This study examined the relation of language to the development of a cultural self. Bilingual children ages 8–14 from Hong Kong (N = 125) were interviewed in either English or Chinese. They recalled autobiographical events and described themselves, and indicated their agreement with Chinese interdependent versus Western independent values. Children interviewed in English provided more elaborate and self-focused self-descriptions and memory accounts and endorsed more strongly Western values, compared with children interviewed in Chinese. Furthermore, the endorsement of a cultural belief system mediated the effect of language on self-concept, which, in turn, mediated the effect of language on autobiographical memory. These findings offer new insight into the dynamic relations between language, culture, and the self.

The self is a multifaceted, complex, dynamic construct encompassing many interacting aspects or components (Baumeister, 1998; Neisser, 1988). Two aspects of the self—autobiographical memory and self-concept—have been underscored in contemporary theories of the self (Fivush & Nelson, 2004; Harter, 1999; Nelson, 2001). Autobiographical memory, or the “extended self,” refers to memory for significant personal experiences from an individual’s life. Self-concept, or the “conceptual self,” refers to an individual’s conceptual representations of him- or herself (Neisser, 1988). While autobiographical memory provides the materials for the constitution and maintenance of a dynamic self-concept, self-concept exerts executive control over the constructive process of autobiographical remembering in accordance with the self’s current goals and motivations and thus acts to “shape both the accessibility of memories and the accessibility of their content” (Conway, 2005, p. 595; Conway & Pleydell-Pearce, 2000; Ross, 1989). More important from the current perspective, the two aspects of the self are both sensitive to social-cultural influences as they develop in a myriad of daily interactions between individuals and their immediate and distal contexts, together making up a self that integrates the framework of the culture, namely, the cultural self (see Wang, 2006a, for a review).

The Cultural Self

The development of the self is immersed in the social-cultural context constituted by cultural beliefs, symbols, artifacts, metaphors, and everyday practices (Bruner, 1990; Miller, Fung, & Koven, 2007; Wang, 2006a). These cultural factors provide an important framework based on which individuals process and represent self-related information (Kağıtçıbaşı, 2007; Markus & Kitayama, 1991). The belief system in European American culture that emphasizes individuality, personal uniqueness, and self-sufficiency promotes an autonomous self-concept that is primarily defined by one’s inner attributes, qualities, and opinions. This autonomous self-concept may further direct cognitive resources toward elaborate processing of event information that highlights one’s uniqueness and autonomy, and such information is likely to become richly represented and highly accessible during recall. In contrast, the emphasis on interdependence, group solidarity, and relational hierarchy in Confucian cultures such as Japan, Korea, and China encourages the development of a relational self-concept that is largely defined by one’s position in a nexus of social relations. This relational self-concept may motivate individuals to focus on event information about group activities and interactions, which helps

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them relate to significant others and the community (Wang, 2006a; Wang & Ross, 2007).

Consistent with these theoretical views, research has shown that when asked to describe themselves, European American individuals, both children and adults, tend to focus on their unique attributes, qualities, and beliefs independent of others or social contexts, whereas Japanese, Koreans, and Chinese frequently refer to their social roles, group memberships, and relationships with significant others (Cousins, 1989; Rhee, Uleman, Lee, & Roman, 1995; Trafimow, Triandis, & Goto, 1991; Wang, 2001, 2004). These different self-concepts across cultures are further related to different ways of autobiographical remembering, whereby European American children and adults often provide elaborate, lengthy accounts of personal experiences and focus on their own roles, feelings, and perspectives, whereas the memories of Koreans and Chinese are often brief and centered on shared activities and significant others (Han, Leichtman, & Wang, 1998; Mullen, 1994; Wang, 2001, 2004; Wang & Leichtman, 2000). These cross-cultural findings support the notion that the development of the self is a process of cultural adaptation (Kağıtçibaş, 2007; Miller et al., 2007; Wang, 2006a), during which individuals come to internalize cultural belief systems (e.g., independence vs. interdependence) into their own self-understanding and remembering (e.g., with an individual vs. a social orientation). Importantly, the acquisition of the cultural self may be attributed to a host of sociocultural variables, among which language as a symbolic system of culture may be central.

