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Attention to Context: U.S. and Japanese Children's Emotional Judgments

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A growing number of studies suggests cultural differences in the attention and evaluation of information in adults (Hedden, Ketay, Aron, Markus, & Gabrieli, 2008; Markus & Kitayama, 1991; Masuda & Nisbett, 2001). One cultural comparison, between Westerners, such as Americans, and Easterners, such as the Japanese, suggests that Westerners typically focus on a central single object in a scene while Easterners often integrate their judgment of the focal object with surrounding contextual cues. There are few studies of whether such cultural differences are evident in children. This study examined 48 monolingual Japanese-speaking children residing in Japan and 48 monolingual English-speaking children residing in the United States (40- to 60-month-olds) in a task asking children to complete a picture by adding the proper emotional expression to a face. The key variable was the context and shift in context from the preceding trial for the same pictured individual. Japanese children were much more likely to shift their judgments with changes in context, whereas children from the United States treated facial expression in a more trait-like manner, maintaining the same expression for the individual across contexts.

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Traditional research in cognition assumes that fundamental processes, such as memory and attention, are universal (Gentner, 1982; Glucksberg, 1988; Wang, 2003). However, other evidence suggests that many of these processes may themselves be influenced by experience and culture (Han & Northoff, 2008; Markus & Kitayama, 1991). The research reported here concerns cultural differences in attention to and influence by contextual information in the emotional judgments of preschoolers.

The study is motivated in part by a pattern of contrasts that have been observed in adults in two kinds of cultures: independent and interdependent. In particular, across a variety of kinds of tasks, adults in Western cultures often show more focused attention, whereas adults from Eastern cultures show broader and more distributed attention. For example, in perceptual and attentional tasks, members of Western cultures often focus more on the centrally relevant object and are less affected by surrounding context, whereas members of Eastern cultures distribute attention and are, as a consequence, more influenced by context. These differences have been reported in perceptual judgment tasks, such as the rod-and-frame task, picture descriptions, and face judgments (Chua, Boland, & Nisbett, 2005; Kitayama, Duffy, Kawamura, & Larsen, 2003; Masuda et al., 2008; Masuda & Nisbett, 2001, 2006; Nisbett & Masuda, 2003; Nisbett & Miyamoto, 2005; Nisbett, Peng, Choi, & Norenzayan, 2001). Supporting evidence for these differences has also been found in recent brain imaging studies (Han & Northoff, 2008; Hedden, Ketay, Aron, Markus, & Gabrieli, 2008).

These differences are sometimes related not just to attentional styles but also to social relations and appraisals of emotion. Western cultures (e.g., the United States, Canada, Australia) are characterized as emphasizing the independence of individuals, whereas Eastern cultures (e.g., Japan, China, Korea) are characterized as emphasizing interdependence and social relations. These differences, in turn, have been linked historically to Greek and Chinese philosophy (see review by Markus & Kitayama, 1991). Within this framework, some have argued that folk theories of human behavior that are in terms of more trait-like attributions—fixed and not context-dependent behavioral patterns—are favored in individualistic cultures, but that contextualized interpretations of behavior are favored in interdependent cultures (Church et al., 2003, 2005, 2006; Kanagawa, Cross, & Markus, 2001; Markus & Kitayama, 1998). As an example, for Westerners, John's happiness at a birthday event might be seen as also indicating his generally happy-go-lucky personality and therefore would be seen as predictive of a future emotional state, whereas for Easterners, the happiness might be seen as more specific to the context and thus not as predictive of future emotional states.

One study that links these differences in social and emotional interpretations to more or less holistic attentional styles examined the role of surrounding context on adults' judgments of the degree of happiness or sadness indicated in a cartoon face (Masuda et al., 2008). More specifically, Masuda and his colleagues (2008) asked adults from the United States and Japan to judge the target person's emotion. Participants were shown the target person with other people surrounding the target person. The surrounding cartoon people either had congruent or incongruent facial expressions as the target. Japanese adults' judgments were strongly influenced in an assimilatory manner by the surrounding people's facial expressions and were much more so than the participants from the United States. For example, if the target person was surrounded by "happy" people, the target person was judged by Japanese participants to be happier than when the target person was surrounded by the "sad" people. Findings such as these suggest that different attentional patterns—more or less inclusive of surrounding context—may be mechanistically related to cross-cultural differences in social and emotional judgments.

