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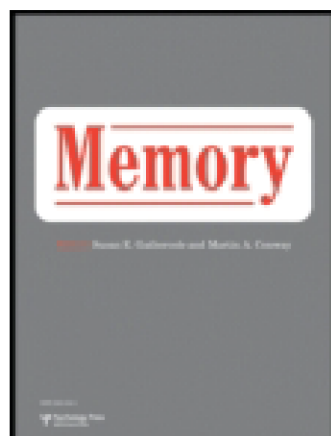
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Sharing memories and telling stories: American and Chinese mothers and their 3-year-olds

Qi Wang, Michelle D. Leichtman, and Katharine I. Davies

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American and Chinese mothers were asked to talk with their 3-year-old children at home about two shared past events and a story (41 mother–child dyads). Results revealed between-culture variation in the content and style of mother–child conversations when sharing memories and telling stories. American mothers and children showed a high-elaborative, independently oriented conversational style in which they co-constructed their memories and stories by elaborating on each other's responses and focusing on the child's personal predilections and opinions. In contrast, Chinese Mother–child dyads employed a low-elaborative, interdependently oriented conversational style where mothers frequently posed and repeated factual questions and showed great concern with moral rules and behavioural standards with their children. Findings suggest that children's early social-linguistic environments shape autobiographical remembering and contribute to cultural differences in the age and content of earliest childhood memories.

Over the past two decades, sociolinguistic studies of cognitive development have underscored the intimate link between narrative and autobiographical memory (Bruner, 1990; Fivush, 1997; Nelson, 1996). Early in life, conversations with significant adults teach children how to create narratives about their past experiences, and by 3 to 4 years of age children contribute independently to discussions about the shared past (Fivush & Hamond, 1990; Hudson, 1990; Nelson, 1992). Such discussions help children use language to reinstate past experiences, inform them of the personal and societal meaning of life events, and emphasise the social significance of co-remembering (e.g., Fivush & Hudson, 1990; Nelson, 1992, 1993, 1996; Tessler & Nelson, 1994). During the same period of early childhood in which children learn about sharing memories, they also acquire the ability to understand and produce narratives more generally, most notably through listening to stories and reading with parents (De Temple & Snow, 1996; Sutton-Smith, 1981; Tucker, 1995; Wellhousen, 1993).

Research suggests that among American parents and their children, styles of memory talk vary across dyads in ways that may effect children's subsequent memories of their experiences (e.g., Fivush & Fromhoff, 1988; Leichtman, Pillemer, Wang, Koreishi, & Han, in press; Reese, Haden, & Fivush, 1993, 1996; Tessler & Nelson, 1994). Mothers labelled low-elaborative or repetitive tend to have short and directive conversations with their children about past events, provide very little embellishment or detail about what happened, and often try to elicit correct answers in a way that emulates a memory examination. Other mothers, labelled high-elaborative or elaborative, have lengthy talks with their children about the past, dwell on specific episodes, provide rich and embellished information about the events under discussion, and invite children to co-construct stories about shared experiences. Subsequent to conversing about a past event, in comparison with children of low-elaborative mothers, children of high-elaborative mothers typically remember more details and are more likely themselves to

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exhibit an elaborative style of discussing the past (Haden, Haine, & Fivush, 1997; Hudson, 1990; Leichtman et al., in press; Reese et al., 1993).

An intriguing question is how the narrative process, including both parent-child conversation and storytelling, may differ between cultures and how such differences bear on autobiographical remembering. Of particular interest is the contrast between narrative in cultures characterised as independently versus interdependently oriented (Markus & Kitayama, 1991, 1998). Independently oriented cultures such as the United States put a premium on qualities associated with individuality, self-expression, autonomy, and personal uniqueness. Alternatively, interdependently oriented societies, exemplified by several East Asian cultures, focus on group harmony, interpersonal connectedness, social obligation, and conformity. While variation exists in the degree to which individuals embrace an independent vs. interdependent social orientation within and across both East Asian and Western cultures (Ho, 1986, 1989; Miller & Sperry, 1987; Nakamura, 1964; Spiro, 1993; Wang & Hsueh, 1997), normative differences between particular Eastern and Western cultures are marked (Fiske, Kitayama, Markus, & Nisbett, 1998; Hsu, 1970).

Whereas in independently oriented cultures a primary role of memory conversations with parents is to help children organise their personal histories in ways that distinguish them as individuals, in interdependently oriented cultures such conversations more often reinforce key social values, such as moral behaviour, connectedness, and responsibility towards others. In China, for example, observation suggests that conversational interactions between parents and children take a very different form than in America (Ho, 1986; Hsu, 1970; Lin, 1939).

Recent comparative studies investigating everyday parent-child interactions provide further evidence of different cultural emphases with regard to social-moral aspects of socialisation. Miller and colleagues compared early socialisation in middle-class American and Chinese families by analysing personal storytelling and narrative practices with 2½-year-old children within the family context (Miller, Fung, & Mintz, 1996; Miller, Wiley, Fung, & Liang, 1997). Consistent with the Confucian tradition that places a high value on teaching and strict discipline, they found that Chinese parents were more likely than Americans to remind children of past transgressions and repeatedly invoke moral standards

and social norms. In contrast, American parents ended to employ stories of young children's past experiences as a medium of entertainment and affirmation instead of as a didactic resource. Miller and Colleagues (1996, 1997) suggest that personal storytelling as a routine family socialising practice in these two cultures is already functionally differentiated by 2½ years of age. By operating with an explicitly evaluative, overtly self-critical framework, Chinese parents encouraged children's obedience to authority, appropriate conduct, and a sense of shame. In contrast, American parents used an implicitly evaluative, overtly self-affirming framework intended to protect or enhance the child's self-esteem.

Research has documented a number of differences in autobiographical memory between Asian and American adult populations that shadow differences between children. Researchers (Pillemer, 1998; Wang, 1999) have noted that American adults' personal memories are more likely to be specific one-time events expressed in a lengthy and detailed manner, whereas Asian adults' personal memories tend to focus on general routines and lack contextual information. In addition, the age of the earliest autobiographical memory in an adult's life tends to be earlier for Americans than for adults from more interdependently oriented populations. Surveys have dated Korean adults' earliest memories 17 months later (Mullen, 1994) and Chinese adults' earliest memories 6 months later than Americans' (Wang, 1999; Wang, Leichtman, & White, 1998).

Focusing on potential differences in memory processes during childhood, Mullen and Yi (1995) compared the conversations of Korean and American mother-child dyads across the course of a day. They found that American mothers talked with their children about shared past events three times as often as Korean mothers. American mothers were more likely to make their children the centre of the conversation, talking about the child's personal attributes, interests, and preferences. In contrast, past-related conversations between Korean mothers and their children were more likely to centre on social discipline and behavioural rules.

Han, Leichtman, and Wang (1998) studied the personal event of memories of Korean, Chinese, and American 4- and 6-year-olds directly, providing each child with the same battery of autobiographical memory questions. Consistent with an independent orientation, American children provided more references to specific past events,

descriptives and modifiers, references to their own internal states, and mentions of themselves relative to others than did their Asian peers.

In addition to differences in autobiographical accounts, Han et al. (1998) investigated cultural differences in children's memories for a story after a one-day delay. When prompted for recall of story details, Chinese, Korean, and American children were equally accurate, although some differences existed in which aspects of the story children remembered.

In a recent study, we focused on stories that children themselves created (Wang & Leichtman, in press). Researchers asked American and Chinese 6-year-olds to tell stories prompted by pictures and standard verbal leads, and in addition prompted children to recount seven emotional memories. Content analyses were used to analyse various social, emotional, and cognitive characteristics of children's stories and memories. The findings indicated that compared with American children, Chinese children showed greater orientation towards social engagement, greater concern with moral correctness, greater concern with authority, and a less autonomous orientation in both their stories and memories. These results align with differences in the general values and degrees of independence and interdependence between the two cultures, which we speculate are conveyed to children through divergent socialisation practices, including adult-child conversations.