Language and the Self

Language lends stability to human experience and at the same time sustains flexibility adaptive to specific contexts (Nelson, 2001). Indeed, many theorists argue that the self can be viewed as developed, expressed, and reconstructed through narrative practices that occur in the realm of linguistic formulation (Bruner, 1990; Fivush & Nelson, 2004; Ochs, 1996). In particular, linguistic representation, through the structure and lexicon of the language and the social arrangement of the communicative context, may direct individuals’ attention to particular cultural models of self and render certain qualities or representations of the self salient and accessible (Chiu, Leung, & Kwan, 2007; Holland & Quinn, 1987). Furthermore, as proposed within the language socialization approach, language plays an essential role in the communication of cultural content while, in the meantime, contributing to meaning construction through linguistic forms (Fernald & Morikawa, 1993; Miller et al., 2007; Ochs, 1996). Language learning is thus a powerful medium of cultural transmission that enables children to acquire both linguistic and sociocultural competence.

One important approach to understanding the relation between culture, language, and the self is to study bilingual individuals. Given that cultural practices and meanings are so deeply embedded in language, the acquisition of a second language often entails the establishment of a new cognitive system—schemas, mental models, or representations—that reflects new ways of constructing the self and its relation to the social and physical world (Ochs, 1996; Schrauf, 2000; Valsiner, 2001). As a result, bilingual individuals may possess separate self-structures associated with different languages. Studies with bilingual adults have provided some evidence. Ross, Xun, and Wilson (2002) interviewed, in either Chinese or English, Chinese-born bilingual young adults living in Canada. They asked participants to describe themselves and to rate statements reflecting Chinese cultural values (e.g., “Modesty leads to success, pride leads to failure”). Those who participated in Chinese described themselves in more collective terms and endorsed Chinese values more strongly than did those surveyed in English. Similarly, when bilingual young adults from Hong Kong were asked to describe themselves, those who responded in Chinese used more collective and fewer individual terms than those who responded in English (Kemmelmeier & Cheng, 2004; Trafimow, Silverman, Fan, & Law, 1997). In addition, in a study of autobiographical memory in Russian English bilingual adults, Marian and Kaushanskaya (2004) found that memories recalled in English tended to be more self-focused, whereas memories recalled in Russian were more other oriented. These effects of language on self-concept and memory directly parallel the findings of cross-cultural studies (Han et al., 1998; Mullen, 1994; Wang, 2001, 2004; Wang & Ross, 2005).

From a developmental perspective, it is of great importance to examine whether the acquisition of different languages in children is accompanied by different modes of self-understanding and remembering. Furthermore, although the findings with adults suggest that language can bring self-concept and autobiographical memory in line with cultural belief systems, the specific mechanisms underlying the language effects are yet to be fully explicated. According to the constructivist view, language may
serve as a cue or prime for associated cultural constructs and thus increase the accessibility of relevant beliefs, self-concepts, and autobiographical information (Ross et al., 2002; Schrauf, 2000; Trafmow et al., 1997). More important from the current perspective, these language effects may not reflect simultaneous processes. Conceivably, the use of a particular language (e.g., Chinese) may activate a specific cultural frame or belief system (e.g., Confucian values) to which this language is chronically connected in everyday life. The cultural belief system may, in turn, activate culturally promoted self-concepts (e.g., a relational self), which may further increase the accessibility of relevant autobiographical event information (e.g., social interactions). In other words, the activated cultural belief system may mediate the effect of language on self-concept. In turn, given its executive role of modulating access to long-term memory (Conway, 2005; Conway & Pleydell-Pearce, 2000), the working self-concept may further mediate the effect of language on autobiographical memory. Figure 1 depicts the hypothesized direct effects and mediations. Alternatively, the cultural accommodation theory suggests that language may create a “response bias,” where individuals provide responses deemed appropriate or desirable by the culture in which the language is used (Bond & Yang, 1982). Thus, the use of a particular language may elicit associated culturally desirable beliefs, self-concept, and autobiographical recall. Such effects should appear in parallel and the unidirectional mediations will not be expected. This study addresses these theoretical issues by examining self-concept and autobiographical memory in bilingual children and adolescents from Hong Kong.

