful follow-up information. *Example*: P: Didn't you take care of the gorilla at all? P: Did you help him take care of anything? P: You just told [me] something. C: Mmm, we brushed him. P: Hmm? You brushed him. C: We did? P: I'm asking you! Did you brush him? P: What else? C: Um, the giraffe just was, was the giraffe next? P: Yeah, but what else did you do with the gorilla, do you remember? 1
Moderately low autonomy support (2)	Turn functions to change the specific focus of the conversation. *Example*: P: Ohh! And what was the tiger doing? C: It was his birthday! P: It was his birthday. And what did you make for the tiger? C: I make a strawberry cake! P: Mmmm! How many candles? C: I have one. P: One candle. P: So after you had done that, did you make a card for the tiger? 2

(*continued on next page*)

Appendix A (*continued*)

Neutral (3)	Turn functions to continue the general topic or agenda of conversation but in a specific direction. *Example*: P: So, what else, it was his birthday, what did you do? C: I maked him a cake out of playdough. P: What color was the playdough? 3
Moderately high autonomy support (4)	Turn functions to sustain child's topic or agenda in the conversation. *Example*: P: What's up with the baby elephant? C: It was lost. P: It was lost!? Why were you looking for him? C: I was the zookeeper. P: What made you the zookeeper? 4
High autonomy support (5)	Turn functions to expand on the child's topic or agenda in the conversation. *Example*: P: And what did you do for the zebra? I actually don't remember. What'd you do for the zebra? C: I put a vitamin in the water. P: Oh, I forgot about that, [child's name]! Thank you for reminding me. 5

Note. P, parent; C, child.

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