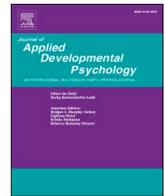




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Decontextualized language use during Chinese and American caregiver-child interactions

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ABSTRACT

Caregivers' use of decontextualized language (DL), language that is abstract or removed from the here and now, supports preschool-aged children's language, cognitive, and social-cognitive development. Studies comparing caregiver-child DL across cultures have focused primarily on one type of DL—past narratives. Very few studies have examined cross-cultural similarities and differences in talk about the future and explanations. The current study compared Mainland Chinese and American families' use of DL during snack time conversations between caregivers and preschool-aged children. Participants were 40 Chinese and 36 American families. DL was an integral part of routine conversations in both cultures. However, we found striking cross-cultural differences in the amount and content of future talk and explanations. We argue that the divergent patterns of DL use may reflect unique cultural beliefs and socialization goals in each culture. We also consider how cultural patterns of DL use may have implications for preschool-aged children's development.

Social interactionist theorists posit that children learn through their interaction with the social world, especially with their caregivers (Bruner, 1983; Vygotsky, 1978). The quantity and quality of caregiver communicative input are associated with children's language development (e.g., Huttenlocher, Vasilyeva, Cymerman, & Levine, 2002; Rowe, 2012a; Weizman & Snow, 2001). One form of caregiver input positively associated with preschoolers' language, cognitive, and social-emotional outcomes is decontextualized language (DL), language that is abstract or removed from the here and now, such as reminiscing, envisioning future events, and providing explanations (Bruner, 1972; Curen-ton & Justice, 2004; Dickinson & Tabors, 2001; Leech, Wei, Harring, & Rowe, 2018; Rowe, 2012a, 2013; Snow, 1983). Families' use of DL also reflects cultural beliefs and serves as a powerful mechanism for early socialization (Aukrust & Snow, 1998; Heath, 1983; Miller, Fung, Lin, Chen, & Boldt, 2012). Though families across cultures engage in many types of DL, cross-cultural comparisons of DL have mostly focused on reminiscing. In the current study, we systematically investigated cultural similarities and differences in various types of DL used during Chinese and American caregiver-child interactions, with a focus on future talk and explanations, in addition to reminiscing.

Decontextualized language and preschoolers' development in western, English-speaking populations

In the Western context, caregivers' use of DL is found to support preschool-aged children's language, cognitive, and social-emotional development. The frequency of parents' DL is positively associated with children's production of DL (Beals, 2001; Hudson, 2004, 2006; Katz, 2001), vocabulary knowledge (Rowe, 2012a, 2013), syntactic skills (Demir, Rowe, Heller, Goldin-Meadow, & Levine, 2015), narrative competency (Demir et al., 2015), emergent literacy skills (Beals, 2001), and even academic language proficiency in mid-adolescence (Uccelli, Demir-Lira, Rowe, Levine, & Goldin-Meadow, 2018). The styles in which Western, English-speaking parents support children's reminiscing predict children's narrative and emergent literacy skills. Parents who adopt a high-elaborative style tend to supply rich event details and encourage children's participation in reminiscing using open-ended questions and positive feedback. In contrast, low-elaborative (or more didactic) parents use more closed-ended and repetitive questions and fewer open-ended questions and affirmations. High-elaborative parents tend to have children with stronger narrative skills (Reese & Newcombe, 2007; Waters, Camia, Facompré, & Fivush, 2019 for a meta-analysis) and emergent literacy competence (Leyva, Reese, Grolnick, & Price,

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2008; Leyva, Reese, & Wiser, 2011; Sparks & Reese, 2013). Moreover, training parents on elaborative reminiscing techniques (e.g., using open-ended questions and positive feedback) promotes children's narrative skills (Peterson, Jesso, & McCabe, 1999; Reese, Leyva, Sparks, & Grolnick, 2010; Reese, Macfarlane, McAnally, Robertson, & Taumoepeau, 2020; Reese & Newcombe, 2007; see Corsano & Guidotti, 2019 for a review).

Parent-child DL conversations are also associated with developmental outcomes beyond oral language, such as autobiographical memory (Nelson & Fivush, 2004; Reese et al., 1993), self-representation (Wang, Doan, & Song, 2010), theory of mind (ToM) (Taumoepeau & Reese, 2013), understanding of emotions (Garner, Jones, Gaddy, & Rennie, 1997; Laible, 2004), and emotional regulation (Leyva, Reese, Laible, Schaughency, Das, & Clifford, 2020). For instance, in Taumoepeau and Reese (2013), parents were taught elaborative reminiscing strategies between child age 21 and 29 months. This training facilitated the ToM skills of children who had lower vocabulary skills at baseline (19 months). Additionally, parental elaborations about past emotions and explanations of emotions were positively related to children's understanding of emotions and emotional regulation skills (Garner et al., 1997; Laible, 2004; see Salmon & Reese, 2016 for a review). Van Bergen, Salmon, Dadds, and Allen (2009), for example, trained parents to engage in emotion-rich, elaborative reminiscing with preschoolers, which increased parents' and children's discussion of emotional states, causes, and emotion-laden behaviors (e.g., crying). Six months post-training, children with trained parents showed more advanced knowledge about causes of emotions than those with parents in the control group.

In sum, correlational and intervention studies based on Western, English-speaking families have shown that parents' use of DL plays an important role in children's language, cognitive, and social-emotional development. However, studies on the developmental implications of DL in non-Western cultures and non-English-speaking populations are rare and predominantly focused on one type of DL, past narratives (see Reese & Neha, 2015 on past narratives in Māori families, Leyva and colleagues' work on past narratives in Chilean families, 2014, 2015, 2016, and Wang and colleagues' studies on past narratives in Chinese families, 2006, 2010). For example, Leyva and Smith (2016) found that Chilean parents' narrative styles in joint reminiscing about negative experiences was associated with children's print knowledge. Beyond past narratives, we have less information about how other types of DL, such as future talk and explanations, contribute to children's development. Delineating cultural similarities and variations in these types of DL is a critical starting point for further understanding their effects. In the next section, we review the literature on cultural patterns of DL, beginning first with similarities and differences in past narratives and then turning to future talk and explanations.

Cultural patterns of decontextualized language use

Cultural variations in past narratives

Families in many cultures around the world discuss past experiences (Blum-Kulka & Snow, 1992; Melzi, 2000; Miller, Wiley, Fung, & Liang, 1997; Mullen & Yi, 1995; Tôugu, Tulviste, Schröder, Keller, & De Geer, 2011). Despite its ubiquity, caregiver-child past narratives vary dramatically across cultures, and these variations reflect distinct cultural beliefs and socialization goals. Hence, past narratives serve as a powerful medium for early socialization (Aukrust & Snow, 1998; Blum-Kulka & Snow, 1992; Flannagan, 1996; Heath, 1983; Wang & Leichtman, 2000). For instance, families from different cultural backgrounds differ in the events they recount. Israeli parents and their preschoolers tended to discuss past events known to all family members during mealtimes, but American families more often discussed events shared by the dyad but unknown to at least one other family member (Blum-Kulka & Snow, 1992). Studies have also shown that compared with caregivers from more collectivist, relationship-oriented cultures, those from more

individualistic, autonomy-oriented cultures tend to adopt different reminiscing styles (Wang, 2006, 2007). Melzi (2000), for example, found that during joint reminiscing with preschoolers, Central American mothers typically played an "active listener" role, allowing children to assume greater responsibility in recalling event details. Melzi argued that this reflected a cultural emphasis on interpersonal relations and desirable social demeanor. In contrast, European American mothers often added details to children's recall, elicited information from children using specific questions, and helped children organize coherent stories, potentially because European American parents aimed to verbally scaffold children's cognitive development (Melzi, 2000).