The Language and Culture of Hong Kong Children

Because of its 100-year reign by England that lasted until 1997, Hong Kong is a culturally dynamic place where Western and Chinese values intertwine and where modernity and tradition coexist. Historically, the British colonial and metropolitan authorities in Hong Kong promoted English-language education (vis-à-vis Chinese education). The policies and practices embrace both the promotion of Western education through the medium of English and the teaching and learning of English as a language subject (Tung, Lam, & Tsang, 1997). After its handover back to China, Hong Kong maintains its cultural ties to the Western world under the Chinese government’s “one country, two systems” policy (Hong, Morris, Chiu, & Benet-Martinez, 2000). Both Chinese and English are official languages. Many schools that were in place during the British reign have remained relatively unaffected, and English continues to be an important language to be learned starting even before formal schooling.

On the other hand, the Hong Kong society is conscious of preserving Chinese traditions, where Confucian ethics such as respect for the elderly, humility, and a sense of shame are highly prized. Children are exposed to traditional Chinese culture early on and come to learn and speak Chinese (Cantonese or Mandarin, depending on their family background) in their daily lives at home and in the community. Some parents also send their children to take additional Chinese classes outside school. Consequently, many children become proficient bilinguals from an early age. Furthermore, constant transition in everyday life between different cultural contexts such as home and school often requires full cultural competency in both (Hong et al., 2000; Kemmelmeier & Cheng, 2004). Many children thus grow up bicultural, living with their families in a city that has established traditional Chinese teachings and a rich cultural history, while seeking out Western friends, music, movies, toys and cuisine that are readily available to them (Deeds, Stewart, Bond, & Westrick, 1998; Feldman

Figure 1. The effects of language.
Note. The solid arrows represent the direct effects of language predicted by both the constructivist view and the cultural accommodation theory. The dashed arrows represent hypothesized mediations according to the constructivist view.
The bilingual and bicultural characteristics of Hong Kong children thus present us with a unique opportunity to test the relation of language to the development of a cultural self.

The Present Study

In the present study, bilingual 8- to 14-year-old children and adolescents from Hong Kong were interviewed in either English or Chinese. They were asked to recall autobiographical events and provide self-descriptions, and to indicate their agreement with Chinese interdependent versus Western independent values. We expected that, consistent with previous research with adults (Marian & Kaushanskaya, 2004; Ross et al., 2002; Trafimow et al., 1997), children interviewed in English would report higher agreement with Western independent values and lower agreement with Chinese values than those interviewed in Chinese, regardless of age. Also, across all age groups, children interviewed in English were expected to provide lengthier and more self-focused descriptions of themselves and their personal experiences, compared with those interviewed in Chinese whose memories and self-descriptions would be less elaborate and more socially oriented. Furthermore, in line with the constructivist view, we expected that the language of interview would prime the associated cultural belief system, which would then activate the self-concept consistent with the belief system and further shape the retrieval of autobiographical event information. Thus, the endorsement of a cultural belief system would mediate the effect of language on self-concept, which, in turn, would serve as a mediator for the effect of language on autobiographical memory.

Furthermore, including different age groups would help to reveal possible interactions between age, language, and cultural identification. Extant cross-cultural studies on the development of self-concept and autobiographical memory have focused on preschool and early grade school children (Han et al., 1998; Wang, 2004), included only one age group (Stigler, Smith, & Mao, 1985; Wang, 2006b; Wang & Leichtman, 2000), or not examined age effect in analysis (e.g., Hart, Lucca-Irizarry, & Damon, 1986). In Wang (2004) that included 4-, 6-, and 8-year-olds from European American and Chinese cultural backgrounds, it was found that older children in both cultures provided more self-descriptions and lengthier memories than younger children, which reflects children’s increasing cognitive skills with age. Accordingly, compared with younger children, older children described more personal as well as social themes in their memory recall and self-descriptions. Moreover, there were interactions between culture and age such that cultural differences, while identified in all age groups, appeared to become larger with age, suggesting the increasing enculturation as children grow older. It would be interesting to see whether similar patterns of results with the younger, monocultural children would be found in the older, bicultural children in the present study. However, given that there is no extant research on relevant topics with bilingual children in middle childhood and early adolescence, we made no priori predictions about effects related to age.