To summarise, research indicates that differences between Chinese and US populations exist in the timing and expressive style of adult autobiographical memories that are consistent with differences in the degree to which cultural values stress independence vs. interdependence. Narrative practices as a medium of socialisation in Chinese and American families appear to serve different functions early on that accord with different social orientations between the two cultures. Children's narratives about their personal experiences show content and stylistic differences between cultures that reflect both different styles of narrative expression and different values. Consistent with differences in the expression of autobiographical memories, the stories that children in each culture create contain content and styles of expression that reflect a preoccupation with the values of the larger culture around them.

In addition to cross-cultural differences, past research has documented differences in parents' styles of conversing with their sons and daughters,

primarily among American samples. Notably, studies have indicated that at least in some contexts, parents tend to talk more, use more supportive speech, provide more elaboration, and use more emotion words in talking with daughters than with sons (Fivush, 1998; Leaper, Anderson, & Sanders, 1998; Reese et al., 1996). In turn, in some studies girls have provided longer, more contextually situated and evaluative narratives than boys (e.g., Haden et al., 1997), although this is not always the case (e.g., Han et al., 1998). Given such variations, we were interested in examining how the pattern of responses in the present study might differ according to gender as well as culture.

In this study, we focused on both mother-child conversations about recent past experiences and storytelling from a picture book in China and the United States. Although cross-cultural work has considered the *amount* and *content* of parent-child memory talk (Mullen & Yi, 1995), researchers have not evaluated how the *style* of mothers' conversations with children about past events differs between cultures. Because the style of conversation (e.g., high-versus low-elaborative) appears to affect children's subsequent memories of events discussed (Fivush & Fromhoff, 1988; Tessler & Nelson, 1994), stylistic differences are important to document. Therefore, one goal of the present study was to compare American and Chinese mother-child conversations about past events in terms of both *what* information mothers convey and *how* they convey it. We further expected to find the same pattern of cultural differences in the content and style of mother-child storytelling.

In view of the contrasts in cultural values and socialisation practices between American and Chinese families (Hsu, 1970; Wang & Leichtman, in press), we predicted that mothers in these two cultures would differ in both the content and styles of their memory conversations and story narration. We expected that due to the relative de-emphasis on individual uniqueness and expressiveness in Chinese culture where group activities have importance over personal experiences (Bond, 1991; Ho, 1986; Hsu, 1970; Wang & Hsueh, 1997), Chinese mother-child dyads would be more likely to focus on social values and behaviour standards when sharing memories and telling stories. Compared with American mothers, Chinese mothers would also be more likely to be low-elaborative or repetitive talkers, i.e., they would be more likely to cajole their children to

contribute information by simply repeating the same questions over and over, and less likely to provide embellishment for the co-construction with their children of a shared story. We predicted that conversations between American mother-child dyads would be more focused on the child's predilections, actions, and feelings, and would be more elaborative and story-like. It was also expected that there would be a high consistency between mothers' and children's conversational styles at an individual level.

METHOD

Participants

A total of 21 White American mothers from the Boston area, 20 Chinese mothers from Beijing, China, and their children participated in this study. American children's ages ranged from 2.9 to 3.9 years (mean age = 3.3; 11 girls, 10 boys; 7 firstborns, 14 laterborns). Chinese children's ages ranged from 3.0 to 4.2 years (mean age = 3.4; 10 girls, 10 boys; all only-children). All mother-child dyads came from middle-or upper-middle class families, and all mothers had at least a college education.

Procedure

In each country, one trained native female research assistant collected all data. Research assistants were blind to the study's purpose and hypotheses. In an initial telephone contact, research assistants told mothers that they were interested in studying what children remember about past experiences and stories. They explained that in order to make children feel comfortable, mothers would also be asked to play a role in the study. Each mother would talk with her child about two past events they had both participated in and tell the child a story based on a picture book. An appointment was then made for the research assistant to visit the mother and child at home.

At the beginning of each appointment, the research assistant talked with the mother out of earshot of the child. The research assistant helped the mother select two events in which both mother and child had participated, such as trips to museums and amusement parks, entertainment outings, or first time trips on aeroplanes, trains, or boats. All selected events took place within the

month before the interview, so that children had fresh memories of them. The goal was to select unique events that had lasted no longer than a day, so that extended events (e.g., vacations) or routine events that occurred on multiple occasions (e.g., birthday parties) were eliminated. Events involving a movie, play, or other activity with a storyline were also excluded. Following event selection, the research assistant gave the mother a picture book with illustrations but no words and told the mother "This picture book is about a little bear going to the market with bear mom. Please tell the story to your child, making up the text as you go along." The research assistant then stressed that mothers should talk with children about the past events and tell them the story in whatever way was natural for them. All mothers were asked to first talk with children about the two past events and then tell the story.

After this preparation, mother and child sat comfortably in a quiet place in the home with a tape recorder recording their conversation. The research assistant was not in the room during the interviews, and no time restrictions were placed on the length of conversation. The mother informed the research assistant when the interview was completed. The research assistant gave a picture book to the child and thanked mother and the child for their participation.¹ The part of this procedure that focused on personal memories was similar to the procedure used in past work (e.g., Fivush & Fromhoff, 1988; Reese et al., 1993).

Coding

All coding was performed on English transcriptions, in accordance with previous comparative research on narratives (Han et al., 1998; Mullen & Yi, 1995; Wang & Leichtman, in press). To ensure accuracy, Chinese interviews were translated and back-translated separately by two bilingual Chinese-English research assistants. All final translated materials were then checked by a third bilingual speaker. Disagreements were resolved by discussion among the translators.

Following the method used by Reese et al. (1993), we employed independent clauses as the

¹Following the mother-child interview, children were interviewed by the research assistant in their mother's absence about the story they were told. One research assistant did not use standardised questions to prompt children's recall of the story. In order to avoid any possible systematic bias, children's story memory was excluded from analysis.

coding unit for most codes. Each unique or implied verb in an independent clause formed a new propositional unit, for example, “He swung and swung” was one proposition, whereas “He swung and laughed” was two. For a few codes noted here (i.e., evaluations and off-topic talk), instances of the type of talk were used as the coding unit. The coding categories were mutually exclusive and exhaustive, and intended to grasp both the content and the structure of mother–child conversations. Frequencies for mothers’ and children’s conversation codes were tabulated separately.² Some coding categories were adapted from Mullen and Yi (1995) and Reese et al. (1993).

We employed the same coding scheme to code memory talk and storytelling for two reasons. First, it allowed us to examine whether the conversational styles used by mothers and children were consistent across different tasks, i.e., in both memory talk and storytelling. Second, although we explicitly asked mothers to tell a story to their children, inspection of the data indicated that the storytelling process tended to be bi-directional in both cultural groups. Both American and Chinese mothers asked their children for information about the story and made comments on children’s responses. Therefore, it was appropriate to apply the same conversation codes to discussions about memory and storytelling.