This now robust literature (Markus & Kitayama, 1991; Masuda et al., 2008; Nisbett et al., 2001) about cross-cultural differences in adults suggests broad and perhaps deeply ingrained cultural differences in attention to context and in contextualized interpretations of emotions and other behaviors. At present, there are not even a handful of studies addressing the development of these differences, and thus, we do not know whether these cross-cultural differences characterize the judgments of children, and if so, when they first emerge. One of the few developmental studies that does exist asked U.S. and Japanese children whether other children could change their negative physical and psychological traits and found that school-aged Eastern children more strongly believed in possible change and improvement than did Western children, a result consistent with perhaps more contextualized interpretations of behavior in Eastern cultures (Lockhart, Nakashima, Inagaki, & Keil, 2008). Another study compared school-aged Canadian and Chinese children's predictions about future behaviors and found that Chinese children predicted more changes than Canadian children did, suggesting that Chinese children expect the changes based on the possible contextual changes in the future (Ji, 2008). Another study found attentional differences in the rod-and-frame task as early as 6 years of age, suggesting that these cultural differences in attentional style also develop early (Duffy, Toriyama, Itakura, & Kitayama, 2009). There have been no studies with children younger than 6 years of age that show these cultural differences.

The main goal of the present research is to contribute to an understanding of the developmental emergence of these cross-cultural differences by asking whether they are observable in preschool children. Although the study is not

developmental in the sense of comparing children at different developmental levels, it contributes to the developmental question by attempting to push the age at which these differences have been reported to the preschool period, a step to determining when these differences might first begin to emerge and to developmentally locating the classes of experiences that may create them. Because so little work with young children has been done in this domain, a new child-friendly task was designed to examine the role of context in judgments about emotional facial expressions. We chose this domain to examine more or less attention to surrounding context because adult cross-cultural differences in emotional judgments are particularly robust (Masuda et al., 2008).

The task used simple cartoon-like drawings of boys and girls showing either happy or fearful facial expressions. We chose these expressions because words for these emotions are acquired early in both languages and are common in everyday language (Fenson et al., 1993; Ogura & Watamaki, 1997). Moreover, the common (and early-learned words) for these emotions—“happy” and “*ureshii*” and “scared” and “*kowai*”—are usually thought of as direct translations (Romney, Moore, & Rusch, 1997). Moreover, our pilot work (presented in the “Methods” section) indicated that these two emotions can be captured in drawn stimuli in ways that are easily and similarly interpreted by participants from the two cultures.

On each trial in the task, the experimenter first presented one drawing of an individual child with an emotional facial expression in a context that was relevant to the displayed emotion. However, the context was not salient nor was it integrated with the pictured person. For example, the experimenter might show a picture of a happy girl adjacent to a separate picture of a birthday cake but not mention or point to the cake. The idea behind the task is that it neither demands nor prevents the incorporation of the context into an interpretation of the expression. Instead, it leaves it open so that the participant can narrowly focus on the happy facial expression or more broadly consider the happy expression in the context of the adjacent pictured cake. If Japanese children seek a contextual basis for understanding being happy, they might construe the pictured girl’s happiness as being due to the cake. If U.S. children think of happiness as more individuated (or just do not attend to context), they may be less likely to incorporate the pictured cake in their judgments.

To test children’s interpretation of the original facial expression, they were shown a drawing of the same individual (pictured with the same clothes and body) but in a new neutral context (e.g., next to a picture of a chair) and without a face. In the manner of completing a puzzle with a missing piece, the participant was asked to select a face from a set of choices. If children understood the original happy expression as related to the cake, they should, in the new context of a chair, choose a more neutral expression. If, however,

children construed the expression in terms of a more enduring trait, then the shift in context should not matter and they should choose the same expression.

Because there have been no studies examining these differences in preschool children and because this is a new task, we did not know whether children would spontaneously—with minimum instruction—attend to, remember, and interpret the facial expressions. Accordingly, the task was conducted in two ways. In the no-label condition, we did not explicitly name the facial expression—either happy or scared—of the target figure. In the label condition, when the cartoon individual was first introduced with an expression and context (e.g., a smile next to a picture of cake), the emotion was labeled (e.g., “This is Amy. Amy is happy.”). The label condition thus might be expected to encourage children to attend to the facial expression and to activate their (perhaps culturally specific) knowledge about how to interpret emotions.