In addition, we examined gender effects because literature has suggested that across cultures, females often exhibit greater interdependence, whereas males often exhibit greater independence (Cross & Madson, 1997; Fivush & Buckner, 2003). Such gender differences might be reflected in children’s value orientations and self-knowledge such that, independent of language of interview, girls would endorse more strongly interdependent as opposed to independent values and provide more socially oriented self-descriptions and memory accounts, when compared with boys.

Method

Participants

The participants were 125 children from Hong Kong, including thirty-three 8-year-olds (M = 7.62, SD = 0.76, Mdn = 7.80; 20 girls), thirty-two 10-year-olds (M = 10.02, SD = 0.48, Mdn = 10.00; 13 girls), twenty-eight 12-year-olds (M = 12.02, SD = 0.58, Mdn = 12.03; 14 girls), and thirty-two 14-year-olds (M = 14.58, SD = 0.98, Mdn = 14.47; 22 girls). All children were ethnic Chinese and were proficient speakers of both English and Chinese (Mandarin or Cantonese). Based on initial conversations with the children, research assistants rated each child’s proficiency in both languages, respectively, in comparison with native speakers, on a 10-point scale of 1 (very poor) to 10 (excellent). The average Chinese proficient score was 9, and the average English proficient score was 8. There was no age difference in either score (Fs < 1, ns). Children were recruited from elementary and middle schools in primarily middle- and upper-middle-class communities. All parents gave informed consent. Fifty percent of the children’s mothers had a college education or beyond, 38% had a high school education, 2% received postgraduate professional training, and
10% did not provide the information. Children were randomly assigned to the Chinese or English interview condition, being matched as closely as possible on the basis of age and gender. Table 1 displays the mean ages and gender distributions of the children by interview condition. The Chinese interviews were conducted in Mandarin (11%) or Cantonese (89%), whichever dialect the child was most comfortable with.

### Procedure

Trained bilingual research assistants visited children at home and conducted the interview in a quiet room without the presence of parents or other family members. The interview procedure followed previous research on children's autobiographical memory and self-concept (Han et al., 1998; Wang, 2004). At the beginning of the interview, the interviewer first chatted with the child to establish rapport. When the child seemed relaxed and comfortable, the interviewer told the child, "You and I are going to play a fun game. It's called a question-and-answer game. I'm going to ask you some questions. You can reply in any way you want. There are no right or wrong answers. You'll see it's really fun. Are you ready?"

The first set of questions was about children's memories of personal experiences. Children were asked to recount four past events, including: one thing they did recently that was special and fun, a recent time when they argued with someone at school, a recent time when they did well on a school assignment, and their earliest childhood memory. After each memory question, the interviewer used standard prompts such as "What else happened?" and "Can you tell me more about it?" until the child indicated by speech or gesture that the memory was finished.

Following the memory questions, children were asked to describe themselves in response to open-ended questions (Keller, Ford, & Meacham, 1978; Wang, 2004). The interviewer told the child: "(Child’s name), I would like to write a story about you, to write a story that will tell about (child’s name). What’s the first thing I should put in the story?" She prompted the child after each response, "And what else should I write to tell about you?" until the child indicated by speech or gesture that he or she was finished.

The last set of questions tapped upon children's identification with or endorsement of Chinese cultural values such as interpersonal harmony, group solidarity, social compliance, and humility, versus Western independent values such as individual autonomy, personal sufficiency, and pride. The questions were adapted from Ross et al. (2002), the Self-Construal Scale (Singelis, 1994), and the Ethnic Identity Scale (Umana-Taylor, Yazedjian, & Bambaca-Gómez, 2004) and modified to be age appropriate. The interviewer posed to children 20 pairs of opposing statements that described a variety of behaviors, preferences, and emotional reactions pertaining to important others, social situations, and cultural artifacts. For example, children were asked, "If you get the highest grade in class, will you tell people about it or keep it to yourself?" and "When you have a big decision to make, do you ask your parents for advice or make your own plans?" Children responded by making a forced choice for each pair of the statements.

The order of the tasks was fixed across all children in order to test the hypothesized mediations in the most stringent way because any possible sequence effects (i.e., autobiographical recall → self-descriptions → culture beliefs) would work against the mediations (i.e., culture beliefs → self-descriptions → autobiographical recall). Each interviewer–child session lasted approximately 30 min. Children received small gifts for their participation. All interviews were audio tape-recorded and then transcribed verbatim onto paper for coding.