Multiple studies comparing past narratives in East Asian and North American families highlight a pronounced difference in the social functions of such narratives, with East Asian parents more likely to use joint narratives to teach children social conventions, roles, and desirable behaviors than their North American counterparts. Researchers interpret this difference as evidence of cultural variation in socialization goals, in particular that East Asian cultures place higher values on social relatedness, interdependence, harmony, and familial and societal hierarchy (McCabe & Chang, 2013; Miller et al., 1997; Miller et al., 2012; Minami & McCabe, 1991; Mullen & Yi, 1995; Wang, 2006; Wang & Leichtman, 2000). For example, Korean parents more frequently discussed social and moral norms during past narratives with their three-year-olds, whereas European American parents more often elicited personal thoughts and feelings from children (Mullen & Yi, 1995). Similarly, comparing naturalistic caregiver-child interactions in Chinese families in Taipei and American families in Chicago, Miller et al. (2012) found that although the number of past narrative episodes were similar between groups, past narratives served different social functions in Taipei and Chicago families. Taipei parents more often discussed their two- to four-year-olds' past transgressions during past narratives, whereas Chicago parents told personal stories to provide entertainment and affirmation. The authors proposed the following cultural explanations for these differences. First, Chinese parents value "opportunity education" (机会教育), a belief that children effectively learn social, moral, and behavioral lessons when grounded in concrete past experiences, and past narratives constitute an ideal opportunity to give children such lessons. Second, Chinese parents hold higher expectations for children's conduct and more often perceive children's misbehaviors as transgressions than their American counterparts. In contrast, European American parents aim to foster children's self-esteem and thus often adopt an affirmative stance towards children's behaviors, downplay children's misdeeds, and emphasize children's strengths and potential (Miller et al., 2012).

Cultural variations in future talk and explanations

In addition to reminiscing, caregivers also engage children in conversations about future events and provide explanations for how things work in the world. The current study takes a closer look at Chinese and American families' use of future narratives and explanations for the following reasons. First, although future and explanatory talk differ in various ways, both make reference to abstract, non-present ideas and events. Explanations clarify unobservable processes while future talk references events that are not immediately present. Second, converging evidence has suggested that narratives (past and future) and explanations are two types of DL particularly supportive of children's language development (Curenton & Justice, 2004; Demir et al., 2015; Rowe, 2012a, 2013). Western, English-speaking adults' future talk is also positively associated with preschoolers' ability to produce future language (Hudson, 2004, 2006) and engage in future-oriented decision making (Chernyak, Leech, & Rowe, 2017; Leech, Leimgruber, Warneken, & Rowe, 2019). Parents' explanations are typically rich in information (Callanan & Oakes, 1992) and positively relate to children's social-emotional skills (Garner et al., 1997). Delineating cross-cultural similarities and differences in future narratives and explanations can

serve as a critical next step towards understanding whether and how DL supports children's development across cultures.

In contrast to past narratives, it remains unknown whether and how future narratives differ across cultures. The limited body of cross-cultural studies on caregivers' explanations have focused on those targeting a particular topic, such as learning beliefs and practices (Li, 2012), scientific concepts (Callanan & Jipson, 2001), and object exploration (Rogoff, Mistry, Göncü, & Mosier, 1993). For example, Callanan and Jipson (2001) found that Mexican-descent and Anglo-American parents likewise provided rich causal explanations in response to preschoolers' *science-related* "why" questions. However, cultural variations in the overall amount (all topics combined) and composition (e.g., proportion of explanations pertaining to the physical world) of explanations are not well understood. To our knowledge, the only cross-cultural study comparing the amount and composition of explanations is a study by Aukrust and Snow (1998). They found that American families produced more explanations whereas Norwegian families produced more narrative talk during mealtimes. With respect to the topics of explanations, compared to their American counterparts, Norwegian families produced more explanations for social practices (e.g., "Those who do not work, they can get something called public assistance.") and fewer for individual behaviors (e.g., explaining what the dyad would do with a recorder) or the physical world (e.g., explaining the workings of a lightbulb). These findings were interpreted as reflecting Norwegian culture's emphasis on developing shared perspectives and a group orientation and American culture's emphasis on individualism, diversity, and civic values. Extending Aukrust and Snow's work, the present study compares both *topics* of explanations (what aspects of the world are explained) and *explications* (what reasons and expositions are invoked as explanations) across cultures. For example, when Lila asked why she should eat almonds instead of candies, her father explained: "Because these [almonds] have protein in them and these [candies] don't." This explanation received a *topic* code of "individual behavior" (why Lila should do something) and an *explication* code of "physical reality" (the father citing nutritional facts). Examining topics and explications separately allows us to uncover what was worthy of explanation in each culture (as reflected in topics) as well as what constitutes a culturally appropriate reason or exposition (as reflected in explications). Both dimensions may reflect cultural beliefs and socialization goals (Aukrust & Snow, 1998; Callanan & Jipson, 2001).

The present study

As discussed, research investigating families' DL use is largely based on Western, English-speaking populations. Less is known about DL use in other linguistic and cultural contexts. Of the studies that have explored cultural similarities and variations in DL, most have focused on past narratives, and few have examined other types of DL, such as future talk and explanations. In the present study, we systematically compare the frequency with which Chinese and American families use past talk, future talk, explanations, and other types of DL. Because of the stated gaps in the literature, we then take a closer look at the social functions of future talk and the content of explanations across cultures.

We chose to compare DL in these two societies because they are reported to hold drastically different cultural values. Specifically, the pursuit of individual autonomy and social harmony, although largely universal across cultures, are found to be differentially prioritized in Chinese and American culture. Whereas American culture, in general, is found to be highly individualistic and to value personal agency and autonomy, Chinese culture, heavily shaped by Confucian traditions, is shown to be more collectivist and relationship-oriented (Li, 2012; Varun, Grossmann, Kitayama, & Nisbett, 2010; Wang & Li, 2003). Hence, comparing naturalistic caregiver-child interactions between these two cultures may shed light on whether parents use various types of DL differentially to create culturally molded discursive environments and

socialize children into competent members of their culture and society.

This study addresses the following research questions: what are the cultural similarities and differences in the types and frequency of DL used during Chinese and American parent-child interactions? Do Chinese and American families differ in the social functions of their future talk and the content of their explanations? If so, how?

Methods

Participants

Participants were 36 American families from the Northeast US and 40 Chinese families from North China. No participating children had known developmental or language delays. English (for American children) or Mandarin (for Chinese children) was the primary language spoken at home. All participating caregivers were children's primary caregivers. American families were recruited through direct mailings and advertisements in public spaces, in parenting magazines, and on social media. Thirty-three American parents were White, two were Asian Americans (one parent was ethnically South Asian and the other was Southeast Asian),¹ and one was mixed race. On average, children were 4;4 (18 girls, 18 boys). The majority of American children were first-born ($n = 31$, 86%) and had at least one sibling ($n = 32$, 89%). Children were mostly accompanied by mothers ($n = 32$, 89%) and four by fathers (11%).