Conversation codes

1. Elaborations. Mothers’ comments that either introduced a topic for discussion, moved the conversation to a new aspect of the event, or added information about a particular aspect. Children’s utterances that either requested new information, moved the conversation to a new aspect of the event, or provided new information about the past event or story being discussed. (e.g., M: *Do you remember going on a whale watch?* C: *Yeah, I only saw one whale.*)

2. Repetitions. Mothers either repeated the exact content or the gist of their own previous utterance or tried to elicit information from their children but provided no new information. Children participated in the conversation by repeating either their own or their mother’s previous utterances, or by taking a legitimate turn without

adding any new information. Two of the same repetitions immediately following one another in a conversational turn were counted as a single repetition. (e.g., M: *What did you do at the science museum?* *What did you do there?* *Do you remember?*; C: *I don’t know.*)

3. Evaluations. Evaluations were coded by the instance of occurrence instead of the independent clause. Mothers’ utterances that confirmed or negated children’s previous utterance, often including a repetition of children’s previous utterance along with “Right”, “Yes”, or “No”. Children’s utterances that confirmed or negated mothers’ previous utterance. Head nods or shakes that could be inferred from mothers’ subsequent comment were also coded as evaluations. (e.g., following a child’s response that the big bear was a Mommy, M: *A Mommy?* *I think you’re right!* *Looks like they’re getting some yummy stuff;* C: *Um-hum.*) The mother’s response was coded as two evaluations.

4. Affect. Mothers’ statements or questions concerning their children’s story or the story protagonist’s emotional response about an object, person, or the event itself. Children’s statements of their own or the story protagonist’s emotional response about an object, person, or the event itself. Two of the same affect statements or questions following one another in a conversational turn were coded as two affects. Positive and negative affects were further coded separately. (e.g., M: *Did you have fun at the beach the other day?*; C: *Bear cried.*)

5. Didactic talk. Mothers’ or children’s statements or questions about moral standards, social norms, and behavioural expectations. (e.g., M: *What should people do when crossing the street?*; C: *It’s wrong to kill birds.*)

6. Autonomy. Mothers’ statements or questions about children’s or the story protagonist’s either personal needs and preferences or personal judgements and opinions regarding an object, person, or the event itself. Children’s expressions about their own or the story protagonist’s either personal needs and preferences or judgements and opinions. (e.g., M: *Bear wanted to get that big cake;* C: *I think pandas are lazy.*)

7. Associative talk. Mothers’ or children’s statements or questions not specifically about the

² In order to achieve mutual exclusivity and high reliability, potential overlaps between coding categories were avoided by detailed specifications of each category prior to the coding.

particular past event or the story under discussion, but related to the event or story. This included (1) talk concerning another past event related to the event under discussion; (2) facts about the world which arose in conjunction with the event in question or the story; (3) talk concerning the event in question couched in fantasy rather than factual terms; (4) comments on a culture occurrence of the particular event in question. (e.g., M: Did you get wet in the ocean?; C: Yeah. *What's the ocean mean?*; M: *A lot of water.*)

8. *Metacognitive comments.* Mothers' remarks on the process of remembering and knowing, or about their own or their children's cognitive performance. Children's utterances that commented on the task or on their own or their mother's cognitive performance. (e.g., M: *You'd forgotten about that*; C: *I only remember a little because it was long long ago.*)

9. *Off-topic talk.* Within a conversation about a past event or the story, mothers or children talked about topics which, in contrast to associative talk, were not related to the event being discussed. This category was coded by the instance of occurrence.

Other coding categories

Three criteria were adopted to measure the volume of memory talk and storytelling respectively: (1) The total number of conversational turns taken by each mother-child dyad; (2) The total number of codes in mothers' or children's speech; (3) The mean number of codes per conversational turn in mothers' or children's speech.

We also calculated children's mean length of utterance in words (MLU-word; Brown, 1973) in order to assess their linguistic skill at the time of the study. As it would be inappropriate to compare the number of Chinese words (characters/syllables) with the number of English words, this coding was also performed on English transcripts.

One trained research assistant coded all of the data and a second independent assistant recoded 25% of the transcripts for reliability. Both coders were blind to the hypotheses of the study and uninformed of the identity of each participant. The average inter-coder reliability (r) was .87 (ranged from .84 to .93) for mothers' memory conversation codes and .92 (ranged from .88 to .95) for their story codes; and .90 (.86 to .93) for

children's memory codes and .93 (.89 to .97) for their story codes. Disagreements were resolved by discussion among the coders.

RESULTS

No significant cultural (US: $M=3.18$, China: $M=2.88$) or gender (boys: $M=2.91$; girls $M=3.17$) differences were found in children's MLUs, indicating children's linguistic abilities were at the same level at the time of the study.

A 2 (culture \times 2 (gender) ANOVA identified no significant culture effect on the total number of conversational turns taken by each mother-child dyad in either memory talk (per memory event, US: $M=57.95$; China: $M=50.70$) or storytelling (US: $M=87.57$; China: $M=89.10$), indicating that the volume of conversations by our first criterion (the number of conversational turns) did not differ between the two cultural groups. Mother-son dyads tended to take more conversational turns in both memory talk and storytelling than mother-daughter dyads—per memory event: son $M=61.32$, daughter $M=47.83$, $F(1,37)=3.56$, $p=.07$; story: son $M=110.90$, daughter $M=66.81$, $F(1,37)=5.40$, $p=.03$. No culture \times gender interaction was evident for this variable.

Analyses of conversation codes were based on mean frequencies per memory event and frequencies of the story.³ Four multiple analyses of variance (MANOVA) that considered mothers' and children's memory and story content (represented by the nine conversation codes) as a function of culture and gender were first conducted, which revealed consistently robust culture effects: mothers' memory codes $F(8,30)=6.71$, $p<.0001$; children's memory codes $F(8,30)=6.83$, $p<.0001$; mothers' story codes $F(9,30)=7.22$, $p<.0001$; children's story codes $F(8,30)=3.39$, $p=.007$. Only the analysis on mothers' story codes showed a significant gender effect: $F(8,30)=3.58$, $p=.005$. No culture by gender interactions effect was present at any of the analyses.

Further 2 (culture) \times 2 (gender) ANOVAs were performed across all the conversation vari-

³ Previous studies on memory talk (e.g., Fivush, 1988; Han et al., 1998; Reese et al., 1993) indicate that compared with other analysis units such as proportions, frequencies are more informative by reflecting the sheer amount of different types of event information mothers and children provided. Analyses on memory variables were based on mean frequencies per event so that we would be able to generalise findings across different events.

TABLE 1
Mean frequencies (and standard deviations) for mothers' conversation codes by cultural group

Variable	Memory				Story			
	America	China	<i>F</i> (1,37)	<i>p</i>	America	China	<i>F</i> (1,37)	<i>p</i>
Elaborations	28.36 (9.66)	23.20 (14.31)	1.75	0.19	62.67 (18.89)	63.60 (25.86)	0.01	0.91
Repetitions	10.43 (6.43)	16.55 (12.27)	3.93	0.05	17.90 (15.89)	42.95 (31.12)	10.29	0.003
Evaluations	14.02 (5.22)	8.60 (4.61)	13.09	0.0009	17.00 (15.28)	14.00 (11.48)	0.56	0.46
Affect	1.52 (1.98)	1.30 (1.24)	0.30	0.58	4.48 (2.04)	4.25 (2.51)	0.08	0.78
Didactic	0.07 (0.18)	0.88 (1.55)	5.23	0.03	0.90 (0.77)	4.50 (3.92)	16.92	0.0002
Autonomy	1.64 (1.48)	0.70 (0.52)	6.91	0.01	3.76 (2.60)	2.40 (1.82)	3.87	0.06
Associative	2.12 (2.28)	1.30 (1.00)	2.39	0.13	4.43 (4.24)	3.90 (3.32)	0.31	0.58
Metacognitive	0.90 (0.70)	0.65 (1.03)	0.87	0.36	1.81 (1.63)	0.85 (1.18)	5.21	0.03
Off-topic	1.17 (0.76)	0.20 (0.38)	25.41	<.0001	1.19 (1.29)	0.10 (0.31)	13.05	0.0009

F and *p* values refer to two-way ANOVAs for the main effect of culture.

ables of interest.⁴ All *p* values reported were exact figures; all *t* tests performed were two-tailed. In connection with our hypotheses, we present the findings in the following sequence. First, we discuss mothers' style of memory talk and storytelling; second, children's style of memory talk and storytelling; third, sequential analyses of contingencies between mothers' and children's talk; and finally, consistency between mothers' and children's conversational styles at the individual level. In each section of the results, we first present significant culture effects in memory talk and storytelling, followed by gender effects and culture \times gender interactions. Statistical values reported in the tables that follow are not repeated in the text.