### Coding

**Endorsement of cultural values.** Children's responses to the cultural value questions were scored 1 whenever they agreed with Chinese values (e.g., asking parents for advice) and scored 0 whenever they responded in accordance with Western independent values (e.g., making one’s own plans). Reliability analysis showed that six items had negative correlations with the total scale ($r_s = -0.04$ to $-0.38$) and they were therefore excluded. The remaining items formed a reliable scale (Cronbach’s $\alpha = .70$), and their scores were aggregated to index

<table>
<thead>
<tr>
<th>Age group (years)</th>
<th>Chinese Mean (SD; % Girls)</th>
<th>English Mean (SD; % Girls)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>7.57 (0.71; 61)</td>
<td>7.71 (0.90; 60)</td>
</tr>
<tr>
<td>10</td>
<td>9.97 (0.45; 42)</td>
<td>10.17 (0.56; 38)</td>
</tr>
<tr>
<td>12</td>
<td>11.93 (0.69; 47)</td>
<td>12.12 (0.42; 54)</td>
</tr>
<tr>
<td>14</td>
<td>14.51 (1.20; 71)</td>
<td>14.63 (0.81; 67)</td>
</tr>
</tbody>
</table>

Note. Within each age group, there was no significant difference in age or gender distribution between the two language conditions.
the children’s endorsement of Chinese values (maximum score 14). Note that because the total number of items was fixed (i.e., 14 items), a low score on the scale (e.g., 3) would indicate low agreement with Chinese interdependent values (i.e., responding to 3 items in accordance with Chinese values) and high agreement with Western independent values (i.e., responding to 11 items in accordance with Western values). In other words, if each child were to receive two separate scores, one for the number of responses in accordance with Chinese values and one for the number of responses in accordance with Western values, the two scores would be perfectly correlated at −1 and they would yield identical results in analysis, only in different directions.

**Self-concept.** Children’s self-descriptions were coded as referring to personal versus social aspects of the self, following previous research (Trafimow et al., 1991; Wang, 2001, 2004). Proposition, defined as a subject–verb construction (in Chinese, 主语结)，was used as the coding unit (Fivush, Haden, & Adam, 1995). Each unique or implied verb in an independent clause forms a propositional unit (e.g., “I normally go to the library”). The total number of self-descriptions each child provided was first tabulated. Then self-descriptions were coded as personal whenever children referred to personal qualities, attitudes, beliefs, and behaviors that were not related to other people (e.g., “I am honest” and “I enjoy books”). Self-descriptions were coded as social whenever children referred to their social roles, demographic categories, and group memberships (e.g., “I live in Hong Kong” and “I am a student”), or important others, relationships, and sensitivity to the viewpoints of others (e.g., “I have many friends,” “My sister is at high-school,” and “I like to help other people”). The two codes were exclusive and exhaustive. A “personal-to-social” ratio was then calculated for each memory to index the degree of memory self-focus while controlling for the effect of memory length. A constant 1 was added to the denominator because some children did not describe any social content in their memories. The ratio scores were later submitted to analysis. Two trained research assistants first coded 20% of the data for reliability estimates, which ranged from 82% to 96%. Disagreement was resolved through discussion, and one assistant then coded the rest of the data.

**Autobiographical memory.** Following previous studies (Han et al., 1998; Wang, 2004), the length of children’s memories was first coded by counting the total number of English words or Chinese characters children used in each memory. Memory content was then coded, using proposition as the coding unit (Fivush et al., 1995; e.g., “Yesterday I went to fetch my award”). Propositions were coded as personal whenever children referred to their own emotions, actions, thoughts, preferences, and agency in their memories (e.g., “I was happy” and “I wanted to drink Coca Cola”). Propositions were coded as social whenever children referred to social interactions, group activities, and the roles of others (e.g., “We traveled” and “My father bought a Game Cake for me”). The two codes were exclusive but not exhaustive. A “personal-to-social” ratio was then calculated for each memory to index the degree of memory self-focus while controlling for the effect of memory length. A constant 1 was added to the denominator because some children did not describe any social content in their memories. The ratio scores were later submitted to analysis. Two trained research assistants first coded 20% of the data for reliability estimates, which ranged from 82% to 96%. Disagreement was resolved through discussion, and one assistant then coded the rest of the data.