METHOD

Participants

The participants were 48 monolingual Japanese-speaking children residing in Yamanashi, Japan, and 48 monolingual English-speaking children residing in Indiana. The mean age was 49.8 months for Japanese-speaking children and 50.3 months for English-speaking children. In both groups, the children’s ages ranged from 40 to 60 months and across groups children were matched for age (± 1 month). Children were randomly assigned to one of two conditions—emotion labels condition or the no-label condition. The gender of participants was about equally distributed in both populations. All children in both cultures were from middle-class families in which at least one parent had a college degree.

Stimuli

Laminated cards of cartoon figures alongside some contextual cue were used for this experiment. For each trial, two cards showing the same cartoon figure were used, one to set up the original context and one for testing. The original context card showed the figure with an emotional expression next to an object that is characteristically associated with a happy experience or a fearful one. The emotions and facial expressions were chosen to be similarly interpreted in both cultures. The cartoon facial expressions of “happy” and “scared” were constructed with the changes in mouth regions because

past cross-cultural research with adults suggests that expressions with the mouth are the easiest cue for these emotional expressions (Yuki, Maddux, & Masuda, 2007). Further, the cartoon facial expressions chosen to denote happy or fearful were selected from prior pilot testing with preschool children ($n = 10$ per culture); children in both countries matched the happy expression to “being happy” and the fearful expression to “being scared” more than 90% of the time when asked to point to which of two facial expressions was either “happy” or “scared.” For the original context cards, the context picture was always appropriate to the emotions depicted in the facial expressions as shown in Figure 1. The context pictures for the original context cards consisted of four happy contexts—birthday cake, present, ice cream, and balloons—and four fearful contexts—roaring lion, ghost, monster, and shark. These context pictures were chosen by prior pilot testing with preschool children ($n = 10$ per culture), all of whom judged them appropriately more than 90% of the time when asked to indicate whether the picture was either about a “happy” or “scary” thing. The testing context card showed the same figure without a face but with a neutral object. The pictures for the neutral context in the testing phase were these: chair, notebook paper, cup, and spoons. Children chose from four randomly arranged faces, each with a different emotional expression as shown in Figure 1, to complete the picture. The same 4 emotional expressions (embedded in a figure-appropriate face) were used on every trial. Thus, as illustrated in Figure 1, children could choose the same facial expression as the original context (a 0 response), or expressions 1, 2, or 3 steps away. For instance, in a happy original context trial, choosing a happy face during testing would be coded as a 0 response (no change), but choosing a fearful face would be coded as a 3 response (change to the opposite extreme of original face).

Procedure

Children were first presented with two task-familiarization trials that contained both an original and testing phase. The purpose of these familiarization trials was to instruct children to choose the missing face for the drawing on the test phase. On these familiarization trials, children were first shown a character with a facial expression but without any context and introduced to the character by name, but the emotion displayed in the facial expression was not labeled. Then, children were given a card with the same character but no face and were asked to choose the missing face from four different faces. All four faces had the same facial expression as each other and the original but depicted faces of different people (with different hair colors and so forth). Children were encouraged to pick the right face and in a manner consistent with some early childhood puzzles to place it where it