Mothers' talk

There was no significant effect of culture or gender on the overall number of codes in mothers' speech in either memory talk or storytelling. Analyses on the mean number of codes per conversational turn in mothers' speech revealed only a significant gender effect where mothers of daughters had a greater number of codes per conversational turn in memory talk than mothers of sons: son: $M=1.95$, daughter: $M=2.33$, $F(1,37)=4.88$, $p=.03$. The same pattern of gender

difference for this variable was marginally significant in storytelling: son: $M=3.00$, daughter: $M=6.14$, $F(1,37)=2.92$, $p=.10$. These results suggest that although mother-son dyads tended to take more turns in their conversations as reported earlier mothers tended to talk longer with their daughters within each conversational turn.

Table 1 shows the mean frequencies and standard deviations of mothers' conversation codes for memory talk and storytelling by cultural group, as well as the *F* and *p* values of the main effect of culture from 2 (culture) \times 2 (gender) ANOVA analyses.

The results demonstrate that American and Chinese mothers did not differ significantly in their use of elaborations in either memory talk or storytelling. However, compared with Chinese mothers, American mothers used fewer repetitions in both forms of conversation and provided more evaluations when talking with their children about past events. No significant cultural difference was evident for mothers' mention of affect, nor when positive and negative emotions were analysed separately.

Consistent with predictions, Chinese mothers produced more didactic talk than American mothers, who produced more autonomy talk in both memory and story conversations. Further, American mothers appeared to make more metacognitive comments than Chinese mothers when telling the story with their children. In both memory talk and storytelling, American mothers engaged in more off-topic talk than Chinese mothers.

Only a few gender differences appeared for mothers' conversation codes in memory talk and storytelling. In memory talk, mothers of sons ($M=1.40$) more often mentioned the child's positive emotions than mothers of daughters,

⁴ We tested age and birth order effects across all the variables of interest, but found no significant differences according to these factors. Therefore, age and birth order were not considered further in later analyses. We also conducted analyses comparing firstborn Caucasian children and only-child Chinese across all the variables. The results were consistent with those with all Caucasian children included. We therefore reported findings of the latter.

TABLE 2
Mean frequencies (and standard deviations) for children's conversation codes by cultural group

Variable	Memory				Story			
	America	China	<i>F</i> (1,37)	<i>p</i>	America	China	<i>F</i> (1,37)	<i>p</i>
Elaborations	13.07 (4.98)	9.00 (6.27)	5.96	0.02	20.76 (14.14)	18.45 (13.88)	0.31	0.58
Repetitions	6.38 (2.97)	5.83 (4.85)	0.19	0.67	11.14 (8.17)	13.30 (13.71)	0.38	0.54
Evaluations	8.95 (4.86)	10.82 (6.83)	0.94	0.34	9.14 (8.08)	11.15 (9.18)	0.51	0.48
Affect	0.21 (0.34)	0.27 (0.50)	0.19	0.67	1.14 (1.28)	0.55 (0.69)	4.59	0.04
Didactic	0.00 (0.00)	0.48 (1.08)	—	—	0.05 (0.22)	0.30 (0.66)	2.66	0.11
Autonomy	1.00 (1.40)	0.05 (0.15)	9.20	0.004	1.29 (1.27)	0.20 (0.41)	13.20	0.0008
Associative	0.95 (1.74)	0.63 (1.09)	0.61	0.44	1.33 (1.77)	1.85 (2.11)	0.68	0.41
Metacognitive	0.17 (0.48)	0.15 (0.46)	0.02	0.88	0.24 (0.54)	0.25 (1.12)	0.00	0.97
Off-topic	1.28 (0.94)	0.25 (0.44)	19.00	0.0001	1.52 (1.40)	0.05 (0.22)	20.48	<.0001

F and *p* values refer to two-way ANOVAs for the main effect of culture.

$M=0.64$; $F(1,37)=4.21$, $p=.05$, whereas in storytelling mothers of daughters ($M=3.57$) more often mentioned the protagonist's negative emotions than mothers of sons, $M=2.55$, $F(1,37)=4.22$, $p=.05$. Further, when telling the story, mothers of sons made more associative talk and more metacognitive comments ($M=5.70$ and 1.80) than mothers of daughters, $M=2.71$ and $.90$; $F(1,37)=7.18$ and 4.47 , $p=.01$ and $.04$. There was no significant culture \times gender interaction for any of the variables.

In order to examine the consistency of mothers' conversational styles across different tasks at an individual level, we calculated simple correlations between memory and story codes for mothers across the entire sample and within each cultural group. The overall average correlation between mothers' memory and story codes achieved a moderate magnitude: $r=.25$ (US: $r=.24$; China: $r=.23$).

Children's talk

Analyses on the overall number of codes in children's speech yielded only a significant gender difference where boys' speech during storytelling had a greater number of codes than girls: boys: $M=57.95$, girls: $M=35.05$, $F(1,37)=5.27$, $p=.03$. The same trend of gender difference was evident in memory talk, although it did not reach significance: boys: $M=33.48$, girls: $M=26.29$, $F(1,37)=3.39$, $p=.07$. However, no significant effect appeared for the mean number of codes per conversational turn in children's speech in either memory talk or storytelling, suggesting that children of different cultures and genders talked at similar length within each conversational turn.

Table 2 displays the mean frequencies and standard deviations of children's conversation codes for memory talk and storytelling by cultural group, as well as the *F* and *p* values of the main effect of culture from 2 (culture) \times 2 (gender) ANOVA analyses.⁵

Results indicate that American children provided more elaborations than Chinese children when talking with their mothers about past events. Children in the two cultural groups did not differ in their use of repetitions and evaluations in either memory talk or storytelling.

Further, American children mentioned the story protagonist's emotions more often than did Chinese children. The difference was evident in both positive (US: $M=.14$; China: $M=.05$) and negative (US: $M=1.00$; China: $M=.50$) emotions, although it did not reach significance when positive and negative emotions were analysed separately.

Mirroring the results of mothers' conversation codes, Chinese children used more didactic talk than American children in both memory and story conversations, although the difference in the latter did not reach significance. Also, American children used more autonomy talk than their Chinese peers in both forms of conversation.

⁵ Due to the fact that the mean for American children was 0 for memory didactic code, it would be inappropriate to conduct *F* test on this variable. We therefore performed a Chi-square analysis (Rosenthal & Rosnow, 1991) by counting the number of children falling in one of the following four cells.

	America	China
Above median	0	5
At or below median (median = 0.00)	21	15

The analysis revealed a significant cultural effect: $\chi^2(1) = 5.98$, $p=.01$.

There was no effect of culture for children's use of associative talk and metacognitive comments in either conversation. In both memory talk and storytelling, American children engaged in more off-topic talk than Chinese children.