Chinese families were recruited through teachers at public and private early childhood education programs ("schools" henceforth) and through advertisements on social media. Children were 4;6 on average (24 girls, 16 boys). China's one-child policy was still in effect when the children in the sample were born and was modified to allow for a second child when these children were about one year of age. Hence, most children were first-born ($n = 37$, 93%) and only 10 (25%) had siblings. Most children were accompanied by their mothers ($n = 34$, 85%); three were accompanied by fathers (7.5%) and three by grandmothers (7.5%). In China, it is common that grandparents live with or close to their grown children and take care of the grandchildren (Chen, Liu, & Mair, 2011). All three participating grandmothers designated themselves as their grandchildren's primary caregiver.

It is important to note that this study was predominantly based upon urban, middle-class families in the US and China, and our American participants were mostly White. Research has documented enormous within-society variability in child-rearing practices and caregiver communicative input (e.g., Heath, 1983; Wang & Hsueh, 2000; Wang & Leichtman, 2000). Whether our findings are generalizable to other demographic groups within each culture (e.g., families in rural China or other ethnic groups in America) calls for further research.

Procedure

Data from the American sample was initially collected for a longitudinal training study aimed at promoting parents' use of DL with their preschoolers (Leech et al., 2018). Interactions analyzed in the current study came from a single laboratory visit that took place before families received the intervention. Families took part in a 40- to 60-min visit to the university laboratory. Dyads were first asked to have a snack together as they normally would at home, which lasted approximately eight minutes. Then children completed language and cognitive assessments (not included in the present analysis). Their parents completed a demographic survey, which asked parents to provide information about themselves (e.g., ethnicity, level of education,

¹ Given the cultural focus of this study, we also conducted our analyses excluding the two Asian American families, and our findings did not change. Considering neither family was of Chinese ethnicity, we report the analyses including those families.

occupation), their children (e.g., date of birth, ethnicity), and their households (e.g., family members in the household).

A Mandarin-native-speaking researcher (the first author) met the Chinese families at home or at the children's school. We decided against collecting data in a laboratory because the idea of participating in lab-based experiments on child development was less familiar to Chinese families than to American families. Had the study taken place in a university laboratory, Chinese caregivers would have perceived it as a normative evaluation of their parenting skills or their children's abilities, which could have influenced how they interacted with their children. Hence, we met the families at home or at the children's schools, depending on the families' preferences and school policies. Similar to the procedures American families underwent, Chinese families were videotaped having a snack together for eight minutes. Children completed assessments (not reported in the present paper) and caregivers completed a demographic questionnaire. Wilcoxon tests indicated that Chinese families' DL use at school ($n = 16$, 40%) versus that at home ($n = 24$, 60%) did not differ, $ps > 0.1$ (we discuss these comparisons across locations in more depth in the Results section). Therefore, locations were not included as a covariate in our analyses.

We chose to compare DL during snack time, a form of family mealtime, because it is an ecologically valid activity that naturally and commonly occurs in both cultures. Moreover, mealtimes represent a quintessential context for language learning and socialization, because children are exposed to various speech genres, topics, and conversational codes that extend their developing linguistic abilities (Aukrust & Snow, 1998; Blum-Kulka & Snow, 1992; Ochs, Taylor, Rudolph, & Smith, 1992). The interactions in both cultures took similar forms: parents and children shared a snack together while casually chatting. Families did not seem aware of or rushed by the 8-min time limit because none of them discussed the set duration of the snack time.

All caregivers reported their educational attainment in the following categories: middle school, some high school, complete high school, some college, college degree, or graduate school or professional degree. The categories were converted into years of formal education based on the structures of American and Chinese school systems. A Wilcoxon test showed that on average, American parents received more years of formal education than Chinese caregivers did, $M = 17.28$ and 14.68 respectively, $SD = 1.28$ and 2.15 , $W = 1259.5$, $p < .001$. The majority of American parents ($n = 35$, 96%) had a college degree, but only 22 Chinese caregivers had a college degree (55%) and 34 had a high school degree (85%). These differences were expected given the differences in educational attainment between the two countries. By 2018, over 90% of American adults aged 25 to 34 had received upper secondary education, and only less than 40% of 25- to 34-year-olds in Mainland China had (OECD, 2018). These data suggest that American and Chinese caregivers in our study received more formal education compared to the respective national averages. Within both American and Chinese samples, the correlations between caregivers' and children's DL use (overall frequency, relative proportions, and use of each specific type of DL) and caregivers' years of education did not reach significance, $ps > 0.05$, except that Chinese caregivers' years of education were negatively associated with their own and children's talk about rules and norms, $ps < 0.05$. Hence, parental education was not included as a covariate in subsequent analyses.

Transcription and coding

Transcription

Caregiver-child interactions during the snack time were transcribed verbatim by trained research assistants and then verified by additional research assistants using Codes for the Analysis of Human Language (CHAT) conventions from the Child Language Data Exchange System (MacWhinney, 2000). The unit of transcription was an utterance, defined as any sequence of words that was preceded and followed by a customary pause between sentences, an acoustic marker, an

interruption, a change in conversational turn, or a change in intonational pattern (Rowe, 2012b). The transcripts then underwent three passes of coding.

Coding categories of decontextualized language

First, we coded caregivers' and children's utterances for the following categories of DL as presented in Table 1: past talk, future talk, explanations, connections, scripts and/or routines, rules and/or norms, recalling knowledge, and other. The majority of these categories were drawn from extant literature (Curenton & Justice, 2004; Dickinson & Tabors, 2001; Leech et al., 2018; Rowe, 2012a, 2013; Snow, 1983), and two emerged from the data (rules and/or norms and recalling knowledge). The categories were mutually exclusive, except that when an explanation occurred in a dialogue about past or future events, it was coded as both past/future talk and an explanation (e.g., "I didn't want to go to school because I wanted to stay with Mommy" was coded as "past talk" and "explanation"). To ensure consistency across cultural groups, both American and Chinese transcripts were coded by two trained bilingual coders (the same applies to the two subsequent passes of coding discussed below). Twenty-five percent of each set of transcripts were double-coded, yielding high reliability, Cohen's Kappa = 0.81 and 0.88 respectively for Chinese and American transcripts.

Coding future-oriented utterances. Because we were interested in understanding how Chinese and American families discussed the future, two trained research assistants then further coded each utterance identified as "future talk" into four mutually exclusive categories based on its social function (see Table 1): elaborative talk, preparatory talk, pedagogical talk, and attention-getters, Cohen's Kappa = 0.80 and 0.83 respectively for Chinese and American transcripts. We developed these categories in light of studies on past narratives. Miller et al. (2012) found that Chinese parents frequently conveyed behavioral, social, and moral standards using past narratives. We thus created two codes, "preparatory talk" and "pedagogical talk", to capture *future-oriented* talk where caregivers convey behavioral, social, and moral lessons to children. Preparatory utterances were usually initiated by caregivers with the goal of preparing children for specific future events and ensuring that children behave appropriately and/or feel competent and safe. In our data, caregivers varied in the ways in which they used preparatory future talk. Some described the event so that children knew what to expect (e.g., "The dentist will look into your mouth. Don't worry. It won't hurt."). Some helped children rehearse appropriate actions and speech (e.g., "When you see grandma tomorrow, how would you tell her that you appreciated her gift?"). Some explicitly taught proper behaviors (e.g., "When you go to Taekwondo class next Saturday, you will listen to the teacher carefully."). Whereas preparatory talk targeted specific events, pedagogical talk referred to caregivers' future talk about social conventions and norms that were non-event-specific and generalizable in their cultural sphere (e.g., "When you grow up you should support your family."). Though children in this sample never initiated preparatory or pedagogical talk, we coded children's responses to caregiver preparatory and pedagogical talk. The category "elaborative talk", was not preparatory or pedagogical in nature; rather, it served the functions of constructing plans (e.g., "Where shall we go for lunch later?") and describing experiences (e.g., "We'll see starfish and dolphins."). Lastly, the category "attention-getters" (e.g., "Listen to the plan.") was derived from the category "placeholders" in the past narrative literature (Leyva et al., 2020) and captured caregivers' and children's attempts to keep the future-oriented conversation going.