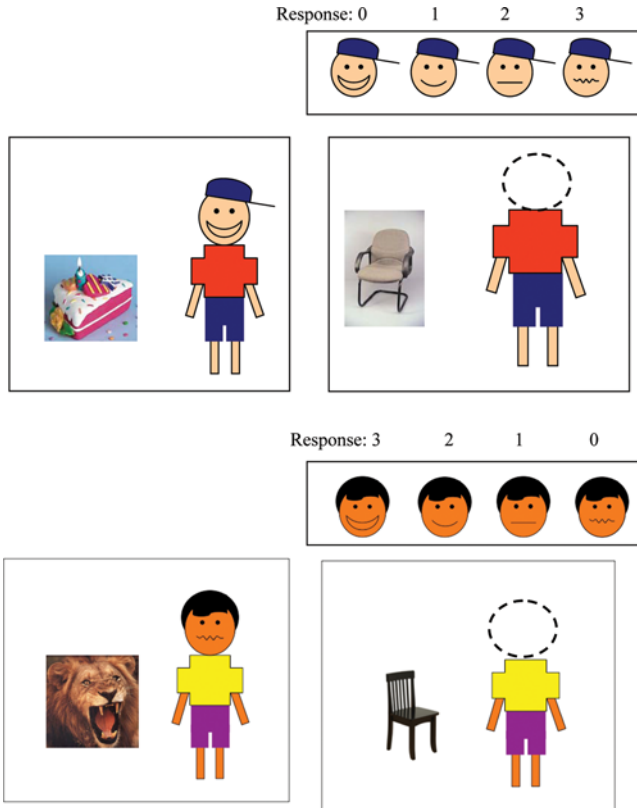


FIGURE 1 Example of the testing stimuli. The top half shows a pair of cards that go from the original happy-context card to a neutral testing context. The bottom half illustrates a pair of cards that go from the original scary-context card to a neutral testing context. Each test card is shown alongside four illustrations of the cartoon figure's face, each with different emotional expressions. The response number shown on the top of faces corresponds to the same facial expression as the original context, and 1, 2, or 3 steps away from the original expression (with 3 being an emotional expression at the opposite extreme). (Color figure available online.)

belonged on the drawing. These characters were not used again during the experimental trials.

The structure of each experimental trial consisted of the original context phase immediately followed by the testing phase for that trial. In the original context phase, the child was shown a picture of a cartoon person with an emotional expression and was introduced to the character by a typical name in each country that was unique to that character and that trial (e.g., "This is Tiffany" in English, and "*kore wa Yuko-chan dayo*" in Japanese). This was

the only instruction they heard in the no-label condition. In the emotion labels condition, children were introduced to the name of the character and additionally were told an explicit label consistent with the emotional expression on the character's face ("Tiffany is happy (scared)" in English, and "*kore wa Yuko-chan dayo; Yuko-chan wa ureshii (kawai) n dayo*" in Japanese). In both conditions, there was no mention of the contextual cues. Then, children were asked to put the original card into a box facedown. In the immediately following testing phase, the child was shown the body of the same cartoon person from the original card but in a neutral context and was asked to select the appropriate face from a set of four test faces ("Pick Tiffany's head" in English, and "*Yuko-chan no atama wo erande*" in Japanese). Out of the four possible choices, one face depicted the same expression as the original context and the other three depicted different expressions. Children attached their selection to the testing context card (with Velcro) and were asked to put the completed card into the box. There were a total of eight trials with different characters with unique names and each with their own contextual cue. Four depicted a happy context and the other four depicted a fearful context in the original phase. All testing cards depicted a neutral context.

In sum, a 2×2 between-subject design (emotion labels/no-label conditions \times cultural groups) was used in this study. Children were randomly assigned to either emotional labels or no-label conditions. They were also randomly assigned to two random orders of eight experimental trials (and thus judgments of the two emotions were intermixed) forming two subtypes of trials: happy-to-neutral context trials and fearful-to-neutral context trials.

RESULTS

The number of 0 responses (choice of the original context face) was used as the main dependent measure to assess group differences in attention to context. Each child's frequency of the 0 response choice was submitted to a 2 (culture) \times 2 (condition) \times 2 (gender) \times 2 (emotion) analysis of variance (ANOVA), which yielded only a significant interaction between culture and condition, $F(1, 88) = 6.04, p < .02$. As shown in Figure 2, the interaction is due to reliable differences between U.S. and Japanese children in the label condition, $F(1, 46) = 4.94, p < .05$, but not in the no-label condition, $F(1, 46) = 1.57, p = .22$.

In the label condition, U.S. children were more likely to retain the original facial expression (despite the change in context) than were Japanese children, $F(1, 46) = 4.94, p < .05$, a result fitting the proposal of trait-like interpretations in Western cultures but more contextual choices in Eastern cultures. Consistent with the proposal of more contextualized original

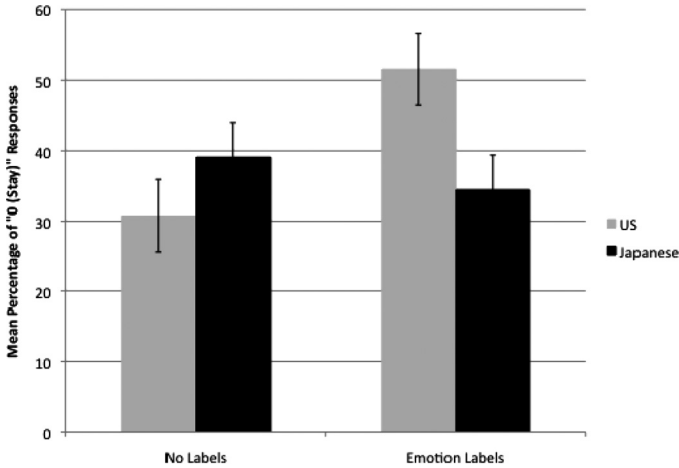


FIGURE 2 Results of the study, depicting the “0 (stay)” response in English- and Japanese-speaking children across the two labeling conditions.