There were a few gender differences in children's conversational codes. Compared with girls ($M=8.81$ and 7.10), boys ($M=15.75$ and 13.30) used more repetitions and evaluations during storytelling, $F(1,37)=4.26$ and 5.69 , $p=.05$ and $.02$. Further, boys made more mentions of the story protagonist's emotions than did girls: (boys $M=1.35$, girls $M=.38$, $F(1,37)=11.57$, $p=.002$). This gender effect in affect talk during storytelling appeared to come from boys' greater mentions of negative emotions than girls: boys $M=1.25$, girls $M=.29$, $F(1,37)=12.38$, $p=.001$, whereas the frequency of positive emotions was same for both gender groups (boys $M=.10$, girls $M=.10$). Moreover, boys appeared to produce more associative talk than girls during storytelling: boys $M=2.25$, girls $M=.95$; $F(1,37)=4.79$, $p=.04$. No significant culture \times gender interaction appeared for any of the variables.

In order to examine the consistency of children's conversational styles across different tasks at an individual level, we calculated simple correlations between memory and story codes for children across the entire sample and within each cultural group. The overall average correlation between children's memory and story codes achieved a moderate magnitude: $r=.28$ (US: $r=.20$; China: $r=.31$).

Contingencies between mothers' and children's talk

Past work (e.g. Fivush & Fromhoff, 1988; Reese et al., 1993; Tessler & Nelson, 1994) has suggested that elaborations and repetitions were the two key elements in delineating maternal styles and children's contributions in narrative conversations. Reese et al. (1993) used contingency analyses and found that in order to "keep the story going", high-elaborative mothers were more likely to provide embellished information than low-elaborative mothers when their children were not recalling. In the present study, we were interested in extending this type of analysis to capture the *bi-directional* nature of mother-child conversation. That is, we wished to examine how both mothers and their children used elaborations and repeti-

tions in response to each other's use of one or the other type of utterance.

Specifically, what was the likelihood of children's providing an elaborative versus repetitive response following elaborative or repetitive inquiries from their mothers? Conversely, what was the likelihood of mothers' producing elaborations versus repetitions immediately following elaborative or repetitive responses from their children? Moreover, how might the patterns of such contingencies differ across culture and gender? To answer these questions, we counted mothers' and children's different responses as a function of their partner's previous utterances. For example, following children's elaborations, we counted mothers' elaborations, repetitions, and other responses. We then calculated the conditional probabilities of mothers' elaborations or repetitions in reply to children's either elaborative or repetitive responses, as well as the conditional probabilities of children's elaborations or repetitions in reply to mothers' either elaborative or repetitive inquiries (Bakeman & Gottman, 1986; Reese et al., 1993).⁶

The conditional probabilities of mothers' and children's elaborations and repetitions in memory talk and storytelling are illustrated in Table 3 by cultural group, together with the F and p values of the main effect of culture from 2 (culture) \times 2 (gender) ANOVA analyses.

The culture effect for conditional probabilities of mothers' reply was consistent in memory talk and storytelling. Following children's elaborations, American mothers showed greater probabilities of elaboration and smaller probabilities of repetition than Chinese mothers. Further, while American mothers were more likely to provide elaborations and less likely to use repetitions after their children's elaborative responses, memory $t(20)=7.62$, $p<.0001$; story $t(2)=6.82$, $p<.0001$, Chinese mothers were equally likely to use the two types of inquiry, memory $t(19)=1.05$, $p=.31$; story $t(19)=1.26$, $p=.22$. The same pattern of

⁶ In the contingency analyses, conditional probabilities for memory talk were collapsed across the two events discussed. In calculating both mothers' and children's elaborations, we included an "elaboration-only reply" and an "evaluation-plus-elaboration reply sequence" following the partner's evaluative or repetitive response. In calculating repetitions, we included a "repetition-only reply" and an "evaluation-plus-repetition reply sequence" (Reese et al., 1993, p. 418). Reese et al. (1993) used a similar method to calculate conditional probabilities for mothers' utterances only. For more information about conditional probabilities, see Bakeman and Gottman (1986).

TABLE 3
Conditional probabilities (and standard deviations) of mothers' and children's elaborations and repetitions by cultural group

	America	Memory China	F (1,37)	p	America	Story China	F (1,37)	p
<i>Mother's reply</i>								
Following child's elaborations								
Elaboration	.59 (.12)	.46 (.24)	4.46	0.04	.68 (.21)	.50 (.12)	11.59	0.002
Repetition	.21 (.13)	.36 (.20)	7.37	0.01	.18 (.15)	.42 (.16)	27.47	<.0001
Following child's repetitions								
Elaboration	.63 (.20)	.43 (.24)	8.59	0.006	.68 (.20)	.45 (.22)	11.79	0.001
Repetition	.26 (.15)	.45 (.23)	9.69	0.004	.24 (.18)	.47 (.19)	15.12	0.0004
<i>Child's reply</i>								
Following mother's elaborations								
Elaboration	.47 (.13)	.40 (.14)	2.61	0.11	.59 (.15)	.48 (.18)	4.62	0.04
Repetition	.21 (.09)	.16 (.13)	1.74	0.19	.22 (.12)	.19 (.18)	0.39	0.53
Following mother's repetitions								
Elaboration	.47 (.13)	.24 (.17)	23.39	<.0001	.57 (.23)	.35 (.16)	13.04	0.0009
Repetition	.28 (.18)	.33 (.21)	0.73	0.40	.23 (.18)	.46 (.24)	12.31	0.001

F and *p* values refer to two-way ANOVAs for the main effect of culture.

cultural differences appeared following children's repetitions, i.e., American mothers showed greater probabilities of elaboration and smaller probabilities of repetition than Chinese mothers during both memory talk and storytelling. Moreover, American mothers were still more likely to reply with elaborations than with repetitions even following children's repetitive responses, memory $t(20) = 5.19, p < .0001$; story $t(20) = 5.40, p < .0001$, whereas Chinese mothers appeared to be equally likely to provide elaborative and repetitive responses after children's repetitions, memory $t(19) = -.21, p = .84$; story $t(19) = -.16, p = .87$.

The conditional probabilities of children's reply also showed the same pattern of cultural differences in memory and story tasks. Following mothers' elaborative inquiries, children in both cultural groups were more likely to respond with elaborations than with repetitions: US: $t(20) = 5.88$ and $6.96, p < .0001$ and $p < .0001$ for memory and story respectively; China: $t(19) = 5.55$ and $4.28, p < .0001$ and $p = .0004$ for memory and story respectively. However, American children were significantly more likely than their Chinese peers to elaborate on mothers' elaborations during storytelling. Also, as demonstrated in Table 3, following mothers' repetitions, American children showed greater probabilities of elaboration and smaller probabilities of repetition than Chinese children in both forms of conversation. Further, American children were still more likely to provide elaborations than repetitions even in response to their mothers'

repetitive inquiries when discussing memory events and telling and story, memory $t(20) = 3.75, p = .001$; story $t(20) = 4.26, p = .0004$; whereas Chinese children appeared to be equally likely to respond with repetitions and elaborations following their mothers' repetitive prompts, memory $t(19) = -1.40, p = .18$; story $t(19) = -1.31, p = .20$.

The ANOVA analyses revealed a few gender differences. For conditional probabilities of mothers' reply, compared with mothers of sons ($M = .46$), mothers of daughters ($M = .59$) were more likely to reply to children's repetitions with an elaboration in memory talk at a marginal level of significance, $F(1,37) = 3.43, p = .07$. Conversely, mothers of sons ($M = .41$) were marginally more likely than mothers of daughters ($M = .30$) to respond to children's repetitions with a repetition when telling the story, $F(1,37) = 3.28, p = .08$. No significant gender difference was found in conditional probabilities of children's reply.

There was a significant culture \times gender interaction effect in the conditional probability of mothers' repetitions following children's elaborations during story telling, $F(1,37) = 4.69, p = .04$. Inspection of the means indicates that American mothers of sons ($M = .20$) and mothers of daughters ($M = .16$) did not differ in their likelihood of replying to children's elaborations with a repetition, whereas Chinese mothers of daughters ($M = .50$) were more likely than mothers of sons ($M = .34$) to reply to children's elaborations with a repetition, $t(18) = 2.51, p = .02$, corrected $p = .04$.