Coding explanatory talk. We coded families' explanatory talk to determine whether its content differed across cultures. We adapted Aukrust and Snow's (1998) coding scheme (see Table 1). As was done in Aukrust and Snow, we coded the *topics* of explanations, i.e., "what aspect of the world was rendered linguistically through explanation" (p. 228). In

Table 1
Coding scheme for decontextualized language.

Category	Definition	Example
Past Talk	Talk about past events or experiences	“Did you try date nut bread at Thanksgiving?”
Future Talk	Talk about future events or experiences	
Social Function of Future Talk:		
Elaborative Talk	Future talk where interlocutors envision, co-plan, and elaborate upon future events	“What do you think we should do with the rest of our day?”
Preparatory Talk	Future talk where caregivers prepare children for specific future events; or children’s contingent responses to caregivers’ preparatory talk.	Parent: “When you see Sisi tomorrow, you should ask whether she’s ok.” Child: “I’ll ask if she’s feeling better.”
Pedagogical Talk	Future talk where caregivers explicitly discuss generalizable, non-event-specific rules and norms; or children’s contingent responses to caregivers’ pedagogical talk.	Parent: “You should take care of me when I am older and you make money yourself.” Child: “Sure.”
Attention-Getters	Future talk where one attempts to get or maintain the interlocutor’s attention and keep the future-related conversation going.	“Listen to the plan.”
Explanations	Talk drawing logical connections between objects, events, concepts, and/or conclusions, including formal and informal definitions	
Content of Explanations (Topic and Explication):		
Physical Reality	Natural phenomena or biological/chemical/physical processes/mechanisms as <i>topic</i> of explanation	“Because some insects fell on the box.” (<i>Topic</i> : why a storage box got dirty)
	Natural phenomena or biological/chemical/physical processes/mechanisms as <i>explication</i>	“Refraction means when light travels through the prism it goes in different directions.”
Individual Behaviors	Individual behaviors or actions as <i>topic</i> of explanation	“Because vegetables are nutritious.” (<i>Topic</i> : why the child had to eat her vegetables)
	Individual behaviors or actions as <i>explication</i>	“Because I watched advertisements on TV.”
Internal States	Internal states (e.g., wishes, feelings, likes, and dislikes) as <i>topic</i> of explanation	“I’m worried she might be too tired.” (<i>Topic</i> : why the child did not want to visit a teacher who’s sick)
	Internal states as <i>explication</i>	“Because you were upset about that.”
Social Practices	The <i>topic</i> of the explanation is regulating social life and/or constructing time, space, relations, roles, conventions, individual competence, and so forth as socially defined and regulated	“That means you should be kind to younger children.” (<i>Topic</i> : explaining the child’s role as a more advanced student at preschool)
	Constructing and regulating social life as <i>explication</i>	“Because you don’t go to school on weekends.” (Constructing the rhythm of the week as <i>explication</i>)
Connections	Talk connecting the present context to another time or place	“Do you like these crackers as much as you like the chocolate grahams Lily gave you?”
Scripts and/or Routines	Talk about (often recurring) scripts or routines	“What do you usually do on Music Wednesdays?”
Rules and/or Norms	Talk about generalizable social, moral, and behavioral rules and norms	“You should be considerate of others’ feelings.”

Table 1 (continued)

Category	Definition	Example
Recalling Knowledge	Talk where the parent prompts the child to recall learned knowledge or the child recalls knowledge	Parent: “Could you sing me a song you learned in preschool?” Child: “Twinkle twinkle little star.”
Other	DL that does not fit into any category above (e.g., pretense; discussing non-present persons)	“I am a pirate.” “Daddy’s out of tea and honey.” (Daddy was non-present)

addition, we coded each utterance for its *explication* (what reasons, expositions, and rationales were invoked to explain a given topic). For a given explanatory utterance, its topic code and explication code may or may not align. For instance, when a child asks why his mother put a plastic bottle into a bin, the mother might respond, “that way I can recycle it”, or “because we should protect the environment”. Both utterances would receive a topic code of “individual behavior” because the subject matter is why the parent produced a behavior. However, they would receive different explication codes, respectively “individual behavior” (recycling the bottle) and “social practices” (because “should” indicates the mother is discussing a social norm). Two trained coders achieved high reliability, Cohen’s Kappas = 0.88 (Chinese transcripts, topic), 0.84 (Chinese transcripts, explication), 0.82 (American transcripts, topic), and 0.89 (American transcripts, explication).

Results

Frequency and relative proportion of decontextualized language across cultures

To account for the variability in families’ total amount of talk, we conducted and report our analyses using both frequencies (e.g., the number of child decontextualized utterances) and relative proportions (e.g., the number of child decontextualized utterances divided by the total number of child utterances in a given transcript).

Descriptive statistics of the frequency and relative proportion of DL are reported in Table 2. The distributions of caregivers’ and children’s frequency and relative proportion of DL were skewed, so we used two-tailed Wilcoxon tests to test for group differences. The number of utterances spoken by Chinese and American caregivers during the interaction did not differ, $W = 602.5, p > .1$, but Chinese children produced more utterances than American children, $W = 428, p < .01$. Caregivers’ and children’s frequency and relative proportion of DL (all categories combined) did not differ across cultures, $ps > 0.05$. On average, DL made

Table 2
Descriptive statistics of caregiver and child decontextualized language.

	American parents (n = 36)	Chinese caregivers (n = 40)	American children (n = 36)	Chinese children (n = 40)
Total number of all utterances				
Mean (SD)	130.5 (31.76)	138.8 (41.26)	57.86 (23.27)	76.4 ** (27.63)
[range]	[77–195]	[12–207]	[18–119]	[1–134]
Total number of decontextualized utterances ¹				
Mean (SD)	43.53 (26.42)	49.48 (39.41)	16.81 (12.77)	27.10 (22.83)
[range]	[0–106]	[0–154]	[0–61]	[0–85]
Proportion of decontextualized utterances out of all utterances ¹				
Mean (SD)	33% (20%)	34% (22%)	30% (20%)	34% (24%)
[range]	[0–79%]	[0–89%]	[0–87%]	[0–87%]

Notes. “**” represents significant differences between group means, $** p < .01$, based on Wilcoxon tests.

¹ Utterances double-coded as both future/past talk and explanations were counted once only.

up 34% of Chinese caregivers' utterances, 33% of American parents' utterances, 34% of Chinese children's utterances, and 30% of American children's utterances.