interpretations, Japanese children tended to shift their choices, choosing the face with the slight smile (Face 1 in the happy-to-neutral condition and Face 2 in the fearful-to-neutral condition) and did so reliably more often than expected by chance, $t(23) = 2.61$, $p < .05$. The group differences in the label condition thus suggest that cross-cultural differences of the kind that have been reported in adults from Western and Eastern cultures are also evident in preschool-aged children. Moreover, these differences appear to characterize both happy trials (mean 0 response = 44.79% for the U.S. children and 31.25% for Japanese children; $SD = 26.56$ for the U.S. children and 22.42 for Japanese children) and fearful trials (mean 0 response = 58.33% for the U.S. children and 37.5% for Japanese children; $SD = 37.35$ for the U.S. children and 36.12 for Japanese children).

Because the age range is broad in this cross-cultural sample, and because the preschool period might be the period in which these cross-cultural differences emerged, we also compared performances of younger ($n = 12$) and older ($n = 12$) children in the label condition by splitting the data at the median age for each country (median age = 4;5 for the U.S. children and 4;6 for Japanese children). A 2 (culture) \times 2 (emotion) \times 2 (age) \times 2 (gender) ANOVA yielded no age effects or interactions with age, $F(1,40) = 0.41$, $p = .53$. This result suggests that these cultural differences are forming in children as young as 3.5 years of age.

Not only were there no group differences in the no-label condition, but also children from both cultures chose haphazardly in that condition. They

chose the same face only about one third of the time, with no systematic pattern for children from either culture or for either emotion. Thus, in the no-label condition, *all* children's choices were variable and nonsystematic. The lack of systematic choices in the no-label condition suggests that without the explicit instructions that this is an emotional task, children did not understand the nature of the task—either not attending to the original context face, not remembering it, or not believing that it was relevant to the test choice. The lack of systematic responding in the no-label condition and systematic cross-cultural differences in the label condition may also mean that the cross-cultural differences observed here are specifically about emotions and perhaps also tied to the effects of emotion words themselves. We consider these possibilities in the Discussion.

DISCUSSION

These findings provide evidence that the differences in sensitivity to context that have been demonstrated in Western and Eastern adults are discernible in preschool children, at least with respect to judgments about facial expressions and emotions. To the best of our knowledge, this is the developmentally earliest documentation of these cross-cultural differences. Although this study does not identify the developmental time period in which these differences first emerge—because they were evident in even the youngest children tested—they do indicate that these differences appear relatively early, emerging before formal schooling (see Duffy et al., 2009). In brief, whatever the relevant cultural experiences, they must be pervasive enough in the lives of young children to shape the different patterns of responses observed here.

In the adult literature, these cross-cultural differences are often discussed either as differences in attentional style or differences in social judgments. The present study was not designed to distinguish possible influences or origins of these cross-cultural differences but rather to maximize the likelihood that we might find them already evident in preschool children. Accordingly, we used a task that was not constrained to tap either attentional patterns or social judgment. Still, it may be meaningful that these early differences emerged in a task about emotions and emerged only when the relevance of emotions was made clear by providing explicit emotional labels. Indeed, one prior study that investigated whether cross-cultural differences were evident prior to formal schooling used a nonlinguistic perceptual task and found no differences prior to schooling (Duffy et al., 2009). This suggests that properties of the current task—about emotions and involving explicit labeling—may be critical to early evidence for cross-cultural differences.

Indeed, emotion and emotion-related social judgments could be the developmental starting point for these cross-cultural differences. The literature on cross-cultural differences in social and emotional appraisals is large and suggests pervasive social differences of these kinds are likely to be present in the experiences of young children (Cole, Bruschi, & Tamang, 2002; Frijda, Kuipers, & Ter Schure, 1989; Markus & Kitayama, 1991; Matsumoto & Ekman, 1989; Mesquita & Frijda, 1992; Mesquita & Walker, 2003; Scherer, 1997; Tsai, Knutson, & Fung, 2006). For example, Japanese culture has greater strictures about overdisplaying one's emotions (e.g., Matsumoto & Ekman, 1989). Parents may encourage Japanese children to attend to the contextual appropriateness of emotional displays and actively encourage more neutral displays in nonemotionally laden (that is, neutral) contexts. Studies of cross-cultural differences in parenting and discipline are consistent with this possibility (Fernald & Morikawa, 1993; Friedlmeier & Trommsdorff, 1999; Okagaki & Sternberg, 2008), with Eastern parents focusing on behavior in the context of its effect on others and Western parents focusing on individual responsibility. Thus, the parenting of culturally specific prosocial behaviors seems a likely vector for the early transmission of cross-cultural differences.