**Results**

In connection with the hypotheses, results pertaining to the endorsement of cultural values, self-concept, and autobiographical memory are first presented. Across all the variables, 2 (interview language: Chinese vs. English) × 2 (gender: boys vs. girls) × 4 (age: 8-year-olds vs. 10-year-olds vs. 12-year-olds vs. 14-year-olds) analyses of variance (ANOVAs) were conducted. Power analysis (α = .05, power = 0.80, and effect size f = 0.30) indicated that the current sample size was adequate to test the three-factor model (Rosenthal & Rosnow, 1991). Children’s responses to the four memory questions showed overall consistent patterns; the analyses of memory variables were therefore performed based on the mean frequencies across the four memories. Mediation analyses were then conducted to test the hypotheses that the language use would activate the associated cultural belief system, which would mediate the effect of language on self-concept. Self-concept, in turn, would serve as a mediator for the effect of language on autobiographical memory. Some children did not answer every question; thus, the degrees of freedom varied slightly across tests.
Endorsement of Cultural Values

Children on average scored 9.76 (SD = 2.47) for their endorsement of Chinese values. If responding in Chinese activates Chinese interdependent values and responding in English activates Western independent values, children in the Chinese interview condition should evidence higher agreement with Chinese values and children in the English interview condition should evidence higher agreement with Western values. Consistent with the hypothesis, children answering in Chinese (M = 10.78, SD = 1.95) reported higher agreement with Chinese interdependent values, and thus lower agreement with Western independent values, than did children answering in English (M = 8.16, SD = 2.35), F(1, 109) = 43.29, p < .0001, \( \eta^2_p = .28 \). Figure 2 illustrates the mean Chinese value scores as a function of age and language of interview. In addition, girls (M = 10.17, SD = 2.22) reported greater endorsement of interdependent values than did boys (M = 9.24, SD = 2.67), F(1, 109) = 43.29, p < .0001, \( \eta^2_p = .28 \). There was no significant main effect or interaction related to age.

Self-Concept

Children on average provided 4.46 (SD = 8.67) self-descriptions. Inspection of the distribution showed that 3 children in the English interview condition were high-influence outliers, where the number of self-descriptions they provided (76, 34, and 32, respectively) were more than 3 SD above the group mean. When the 3 children were excluded from analysis, the average number of self-descriptions of the entire sample was 3.27 (SD = 3.57). A further ANOVA revealed that children in the English interview condition (M = 4.60, SD = 3.77) on average provided more self-descriptions than did children in the Chinese interview condition (M = 2.42, SD = 3.20), F(1, 92) = 7.90, p = .006, \( \eta^2_p = .08 \). There were no significant effects pertaining to age or gender.

Next, the autonomous self score, that is, the ratio of personal-to-social self-descriptions (M = 1.20, SD = 1.55), was analyzed as a function of language, gender, and age. Because the ratio score controlled for variations in the total number of self-descriptions children provided, the 3 outlier children were included in the analysis. Consistent with the prediction, children interviewed in English (M = 1.81, SD = 1.79) exhibited a greater sense of autonomous self than did children interviewed in Chinese (M = 0.78, SD = 1.20), F(1, 95) = 13.93, p = .0003, \( \eta^2_p = .13 \), regardless of gender or age. For example, a child interviewed in English responded that her story would include, “I like to play tennis . . . um, that I like to dance and um, I have a twin . . . that I like to do my homework and I like to swim . . . and I like, um, I have a favorite actor and singer.” In comparison, a child interviewed in Chinese responded that in the story about her, she would “Write about my family; write about my mommy, daddy, and brother; my family lives in Jiulongtang.” Figure 3 illustrates the mean autonomous self scores as a function of age and language of interview. No other main effect or interaction neared significance. Boys (M = 1.37, SD = 1.68) scored higher than girls (M = 1.05, SD = 1.43) on the autonomous self, although the difference was not significant.

Autobiographical Memory

The average length of children’s memories was 37.62 (SD = 31.87). Analysis revealed a main effect of language, F(1, 95) = 21.26, p < .0001, \( \eta^2_p = .18 \). As expected, children interviewed in English (M = 51.32, SD = 27.12) provided lengthier
memories than did children interviewed in Chinese ($M = 28.28$, $SD = 31.67$). There were no significant effects pertaining to age or gender.