We then compared the frequency of each DL category (see Table 3). The frequency of the following categories did not differ across cultures for caregivers or children: past talk, scripts and/or routines, rules and/or norms, and recalling knowledge, $ps > 0.1$. However, relative to American parents, Chinese caregivers used more future utterances, $W = 519, p < .05$, fewer explanations, $W = 1065, p < .001$, and more connections between the present and non-present, $W = 994, p < .01$. Similarly, Chinese children produced more future utterances, $W = 519, p < .05$, and fewer connections, $W = 1065, p < .001$, than American children.

To account for variations in the total number of DL utterances, we calculated the relative proportion of each DL category out of the total number of DL utterances for a given participant (see Fig. 1) and compared the proportions across cultures using Wilcoxon tests. The findings were similar as when comparing the raw frequency of utterances. The proportions of caregivers' and children's DL about past events, scripts and/or routines, rules and/or norms, and recalling knowledge did not differ between groups, $ps > 0.05$. Again, relative to American parents, Chinese caregivers used a larger proportion of future utterances, $W = 435.5, p < .01$, a smaller proportion of explanations, $W = 1008, p < .001$, and a smaller proportion of connections, $W = 994.5, p < .01$. Chinese children used a larger proportion of future utterances, $W = 476.5, p < .05$, and a smaller proportion of connections, $W = 835.5, p < .05$, compared to American children.

Having shown similarities and differences in the amount and relative proportion of various types of DL, we then compared the social functions of future talk and the content of explanations between groups. We focused on future talk and explanations because as discussed in the literature review, research based on Western, English-speaking samples has shown that both types are positively associated with children's language and cognitive development, but cultural variations in these two important types of DL remain less clear.

Social function of future talk across cultures

Descriptive statistics for the social functions of future talk are reported in Table 4. Wilcoxon tests indicated that Chinese caregivers used almost 15 times more preparatory future utterances than American parents, $M = 0.28$ and 4.13 respectively, $SD = 0.81$ and $9.94, W = 525, p < .01$, and the frequency of elaborative, pedagogical, and attention-getter utterances did not differ, $ps > 0.05$. On average, Chinese children produced 1.43 utterances to respond to their caregivers'

Table 3
Means frequencies (with SDs in parentheses) of caregiver and child DL by category.

	American parents (n = 36)	Chinese caregivers (n = 40)	American children (n = 36)	Chinese children (n = 40)
Past talk	11.28 (12.56)	11.05 (15.24)	4.03 (5.94)	6.05 (9.44)
Future talk	6.17 (9.00)	16.65* (21.46)	2.11 (3.47)	7.80* (11.22)
Explanations	6.06 (5.88)	2.03*** (3.36)	1.33 (2.10)	1.80 (2.84)
Connections	3.80 (5.51)	0.73** (1.62)	1.33 (2.33)	0.48 (1.15)
Scripts and/or routines	1.67 (3.78)	0.98 (2.51)	0.72 (2.36)	0.65 (1.67)
Rules and/or norms	0.83 (1.28)	1.28 (2.55)	0.14 (0.35)	0.25 (0.74)
Recalling knowledge	3.94 (14.37)	3.93 (10.14)	2.11 (6.36)	3.15 (9.35)
Other	9.86 (11.98)	13.03 (24.31)	4.72 (5.09)	7.43 (12.27)

Notes. "****" represents significant differences between group means, * $p < .05$, ** $p < .01$, *** $p < .001$.

preparatory talk, $SD = 4.19$, whereas American children never responded to their parents' preparatory talk in our data, a significant difference, $W = 540, p < .01$. Chinese children not only used more utterances to respond to their caregivers' preparatory talk, but also responded to a larger proportion of their caregivers' preparatory talk than American children, $M = 27\%$ and 0 respectively, $SD = 25\%$ and $0, W = 12.5, p < .05$. Chinese and American children did not differ in the number of elaborative utterances or their responses to caregivers' pedagogical future talk, $ps > 0.05$. Only Chinese caregivers used attention-getters, $M = 0.05, SD = 0.45$; American parents, American children, or Chinese children did not.

Considering social function categories as proportions (out of all future utterances produced by a given participant) yielded similar findings as the raw frequency analyses shown above (see Fig. 2). Chinese caregivers used a larger proportion of preparatory utterances than American parents, $M = 21\%$ and 7% respectively, $SD = 0.32$ and $0.21, W = 311.5, p < .05$, and the proportions of elaborative, pedagogical, and attention-getter utterances did not differ, $ps > 0.05$. A larger proportion of Chinese children's future-oriented utterances were responses to their caregivers' preparatory talk compared to those of American children, $M = 16\%$ and 0% respectively, $SD = 31\%$ and $0\%, W = 136, p < .01$, and a smaller proportion were elaborative, $M = 75\%$ and 94% respectively, $SD = 35\%$ and $24\%, W = 329, p < .01$. Chinese and American children did not differ in their responses to caregivers' pedagogical future talk, $ps > 0.5$.

Content of explanatory talk across cultures

Lastly, we examined cross-cultural similarities and differences in the content of explanatory talk. Regarding topics of explanations, Chinese caregivers used fewer utterances to explain physical reality, $M = 0.58, SD = 1.28$, and individual behaviors, $M = 0.58, SD = 2.04$, than American parents, $M = 3.78$ (physical reality) and 2.22 (individual behaviors), $SD = 4.88$ and 2.60 respectively, $ps < 0.001$. Similar patterns emerged with explications: Chinese caregivers provided more explications denoting physical reality and individual behaviors, $M = 0.68$ (physical reality) and $0.45, SD = 1.91$ and 1.15 , relative to American caregivers, $M = 2.22$ (physical reality) and 1.11 (individual behaviors), $SD = 4.99$ and $1.49, ps < 0.01$. The topics and explications of children's explanations did not differ across cultures in frequency, $ps > 0.05$, except that Chinese children used more explications pertaining to social practices than American children, $M = 0.60$ and $0.08, SD = 1.53$ and $0.28, W = 596, p < .05$.

The number of parents' explanatory utterances with social practices as topics or explications did not differ across cultures, $ps > 0.1$. This is largely because American parents used about three times as many explanatory utterances than did Chinese caregivers. To account for the total number of explanations, we compared the relative proportion of each topic/explication category out of all explanatory utterances produced by a given participant (see Table 5 for descriptive statistics). A smaller proportion of Chinese caregivers' explanatory utterances were on topics related to individual behaviors, $M = 16\%, SD = 29\%$, compared with American parents, $M = 39\%, SD = 36\%, W = 361, p < .05$. On average, 41% of Chinese caregivers' explanatory utterances were about social practices, $SD = 44\%$, significantly higher than those of American parents, $M = 3\%, SD = 7\%, W = 124, p < .001$. The topics of children's explanations did not differ across cultures in proportion, $ps > 0.05$. With respect to explications, Chinese caregivers used a smaller proportion of explications denoting physical reality, $M = 23\%, SD = 33\%$, and a larger proportion denoting social practices, $M = 40\%, SD = 42\%$, relative to American parents, $M = 51\%$ (physical reality) and 10% (social practices), $SD = 33\%$ and $21\%, W = 372$ (physical reality) and 151 (social practices), $ps < 0.05$. Children's use of explications mirrored that of their caregivers: Chinese children used a smaller proportion of explications pertaining to physical reality, $M = 18\%, SD = 23\%$, and a larger proportion denoting social practices, $M = 25\%, SD = 34\%$, than