A significant interaction effect was also found in the conditional probability of children's elaborations following mothers' elaborations during storytelling, $F(1,37) = 4.68$, $p = .04$. Inspection of the means indicates that American girls ($M = .66$) were more likely than American boys ($M = .52$) to provide elaborations in response to mothers' elaborations, $t(19) = 2.34$, $p = .03$, corrected $p = .06$, whereas Chinese girls ($M = .45$) and boys ($M = .52$) did not differ on this variable.

Consistency between mothers' and children's conversational styles

In addition to between-group differences, we were interested in whether the conversational styles of mothers and children in the same dyads resembled each other. For example, did mothers who provided many elaborations tend to have children who gave elaborative responses? Did mothers who tended to repeat questions have repetitive children? Simple correlations between mothers' and children's conversation codes were computed and are listed in Table 4.

For memory conversation codes, there were significant correlations between mothers' and children's total number of codes, elaborations, repetitions, didactic talk, associative talk, and off-topic talk. The average correlation between mothers' and children's memory codes was .51. Similarly, for story codes there were significant correlations between mothers' and children's total number of codes, repetitions, evaluations, associative talk, metacognitive comments, and off-

topic talk. The average correlation between mothers' and children's story codes was .43.

As Table 4 illustrates, this same pattern of significant correlations between mother and child talk appeared in both cultural groups. Between American mothers and children, the average correlation was .51 for memory codes and .45 for story codes. Between Chinese mothers and children, the average correlation was .51 for memory codes and .47 for story codes. The only substantial difference in mother-child consistency between the two cultural groups appeared in the case of metacognitive talk about the story. Codes for this kind of talk were highly correlated for Chinese mothers and children whereas they were not significantly correlated for American mothers and children.

Excerpts from mother-child memory talk and storytelling

The following illustrative excerpts from memory and story conversations of mother-child dyads help to demonstrate the content and stylistic differences in memory talk and storytelling between the two cultural groups. The following two selections were taken from memory conversations between an American mother-daughter dyad and a Chinese mother-daughter dyad.

American dyad

M: What did we do when you went camping?

C: At the beach.

M: Uh-huh.

TABLE 4
Simple correlations between mothers' and children's conversation codes

Variable	Memory			Story		
	America (<i>n</i> = 21)	China (<i>n</i> = 20)	Total (<i>n</i> = 41)	America (<i>n</i> = 21)	China (<i>n</i> = 20)	Total (<i>n</i> = 41)
# Codes	0.78****	0.78****	0.79****	0.78****	0.70***	0.71****
# Codes per conversational turn	0.36	0.06	0.17	0.22	0.18	0.17
Elaborations	0.57**	0.22	0.39**	0.36	0.06	0.19
Repetitions	0.66***	0.84****	0.73****	0.80****	0.77****	0.73****
Evaluations	0.26	0.46*	0.23	0.78****	0.73***	0.72****
Affect	0.42	0.09	0.24	0.03	0.21	0.07
Didactic	—	0.89****	0.90****	0.33	0.02	0.14
Autonomy	0.07	0.36	0.24	0.16	0.38	0.10
Associative	0.89****	0.58**	0.82****	0.65***	0.58**	0.59****
Metacognitive	0.17	0.42	0.16	0.05	0.83****	0.42**
Off-topic	0.90****	0.86****	0.93****	0.83****	0.69***	0.87****

* $p < .05$, ** $p < .01$, *** $p < .001$, **** $p < .0001$.

- C: And a big rock of I couldn't get up and so Dad had to carry me.
 M: Daddy carried you up that big rock.
 C: Yeah, um and Daddy was fine.
 M: Oh yeah, he was just fine. And what about um was it a beautiful sunny day we had our picnic?
 C: Yeah, um and it started to rain.
 M: And then what happened?
 C: The sun came up again.
 M: But we had to go back through the woods, right?
 C: Yeah.
 M: Where did we sleep when we went camping?
 C: In the tent!
 M: In a tent. And what did we climb inside?
 C: Sleeping bags.
 M: And you have you very own, don't you? Yeah. Is there anything else about camping that you really liked?
 C: Swimming.
 M: Swimming. And how about the camp fire? did you like the fire? What did we cook over the fire? Marshmallows, right?
 C: Marshmallows! Yummy!

Chinese dyad

- M: Do you remember that Mom took you to the Fandole park last time?
 C: I remember.
 M: Tell Mom what were there in the Fandole?
 C: There were toys.
 M: What else?
 C: There was food.
 M: Right. When we went to the Fandole park, did you ask Mom to carry you on the way?
 C: I didn't. If I got tired, I would still keep on going ahead bravely.
 M: Oh, right. When we rode on the bus, what did you see? We saw big wide roads. What else?
 C: We also saw a big round circle.
 M: Right. What else did we see on the way there?
 C: Um.
 M: Tell Mom, when a Mom takes her child to cross the street, where should they look?
 C: Look to their left and right. Look at the zebra lines.
 M: Right. We must walk on the zebra lines. Did you behave well that day?
 C: Yes.

The following two selections were story conversations between an American mother-son dyad and a Chinese mother-son dyad about the episode when bear and bear mom went shopping at the market.

American dyad

- M: They go shopping. There, they are all shopping. See the bread, and it looks like soup.
 C: That was that was look like oranges.
 M: Yeah, you're right. Look at all the people at the store. And there, they went to go buy some fruit. Some bananas and some oranges.
 C: Um, um, um are they shaped like a ban gun?
 M: Yeah, they do look like a banana gun. Who eats bananas in "Busy Body"? Oh, it looks like bear Mom needed tomatoes. They went and got tomatoes at the store.
 C: Why that's a lot of tomatoes.
 M: That's right. Then they go and buy some bread. Yum!
 C: Cookies! Cookies!
 M: Fruit and bread and cookies and rolls.
 C: I like cookies.
 M: You like cookies?
 C: Yep.

Chinese dyad

- M: Oh, they come to a store. In the store, what are there in the store?
 C: Yummy things.
 M: What kinds of yummy things?
 C: Ice cream, egg roll.
 M: How come there is ice cream? What's this?
 C: A flower.
 M: Aren't they bananas?
 C: Bananas.
 M: What are these?
 C: Apples.
 M: What about these? Peaches, right?
 C: Peaches.
 M: Right. What did Mom choose? Oh, what are these?
 C: Oranges.
 M: Are they eggs or oranges?
 C: I don't know.

As revealed in both the memory and story excerpts, American mothers tended to elaborate on their children's speech whether or not the children had just provided new information. American mothers also showed concern about their children's predilections, opinions, and feelings. Correspondingly, American children provided much new information and made spontaneous comments about their own preferences and judgements. Although it was still the mother who played the dominant role during conversations, the co-construction of memories and stories between American mother-child dyads revealed a solid partnership.

In comparison, Chinese mothers often attempted to elicit new information from their children by posing direct, unembellished questions. When their children failed to respond with the new information they desired, Chinese mothers tended to simply repeat their original questions without further elaboration. Chinese mothers also showed great concern with moral rules and behavioural standards. In accordance, Chinese children tended to provide little or no information in response to their mothers' inquiries, and made spontaneous comments about proper conduct and moral character. Overall, memory and story conversations between Chinese mother-child dyads resembled memory "tests", reflecting a hierarchy between examiner and child.

DISCUSSION

The present study represents the first systematic observation of mother-child narrative practices in both China and the United States across two different tasks. The data illustrate critical differences in the style with which parents and children co-construct memories and stories in the two cultures, as well as the content of such conversations. This empirical evidence of differences in the context in which children learn to construct memory and story narratives provides an important missing link between work on early narrative memories among children and later memories of childhood among adults.