Western and Eastern adults show attentional-style differences in very broad contexts including perceptual tasks that have no relation to social events or to systematic contrasts in lexical categories (such as emotion words or spatial terms). We do not know whether the cross-cultural differences observed here are specific to social contexts or whether they will also be found in broader contexts. We also do not know if they are more generally about attention or interpreting facial expressions (did the U.S. children notice the pictured cake but just not integrate it into the interpretation of the smile, or did they just not notice it all?). A developmental path that begins narrowly in the sense of being specifically about emotions and then becoming broader so that it characterizes all sorts of judgments is one developmental possibility. A clearly important next step is to trace the developmental path of these cross-cultural differences, comparing older and young children, in a set of tasks that systematically varies the relevant information. It could be that socioemotional judgments (how one thinks about people and their interactions with each other) are the core cultural differences and thus the developmental source of the independent-interdependent differences that are more generally observed. If this is so, these cross-cultural differences should be observed most strongly in young children in these specific contexts.

The fact that cross-cultural differences were observed in the present study only in the labeling condition also suggests a role for language. Many studies of preschoolers' conceptual judgments (Gelman & Coley, 1990) indicate

that labeling a concept leads children to deeper and more conceptual judgments about a category than nonword conditions in which children are often distracted by surface-perceptual properties. Further, other studies suggest that in identifying faces, preschoolers often focus on surface properties (hair length, clothing; see Carey & Diamond, 1977). Thus, the explicit mention of emotional terms may have activated children's culturally specific beliefs about emotional displays, leading to the observed results.

It is also possible that language plays a more direct role in the transmission of these cultural differences. As Whorf (1956) pointed out, language and culture are deeply interconnected and interdependent systems. Thus, members of Western and Eastern cultures *talk* about emotions in different ways, with members of Western cultures linking them to *individual* accomplishment and traits but members of Eastern cultures linking them to relations *with others and context* (Cousins, 1989; Kanagawa et al., 2001; Mesquita & Karasawa, 2002; Uchida, Norasakkunikit, & Kitayama, 2004). We specifically chose emotion words for use in this study that are thought to "have the same meaning" and be direct translations. However, as noted by many theorists, this is difficult, if not impossible, to document (see Barrett, Lindquist, & Gendron, 2007; Kim & Hupka, 2002; Romney et al., 1997; Rosaldo, 1984; Semin, Görts, Nandram, & Semin-Goossens, 2002; Wierzbicka, 1995) as so-called direct translations may have quite different implications and connotations. Thus, it may be that in English, emotion words have a more trait-like meaning and in Japanese they imply a more transient state. Cross-linguistic studies of differences in emotion terms and their development are clearly essential to evaluating the role of language in the cross-cultural differences observed here. We note that in other linguistic domains—quantification and individuation (Barner, Inagaki, & Li, 2009; Imai & Gentner, 1997), verbs (Choi, McDonough, Bowerman, & Mandler, 1999), and spatial terms (Majid, Bowerman, Kita, Haun, & Levinson, 2004)—there is clear evidence that different languages capture different regularities in the world and cue speakers of different languages in different ways (e.g., Boroditsky, 2001; Yoshida & Smith, 2003). Parallel studies of emotion terms in Western and Eastern languages would be highly informative.

A final open question answerable only by developmental studies is the nature of the universal starting point; for example, is context independency the default starting point for all children with interdependent cultures encouraging attention to relations, or alternatively, is a broader context-bound relational style the developmental starting point in all cultures? In sum, the present studies suggest that differences between interdependent and independent cultures are evident as early as preschool. Programmatic research in this as yet unstudied domain is needed to trace the developmental path in different domains and to understand the potential role of parenting

and language. We also note that these developmental studies may enrich the understanding of cross-cultural differences in other related domains including moral judgments and concepts of self and relations to others (e.g., Bersoff & Miller, 1993; Kagitcibasi, 2005; Miller, 1986; Sabbagh, Xu, Carlson, Moses, & Lee, 2006).

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