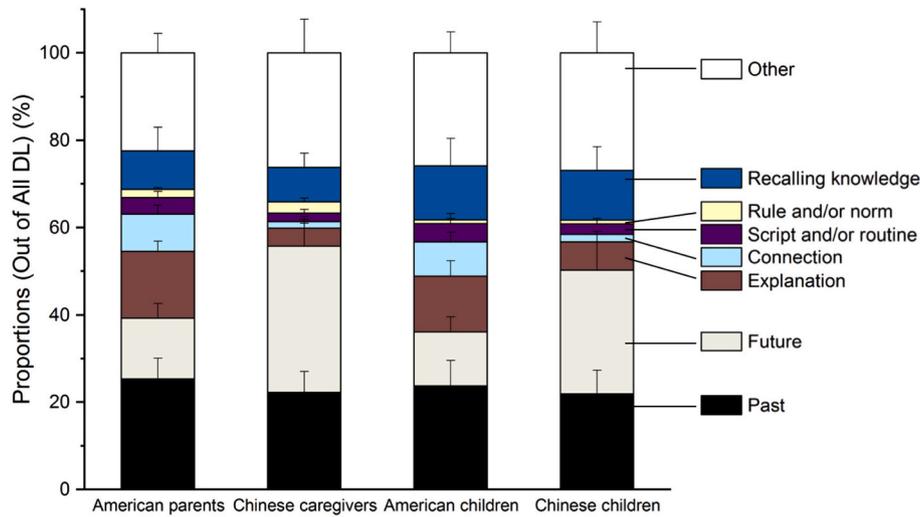


Fig. 1. Mean proportions of caregiver and child DL by category.

Table 4

Means frequencies (with SDs in parentheses) of caregiver and child future utterances.

	American parents (n = 36)	Chinese caregivers (n = 40)	American children (n = 36)	Chinese children (n = 40)
Elaborative talk	5.53 (8.96)	12.05 (16.27)	2.08 (3.45)	6.25 (9.73)
Preparatory talk	0.28 (0.81)	4.13** (9.94)	0	1.43** (4.19)
Pedagogical talk	0.36 (1.55)	0.43 (2.08)	0.03 (0.17)	0.13 (0.52)
Attention-getter	0	0.05 (0.45)	0	0

Notes. “**” represents significant differences between group means, ** $p < .01$ based on Wilcoxon tests.

American children, $M = 56\%$ (physical reality) and 12% (social practices), $SD = 44\%$ and 31% , $W = 278$ (physical reality) and 126 (social practices), $ps < 0.05$.

Cultural differences or location differences?

We were interested in whether the between-group differences in

future talk and explanations were attributable to differing locations of interaction. Recall that American parents and children were in a novel lab environment, whereas Chinese families were in familiar environments (either home or school). Hence, we analyzed home mealtime recordings collected that were available from a subsample of American families. Our American sample was collected for a longitudinal training study, and the 17 families in the control group did not receive any training. All American families were told to record a mealtime at home in the week following the lab visit. We transcribed and coded the mealtime recordings of families in the control group following the same procedures described in the Methods section, Cohen’s Kappas >0.80 .

We first compared American families’ home mealtime conversations with Chinese families’ snack time conversations at both home and pre-school, and were able to replicate our key findings reported above (data presented in Table 6 in the Supplementary Material). Compared with American parents, Chinese caregivers used a larger proportion of future talk and a smaller proportion of explanations, a larger proportion of preparatory future talk and a smaller proportion of elaborative future talk, and their explanations were more socially oriented and less focused on individual behaviors, all $ps < 0.05$. Children’s use of future talk and explanations largely mirrored that of their parents’. These findings suggested there was not a novelty effect of the lab environment. Our findings regarding between-group differences in connections were not replicated, and we will not substantively interpret those findings in this

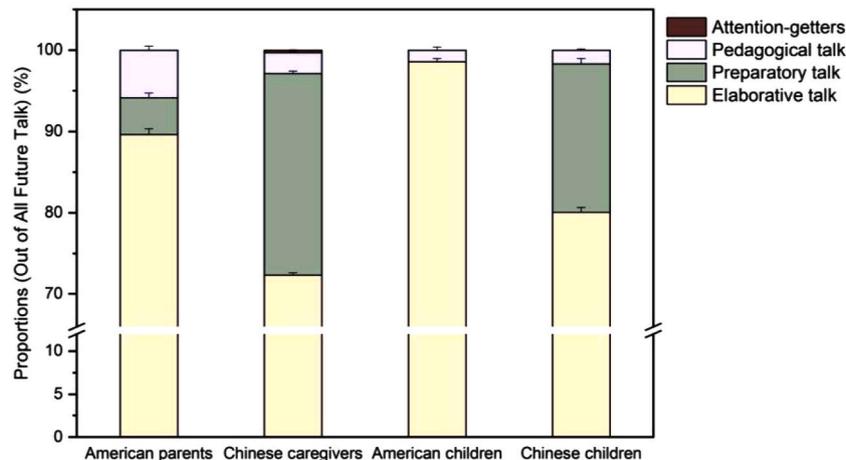


Fig. 2. Mean proportions of caregiver and child future-oriented utterances by social function.

Notes. We included a break on the y-axis so that the categories with smaller proportions (attention-getters and pedagogical talk) are visible.

Table 5
Mean proportion (with SDs in parentheses) of caregiver and child explanatory utterances.

	American parents ($n^1 = 30$)	Chinese caregivers ($n = 17$)	American children ($n = 20$)	Chinese children ($n = 19$)
Topic: physical reality	44% (32%)	29% (36%)	42% (44%)	19% (31%)
Topic: individual behaviors	39% (36%)	16%* (29%)	40% (45%)	39% (44%)
Topic: internal states	10% (22%)	14% (26%)	11% (24%)	21% (33%)
Topic: social practices	3% (7%)	41%*** (44%)	7% (23%)	14% (30%)
Explication: physical reality	51% (33%)	23%** (33%)	56% (44%)	18%* (23%)
Explication: individual behaviors	18% (25%)	21% (33%)	23% (38%)	41% (45%)
Explication: internal states	15% (32%)	15% (33%)	6% (16%)	15% (26%)
Explication: social practices	10% (21%)	40%* (42%)	12% (31%)	25%* (34%)

Notes. “*” represents significant differences between group means, $*p < .05$, $**p < .01$, $***p < .001$ based on Wilcoxon tests.

¹ Wilcoxon tests with relative proportions only included a subset of the full sample, i.e., caregivers and children who produced at least one explanatory utterance.

paper.

Next, we compared American families’ home mealtime conversations with the subset of Chinese families whose snack time interaction data were collected in the home ($n = 24$). We again replicated our key findings (see Table 6 in the Supplementary Material).

Lastly, within each culture, we compared families’ use of future talk and explanations across contexts (see Tables 7 and 8 in the Supplementary Material). For Chinese families, we compared snack time conversations from those who were tested at home ($n = 24$) versus those from families tested at school ($n = 16$), hence a cross-group comparison based on testing location. For American families, we compared the control families’ lab snack time and home mealtime conversations ($n = 17$), hence a within subject comparison. Our findings indicate that within each culture, families’ overall and specific use of future talk and explanations were generally similar across contexts. Taken together, these three sets of analyses corroborated our key findings and provided converging evidence that the cross-cultural differences we found were not an artifact of testing locations.