Past work on autobiographical memory in China and the United States has suggested that both the social content and cognitive structure of adults' childhood recollections differ between these cultures (Wang, 1999; Wang et al., 1998). Further, narrative memories of preschool-aged Chinese and American children have shown stylistic and content differences consistent with adult findings (Han et al., 1998; Wang & Leichtman, *in press*). These memory differences accord with the more independent orientation of US culture generally versus the more interdependent orientation in China (Markus & Kitayama, 1991; Wang & Leichtman, *in press*). Recent studies have further indicated that across cultures, mother-child conversations about the personal past differ in content, consistent with different cultural values and socialisation practices (e.g., Mullen & Yi, 1995; Miller et al., 1996, 1997). The present study builds on this suite of findings, comparing

for the first time both the style and content of mother-child conversations about personal memories and fictional stories in two divergent cultures.

The present findings indicate two important dimensions of narrative upon which American and Chinese mother-child dyads were similar. First, mothers in both cultures had a similar volume of overall talk with their children on both the memory and story tasks according to the three different criteria adopted. Children, in turn, showed no volume differences. This finding accords with past research indicating no differences in overall volume for children in the two cultures when they were prompted for personal and story memories (Han et al., 1998). Second, American and Chinese mothers did not differ in how often they introduced new topics, moved the conversation to new aspects, or provided new information; elements coded as elaborations. neither did children's elaborations differ between the two cultures during storytelling (although for both mothers and children, the contingency analyses revealed differences in the way such elaborations were used). Such null results are interesting, given speculation that overall volume of discussion about past events, and the degree to which such discussions incorporate elaborations, may typically differ between independent and interdependently oriented cultures, especially among adults (Pillemer, 1998; Wang, 1999). The nature of the tasks and the very young age of the children in the present study, in which mothers and children were directed to discuss memories and stories, may contribute to such similarity in the sheer amount of volume and degree of elaboration. The present data may not reflect all the potential variation in the volume and elaboration of naturally occurring conversations of this type between Chinese and American mother-child dyads.

In spite of the similarities just discussed, results of the present study suggest a number of ways in which the co-construction of personal memories and stories may differ between American and Chinese mother-child dyads. In contrast with American mothers, Chinese mothers more often tended to elicit children's memory responses and story information by simply repeating an initial question again and again. Correspondingly, Chinese children provided less memory information when talking about shared past experiences than did American children, although the two groups of children contributed equally to storytelling.

Analyses of the contingencies between mothers' and children's conversations further demonstrated cross-culture differences in mother-child co-constructions of past events and the story. During both memory talk and storytelling, American mothers were significantly more likely than Chinese mothers to elaborate whether or not their children were providing any new information. In contrast, Chinese mothers were more likely than American mothers to reply with a repetition following both the child's elaborative and repetitive responses. Also, regardless of what kinds of response children gave, American mothers consistently provided embellished or detailed information and elaborated on their children's responses, whereas Chinese mothers appeared to be equally likely to either provide elaborative information or to repeat their questions again and again, without adjusting their responses according to whether their children were providing any new information.

Similar patterns of cultural differences were revealed in the conditional probabilities of children's conversations, especially following mothers' repetitions. In both forms of conversation, compared with their Chinese peers, American children were more likely to provide memory information in response to their mothers' repeated inquiries and less likely to either repeat their own or their mothers' previous utterances or simply respond with "I don't know". Also, American children were more likely than Chinese children to provide new information following their mothers' elaborations during storytelling. Like their mothers, American children consistently provided elaborative responses no matter what kinds of inquiries mothers employed. In contrast, Chinese children tended to elaborate only when their mothers made elaborative inquiries and tended to repeat their own or their mothers' previous utterances following repetitive prompts.

This pattern of analyses suggests that American mothers and children resembled each other and Chinese mothers and children resembled each other, with marked differences between the two cultural groups. The high correlations between mothers' and children's conversation codes, both across the entire sample and within each cultural group, further supported the idea of stylistic consistency between mothers and children. Notably, there was some evidence that both mothers and children used the same conversation style in the two tasks, although inter-task correlations only attained moderate levels.

Taken together, American and Chinese mother-child dyads employed different narrative styles in conversational interactions. By age 3, children in these two cultures had already adopted their mothers' style of conversation when talking about shared past events and stories. Conversations between American mother-child dyads were co-operative partnerships in which the mother and the child each took an active role in providing information, elaborating on and supplementing each other's responses, together keeping the conversation going. In contrast, conversations between Chinese mother-child dyads tended to be hierarchical, with the mother playing the central and directive role. Chinese mothers posed and repeated questions in order to elicit memory and story information from their children without providing embellished information and following up on the child's responses, while Chinese children often simply replied to their mother's inquiries without giving any new information.

The contingency analyses also revealed a much stronger pattern for the maternal responses to children's talk than for the children's responses to maternal talk, suggesting that mothers were responding more differentially as a function of culture than were their children. It appears that American and Chinese mothers were creating different narrative environments in which children were learning to formulate stories of themselves and of the world, and gradually taking over their mothers' values and styles. The narrative environment of Chinese children is typically more repetitive and didactic than that of American children, in which there is more emphasis on elaboration and autonomy. We speculate that as children play an increasingly active role in the co-construction of shared memories and stories, the cultural differences in their contributions become larger and more stable.

The differences identified in the present study between American and Chinese mothers mirror those described in previous studies with American samples between high-elaborative and low-elaborative mothers (e.g., Fivush, 1991; Fivush & Fromhoff, 1988; Reese et al., 1993, 1996). High-elaborative mothers view the purpose of remembering as to collaboratively recreate stories about shared experiences, whereas low-elaborative mothers tend to see the conversations as a forum for their children's memory performance. The present study further indicates that children in both cultural groups seemed to have obtained from their mothers different views of such con-

versations of sharing memories and telling stories. It is the dynamic interaction between the mother and the child that contributes to the formation of culture-unique style of conversations.

Compared with Chinese mothers, American mothers provided more evaluative comments on children's replies when talking about the past events. This cultural difference is again consistent with findings from previous studies with American samples where high-elaborative mothers are more likely to provide evaluations of children's previous utterance than low-elaborative mothers (e.g., Fivush & Fromhoff, 1988; Reese et al., 1993).

In the present study, we did not find cultural differences in the number of comments mothers produced on children's or the story protagonist's feeling states. However, American children made more references to the story protagonist's emotions, both positive and negative, than did Chinese children. This result is inconsistent with findings from our previous study (Wang & Leichtman, in press) where Chinese children made more mentions of story protagonists' feeling states than American children when making up stories in front of an unfamiliar adult. We speculate that test situations as well as particular story episodes employed may influence children's emotional expressiveness and lead to variations between studies. Future research would be necessary to further address this issue.

In accordance with our predictions, American mothers made more comments on the child's and the story protagonist's personal preferences, judgements, and opinions, whereas Chinese mothers referred more frequently to moral rules and behavioural standards during both memory talk and storytelling. These findings, as well as those from other recent comparative studies (Miller et al., 1996, 1997; Mullen & Yi, 1995; Wang & Leichtman, in press), indicate that narrative practices serve different functions in American and Chinese families that correspond with divergent socialisation goals between these two cultures. American parents often use everyday co-narrated personal storytelling as a means of reinstating a sense of self and encouraging autonomy in their young children. In contrast, Chinese parents tend to use such conversations as a didactic instrument to convey to their children social norms and behavioural standards such as obedience to authority, appropriate conduct, and responsibility towards others. As Pillemer (1998) points out, "Parents' implicit or explicit commu-

nicative goals influence which functions will assume center stage in the child's own memory operations" (p.129).