Discussion

The current study uniquely contributes to the literature by systematically comparing the amount and content of families’ use of decontextualized language (DL) in two dramatically different cultural contexts, Mainland China and the US. Our findings suggest that, broadly construed, DL occurred relatively frequently during mealtimes in both cultures. However, we found striking cross-cultural differences in the amount and content of future talk and explanations specifically. In light of research on Chinese and American cultural beliefs, we discuss how cultural patterns of DL use may reflect distinct values, child-rearing beliefs, and socialization goals in each culture. We also consider the implications that culturally differentiated DL input may have for preschoolers’ development.

Cross-cultural similarities in decontextualized language

We found the amount and relative proportion of DL (all types

combined) did not differ between cultures, nor past talk, scripts and/or routines, rules and/or norms, and recalling knowledge. Hence, DL played an important part in routine communication in both cultures. DL made up about 30% of caregivers’ and children’s utterances in both cultures, higher than that reported in other observational studies (Dickinson & Tabors, 2001; Rowe, 2012a, 2013). In Dickinson and Tabors (2001), on average, DL made up 8% to 15% of American parents’ total talk during book reading. The high density of DL during snack times (one form of mealtime) suggested the importance of mealtimes for eliciting DL.

Our finding that the amount of past talk was similar across cultures converges with those of Miller et al. (2012). Miller and colleagues visited families at their homes in Taipei and Chicago at child age two years six months (2;6), 3;0, 3;6, and 4 and recorded parent-child naturalistic interactions. They identified *episodes* of narratives, each beginning with the first utterance referring to a past event and ending with the final utterance referring to that event. Averaging across the four visits, the numbers of past-narrative episodes were similar between groups (Taipei 470 versus Chicago 420). Similarly, we found that the *number and relative proportion of past-oriented utterances* were similar across the two cultural groups, further suggesting that past narratives are an integral part of everyday conversations in both cultures.

Interestingly, we found that Chinese and American caregivers discussed rules and norms (e.g., “One must respect other people.”), a type of DL, at a similar frequency. It is a prevailing conception that Chinese parents are didactic, harsh, and authoritarian. As Chao (1994) argued, the more authoritarian child-rearing practices have been mistakenly construed as “an antithesis to the more ‘modern’, democratic, and individualistic approaches” (p. 1117). Our findings suggest that on average, Chinese and American caregivers in our sample didactically discussed rules and norms with children at a similar rate (note that there were individual differences within each culture). Critically, in Chinese families, lessons about social norms, moral rules, and behavioral codes were often organically and coherently embedded in future narratives. Adding to Miller et al.’s (1997) work on past narratives, our findings further demonstrate that Chinese caregivers teach these important lessons using preparatory future talk addressing *specific future events*, thus making abstract social and cultural knowledge salient, concrete, and actionable for children. Our findings underscore the importance to further understand caregiver input and socialization processes in Chinese families beyond the often stigmatized “authoritarian” framework.

Cross-cultural differences in decontextualized language

Future talk

Chinese caregivers and children used more utterances to discuss future events than their American counterparts. Chinese caregivers used a larger proportion of future talk to prepare children for future events. Such preparatory future talk may serve as a unique cultural resource and socialization device through which Chinese caregivers help children understand upcoming events, anticipate potential challenges, and rehearse appropriate actions and speech. American parents also used preparatory talk, potentially to make children feel safe and prepared (e.g., explaining an upcoming dental visit), but very rarely. Our findings echo Miller et al. (2012, 1997) argument that Chinese parents frequently wove behavioral, social, and moral lessons into *joint reminiscing*, because they valued “opportunity education” and held children’s conduct to high standards. Here we show that Chinese caregivers also conveyed social and cultural knowledge through *future* preparatory conversations, which may also be attributable to their belief in “opportunity education” and high expectations.

Language socialization theorists posit that children play an active role in the co-construction of cultural meanings (Miller & Goodnow, 1995; Ochs & Schieffelin, 1994; Schieffelin & Ochs, 1986). Indeed, we found that Chinese children actively contributed to preparatory future conversations. Relative to American children, a larger proportion of

Chinese children's future utterances were responses to caregivers' preparatory talk; moreover, Chinese children responded to a larger proportion of caregivers' preparatory talk. Importantly, Chinese children did not simply concede to their caregivers' preparatory comments. Rather, in many cases, they were truly engaged in these conversations, supplied rich information, and endorsed the cultural messages. In the excerpt below, Lingling, a Chinese four-year-old, was discussing an upcoming trip to a shopping mall with her mother.

Mother: Can you buy a toy today? (那你今天能买玩具吗?)

Lingling: I can't. (不能。)

Mother: Right, today you cannot buy a toy. (对今天不能买玩具。)

Lingling: Because I already have a very expensive toy (因为我已经有一个很贵的玩具了。)

Mother: Right then today we'll... (对然后咱们今天就.....)

Lingling (interjects): Two hundred Yuan. (二百块钱呢。)

Mother: Right we won't buy a toy today ok? (对咱们今天不买玩具了吗?)

Lingling: Ok. (好。)

The mother intended to prepare Lingling for the upcoming trip and ensure Lingling would not ask for a toy. Lingling seemed to have made sophisticated pragmatic inferences and was well aware of her mother's intentions. She not only produced a desirable answer ("I can't") to her mother's quizzical question ("Can you buy a toy today?"), but also spontaneously explained why she should not get a new toy, even to the point of cutting off her mother's utterance. Clearly Lingling endorsed the social message her mother tried to convey.

In contrast, American parents predominantly used elaborative talk (over 90% of their future utterances) to co-plan and describe future events with children. This may reflect the greater cultural value placed on cultivating children's agency and autonomy (Darling & Steinberg, 1993; Harwood, Miller, & Irizarry, 1995; Kagitcibasi, 2005; Miller et al., 2012). American parents frequently invited children to co-construct future experiences, and children often expressed their preferences and perspectives. In the excerpt below, Olivia's mother asked a series of questions, inviting Olivia to co-plan a visit to the library. Olivia articulated her preferences in response.

Mother: So what are we gonna do after we leave here?

Mother: Are we gonna go to the library or get back home?

Olivia: Go to the library.

Mother: What do you wanna find when we go to the library Olivia?

Olivia: Um some movies.

Mother: What movies?

Olivia: Firefighter movies.

Mother: You want to get a firefighter movie?

Olivia: Firefighter movies.

Explanations

We first discuss cultural variations in caregivers' use of explanations, then turning to those in children's explanatory talk. American parents produced almost three times as many explanatory utterances than did Chinese caregivers, a statistically significant difference. Chinese and American caregivers differed in *what* was explained (topic) and *how* they explained aspects of the world (explications).

American parents used a larger proportion of utterances to explain individual behaviors, i.e., "why I am doing something" or "why I am telling you to do something" (Aukrust & Snow, 1998). A potential cultural explanation is that situated in a more egalitarian and individualistic cultural context, American parents, despite being authority figures, still felt the need to justify their own actions and demands. In Chinese Confucian traditions, however, caregivers are responsible for regulating children's behaviors, and children are expected to and appreciate caregivers' high level of involvement and care (Chao, 1994; Luo, Tamis-LeMonda, & Song, 2013). Hence, Chinese caregivers may be less inclined to explain their own behaviors or requests.

American parents used a larger proportion of explications related to physical reality than Chinese caregivers. The frequent verbal

elucidations of physical reality may reflect a stronger social and cultural emphasis on scaffolding children's cognitive development using language (Harwood et al., 1995; Melzi, 2000; Quirk et al., 1986). Additionally, ethnographic research has shown that caregivers in Western, industrialized societies tend to impart knowledge about the physical world through verbal explanations, whereas caregivers in non-Western, non-industrialized societies convey such knowledge nonverbally, such as through demonstration (Rogoff et al., 1993). Rogoff et al. (1993) found that Salt Lake City mothers were twice more likely to explain the workings of a toy to their toddlers than Guatemalan Mayan mothers. Similarly, we found that on average, American parents were three times more likely to discuss physical, biological, and chemical mechanisms and processes as explanations than Chinese caregivers. Our finding suggests that caregivers' use of verbal explanations about the physical world differs even between China and America, two highly industrialized societies.

Chinese caregivers' explanations exhibited a strong social orientation. With regard to *topics*, nearly half (41%) of Chinese caregivers' explanations focused on social practices, whereas only 3% of American parents' explanations did. Relative to American parents, a larger proportion of Chinese caregivers' *explications* pertained to social practices. Consistent with literature showing that East Asian cultures conceptualize individuals as fundamentally related to each other and strongly value harmonious interdependence (Heine, 2001; Markus & Kitayama, 1991; Varnum et al., 2010), our findings may reflect Chinese caregivers' strong tendency to perceive the world as socially regulated and individuals as interdependent and interrelated. Further, through social-practices-oriented explanations, Chinese caregivers explicitly taught children how social norms and shared values profoundly shaped everyday life and highlighted children's responsibilities in upholding shared values and maintaining social harmony.

Chinese and American children's explanatory talk (all content combined) did not differ in frequency or relative proportion. However, American and Chinese children's explications, although small in number, mirrored the cultural patterns of their caregivers' explications. American children more frequently cited physical reality as explications, whereas Chinese children more often used social-practice-related explications. These findings may reflect children's emergent understanding of what constitutes a culturally appropriate explanation for the workings of the world. Socialized in American families, children may be inclined to produce accurate or inaccurate account of biological, physical, and chemical mechanisms and processes. Chinese children may have been socialized to reason that the world is socially organized and regulated. An alternative interpretation is that Chinese caregivers frequently explained social-practice-related topics, and such topics may have elicited from children explications pertaining to social practices. However, it is important to note that a social-practice-related topic does not necessarily elicit a social-practice-oriented explication. For example, when Yuyu's mother commented, "You should be a role model because you'll be a big sister soon" (the topic, becoming a role model, pertained to social practices), Yuyu replied, "because I want to" (an explication coded as "internal state"). An experimental study comparing Chinese and American children's tendency to provide social-practice or physical-reality-related explications in response to a controlled set of causal questions may further illuminate how Chinese and American children evoke physical and social mechanisms to explain causal structures in the world.

Culturally patterns of DL use and preschoolers' development: potential links

If we take these mealtimes as a snapshot of families' broader conversational style, we might expect that cultural patterns of DL influence children's development differently. In light of previous work on the developmental benefits of DL, we propose some hypotheses for exploration in future research. First, caregiver-child future narratives

may support children's development through culturally diverse pathways. American parents' extensive use of elaborative future talk may provide children with opportunities to practice envisioning a future self and co-constructing future plans with parents' support. Chinese caregivers' preparatory talk may serve as a form of scaffolding through which caregivers provide children with support and guidance in regulating future actions, emotions, and impulses (Bernier, Carlson, & Whipple, 2010; Leyva & Nolivovs, 2015). Moreover, in our transcripts, much of Chinese families' preparatory talk focused on rehearsing conversations targeting various audiences and contexts (e.g., comforting a sad friend, seeking information from a doctor). Such talk may cultivate Chinese children's awareness of diverse conventions for language use and foster their pragmatic skills.

Our findings highlight the need to further understand the developmental implications of explanations about specific domains. Researchers argue that American parents' explanations may help children understand scientific concepts and mechanisms (Callanan & Jipson, 2001; Callanan & Oakes, 1992) as well as form and test theories about causal structures underlying phenomena in the physical world (Gopnik & Meltzoff, 1997; Wellman & Gelman, 1998). Our findings confirm that explanations pertaining to the physical world are indeed frequent in American families and are present but less frequent in Chinese families. Social-practice related explanations, more prevalent in Chinese families, may be supportive of children's learning of social relationships, conventions, and norms.

Conclusions, limitations, and future directions

In conclusion, the present study shows that DL is a similarly prevalent form of discourse in routine snack time conversations in both Chinese and American families. Moreover, families' use of DL, especially future talk and explanations, is culturally patterned and may reflect distinct cultural beliefs and socialization goals in each culture. This study is also a critical first step towards understanding how caregivers spontaneously use DL to support children's development of culturally adaptive knowledge and skills.

This study has the following limitations. First, although beyond the scope of the current study, further understanding of cultural variations in caregiver explanations calls for a thorough examination of children's requests for explanations, such as their "why" questions. Indeed, children's requests for explanations differ across cultures (Callanan & Jipson, 2001; Delgado-Gaitan, 1994; Gauvain, Munroe, & Beebe, 2013) and are closely linked to adults' explanations (Frazier, Gelman, & Wellman, 2009; Ruggeri, Xu, & Lombrozo, 2019). It is possible that cultural variations in caregiver explanations are partly explained by differences in children's requests for causal information. Second, as discussed earlier, it is unclear whether our findings are generalizable to other demographic groups in China and America. Third, our sample size is relatively small. Our US sample included mostly college-educated, mid-SES parents. The analyses testing the robustness of our findings against different testing locations had even smaller sample sizes because they used subsets of the full sample. Future research should test if our findings are replicable with larger and more diverse samples. Further, although our analyses have provided converging evidence that the key between-group differences were not attributable to testing locations, it is nonetheless important to note that the Chinese and American samples were not fully compatible in testing locations. Future research should explore whether and how communicative contexts affect families' use of DL and whether our findings are replicable in other contexts. Lastly, previous research has found that American parents' level of education related to their use of explanations (Rowe, 2012a). In our study, American parents received more formal education than Chinese caregivers, granted that Chinese adults generally receive fewer years of education.

This study has important implications for promoting Chinese children's learning and development. Our findings indicate that Chinese

caregivers spontaneously incorporated a large proportion of DL into their routine conversations with preschoolers. Given that DL has a wide range of developmental benefits and that caregivers' and children's use of DL is responsive to interventions (Leech et al., 2018; Morgan & Goldstein, 2004; Seven & Goldstein, 2019; Van Bergen, Salmon, & Dadds, 2018), encouraging caregivers to use more DL may be an effective and culturally authentic approach to enhancing Chinese children's language, cognitive, and social-emotional skills. That said, very few studies have examined the developmental implications of DL in the context of Mainland China. Future research should bridge this important gap.

CRedit authorship contribution statement

RW: Conceptualization, Project administration, Data curation, Formal analysis, Writing - original draft, Writing - review & editing

KAL: Conceptualization, Funding acquisition, Project administration, Formal analysis, Writing - review & editing

MLR: Conceptualization, Funding acquisition, Writing - review & editing, Supervision

Declaration of Competing Interest

None.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.appdev.2020.101214>.

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Further-reading

- Leyva, D., Berrocal, M., & Nolivos, V. (2014). Spanish-speaking parent-child emotional narratives and children's social skills. *Journal of Cognition and Development*, 15(1), 22–42. <https://doi.org/10.1080/15248372.2012.725188>