Correspondingly, American children in our sample also provided less didactic talk and more autonomy talk than Chinese children in both the memory and story tasks, which is consistent with findings of our previous study where children talked about personal memories and produced fictional stories with an unfamiliar adult (Wang & Leichtman, in press).

In comparison with Chinese mothers, American mothers made significantly more metacognitive comments about their own or their children's cognitive states and performance during storytelling (e.g., knowing, understanding, guessing, etc.). The same trend of cultural difference was also found in mothers' speech during memory talk, where American mothers tended to make more metamemory comments than did Chinese mothers (e.g., remembering and forgetting). These results seem to suggest that American mothers showed unwittingly greater encouragement with their children to reflect on their mental process of knowing and remembering, at least in the context of sharing memories and telling stories, than did Chinese mothers.

Both American mothers and their children produced more off-topic talk during memory and story conversations than their Chinese counterparts. American children often got "off-track" during the conversations and their mothers tended to participate in such off-topic talk instead of restricting it. This finding seems to be associated with different socialisation attitudes towards spontaneous speech or behaviour between these two cultures. American parents view spontaneity as benevolent rather than dangerous, and tend to encourage it in their children (Wolfenstein, 1955). In contrast, Chinese parents tend to regard children's spontaneous speech or behaviour as undisciplined impulse that needs to be controlled in order for children to develop an early sense of conformity (Ho, 1986; Wu, 1996).

Chinese children in the present study all came from only-child families, which is the most common family situation currently in China, whereas none of the American children was an only child. Some scholars have noted differences between Chinese only-children and those with siblings, asserting that the copious adult attention paid to only-children within the family produces more egotistical offspring (Lee, 1992; Fan, 1994). Indeed, our previous work has indicated that

Chinese young adults from only-child families were more “individually-oriented” than those with siblings, describing themselves in more self-focused terms, and providing earlier and more self-focused childhood memories (Wang et al., 1998). Thus, including a sample of only-child Chinese children would appear to work against our hypotheses, which predicted a generally more interdependent-orientated narrative style and content between Chinese mother-child dyads than Americans. Nonetheless, we documented cross-cultural variations between American and Chinese mother-child dyads in the predicted direction.

The stylistic and content differences between American and Chinese mother-child conversations in the present study accord with our previous findings in children’s autobiographical report (Han et al., 1998; Wang & Leichtman, in press) and storytelling (Wang & Leichtman, in press). With regard to narrative style, Chinese and American preschool children’s autobiographical narratives were comparable in volume but Chinese children’s narratives were less descriptive, less specific, and less evaluative. In comparison with the “fleshed-out” accounts of the American children, the Chinese children’s narratives contained more “bare-bones” accounts of their activities (Han et al., 1998). With regard to narrative content, Chinese children showed greater concern with moral correctness and a less autonomous orientation than their American peers in both their memory and story narratives (Wang & Leichtman, in press). These stylistic and content parallels between mother-child memory and story conversations and children’s own autobiographical report and storytelling suggest that early social-linguistic environments are an important source from which children learn to remember experiences and construct realities.

A few gender differences emerged in the present study. In both cultural groups, although mother-son dyads tended to have lengthier conversations than mother-daughter dyads as indexed by their total number of conversational turns, mothers tended to talk longer with their daughters within each conversational turn. Further, compared with mothers of sons, mothers of daughters were more likely to elaborate even when their children were not recalling any new information during memory talk. Mothers of sons were more likely than mothers of daughters to repeat their questions when children did not provide information during storytelling. Corre-

spondingly, boys used more repetitions than girls during storytelling. These results accord with other research showing that parents use more elaborative narrative styles with daughters than with sons and girls provide more elaborated narratives than boys (Fivush, 1998; Haden et al., 1997; Reese et al., 1993, 1996). The results are also consistent with adult studies conducted in both America and East-Asia in which females tend to report more voluminous and elaborative personal narratives than men (Mullen, 1994; Wang et al., 1998).

Gender differences in affect talk were intriguing. Mothers of sons referred more frequently to their children’s positive emotions during memory talk than mothers of daughters, whereas mothers of daughters made more comments on the story protagonist’s negative emotions than mothers of sons. These results seem to indicate that mothers were more concerned with their sons’ positive emotions, while they tended to emphasise empathy of others’ negative feeling states to their daughters. Among the children, there was no significant gender difference in reporting emotion related to personal memories, consistent with past results focusing on children of the same age in conversation with their parents (Fivush, 1998; Kuebli, Butler, & Fivush, 1995). However, boys made more mentions of the story protagonist’s negative emotions than did girls, appearing to be more concerned than girls with the negative emotions of the main character *Bear* when he was frustrated or his personal needs were not satisfied. These findings are consistent with different social expectations towards gender roles in both cultures, where girls are reared to be more socially sensitive, affectionate, and caring than boys (Dunn, Bretherton, & Munn, 1987; Fivush, 1998; Maccoby, 1974; Hsu, 1970; Lin, 1939).

More gender differences were found in mothers’ associative talk and metacognitive comments during storytelling, where mothers of sons scored higher on both variables than mothers of daughters. Accordingly boys in both cultural groups produced more associative talk than girls when telling the story. These results contrast with Reese et al.’s (1993) data in which American mothers of sons and daughters had similar frequencies of associative talk and metacognitive comments. We hesitate to speculate on the reason for this discrepancy, and understanding the origin of potential gender differences on these measures may well require future research. Nonetheless, we find it noteworthy that these gender differences in

associative talk and metacognitive comments, as well as those reported earlier, showed a consistent pattern in the two cultures.

A few significant culture by gender interactions arose from the contingency analysis of the story-telling task. In the Chinese group, mothers of daughters were more likely than mothers of sons to repeat their previous question following children's elaborative response, whereas American mothers did not differ in this likelihood with their sons and daughters. On the other hand, American girls were more likely than American boys to provide new information in response to mothers' elaborations, whereas no gender difference was found between Chinese boys and girls in this variable. Future studies will be necessary to clarify the reasons for these gender differences.

Overall, gender differences were fewer and of a smaller magnitude than cultural differences. Generally, gender differences were main effects, not qualified by culture by gender interactions. Some gender researchers have described differences between men and women along a continuum from independence to interdependence, with men exhibiting greater independence and women exhibiting greater interdependence in their social orientations (e.g., Cross & Madson, 1997). We do not believe that this continuum is equivalent to the independent-interdependent distinction across cultures that was our focus in the present study. For example, the great degree of elaborativeness in women's autobiographical narratives is believed to be linked with their orientation towards relationship and interdependence; whereas the great degree of elaborativeness in Westerners' autobiographical narratives is believed to be linked with their orientation towards independence and an autonomous self. Moreover, in the present study, we found cultural differences but not gender differences in didactic and autonomy codes, the two codes that are arguably the most effective index of independence versus interdependence of social orientation. Thus, we believe that it is important to consider gender and cultural effects within different theoretical frameworks.

In conclusion, the present study indicates that young children learn from their mothers how to talk and what to talk about during joint parent-child constructions of personal experiences and fictional stories. The differentiated content and styles of conversation reflect cultural values and socialisation goals embedded in the surrounding society and the immediate narrative environment.

The highly elaborative, independently oriented conversational style of American mother-child dyads is well suited to the goal of facilitating the development of children's autonomy and autobiographical remembering. In contrast, the low-elaborative, interdependently oriented conversational style of Chinese mother-child dyads conveys to children social norms and behavioural standards to build affiliation with the larger society and downplays the use of memory to construct one's unique personal history. Thus, the content and stylistic differences we found in memory conversations between Chinese and American mother-child dyads may contribute to differences in the age and content of earliest childhood memories between American and Asian populations. Future studies will be required to document the effects of different styles of storytelling on children's subsequent story memories.

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