Analysis of the degree of self-focus in children’s memory ($M = 1.10$, $SD = 0.65$), that is, the ratio of personal-to-social memory content descriptions, further revealed a main effect of language, $F(1, 95) = 5.25$, $p = .02$, $\eta^2_p = .05$. Children interviewed in English ($M = 1.30$, $SD = 0.72$) provided more self-focused memories than did children interviewed in Chinese ($M = 0.97$, $SD = 0.58$), regardless of gender or age. Figure 4 illustrates the mean memory self-focus scores as a function of age and language of interview. There was no other significant main effect or interaction. Boys ($M = 1.12$, $SD = 0.70$) scored higher than girls ($M = 1.09$, $SD = 0.61$) on memory self-focus, although the difference was not significant.

The following two memory examples, both about a social conflict, further help illustrate the effects of language on memory retrieval. The first memory, provided by a child in the Chinese interview condition, focused on social interactions, group activities, and the roles of others, whereas the second memory, provided by a child in the English interview condition, highlighted the child’s own roles, opinions, and perspectives.

**Memory 1:** Once, my classmates and I were making a poster. One classmate wanted us to use his design. The rest of us didn’t really like his idea. We didn’t know what to do and argued with him. We all screamed, and the Head teacher had to come. In the end, even the Head teacher thought that he was wrong. So we started designing the poster all over again.

**Memory 2:** Well, usually I argue with people because that’s just sort of my nature. I like arguing. And recently I won this science competition thing at school and when I got the award I told one of my friends. Then he just didn’t believe it so then I got a bit angry because he’s supposed to believe it . . . well, basically, then I thought he was getting a bit selfish and stuff so I decided to just ignore him for a couple of days.

**Mediation Effects**

To test the predicted mediation effects, two mediation analyses were conducted (Baron & Kenny, 1986; MacKinnon, Warsi, & Dwyer, 1995). Figure 5 illustrates the results from the analyses. The first analysis tested whether the effect of language on self-concept was mediated by the activation of cultural value systems (see Figure 5a). To establish the conditions for mediation, language (i.e., the predictor) was first regressed on Chinese value scores (i.e., the mediator) and autonomous self scores (i.e., the criterion), respectively (language was coded 1 for Chinese and 0 for English). The effects were significant in both cases, $t = 6.76$, $p < .0001$, and $t = -3.63$, $p = .0004$. A further regression confirmed that Chinese value scores had a significant effect on autonomous self scores, $t = -2.03$, $p = .04$, independent of language. Furthermore, when both language and Chinese value scores were simultaneously regressed on autonomous self scores, the independent contribution of language was substantially reduced, $t = -2.16$, $p = .03$, 

![Figure 4. Mean memory self-focus scores as a function of age and language of interview.](image)

![Figure 5. Mediation analyses.](image)

*Note. Language was coded 1 for Chinese and 0 for English. The coefficients in parentheses are from regressions when the mediator was included in the equation.

$p < .05$, $**p < .01$, $***p < .001$, $****p < .0001$. 
whereby the standardized regression coefficient (β) of language decreased in both size and significance. The reduction was significant by the stringent Sobel (1982) test for mediation, $Z = -1.95, p = .05$. Thus, the activated cultural beliefs system is indeed a potent mediator for the effect of language on self-concept.

The next mediation model tested whether the working self-concept mediated the language effect on autobiographical memory (see Figure 5b). Language was a significant predictor of autonomous self scores, $t = -3.63, p = .0004$, and memory self-focus scores, $t = -2.62, p = .01$. Autonomous self scores were also related to memory self-focus scores, $t = 2.37, p = .02$, independent of language. Furthermore, the independent contribution of language to memory self-focus was reduced to a non-significant level by the effect of the mediator, the autonomous self, $t = -1.69, p = .09$. The reduction was significant by the Sobel (1982) test, $Z = -1.98, p = .05$. Thus, the activated autonomous self mediated the effect of language on memory self-focus.

Note that children were first tested for autobiographical recall, followed by the self-description task and then the cultural value questions. Were there any effects of the task sequence such that retrieving certain autobiographical information might lead children to adopt self-concepts consistent with such information, which in turn, might shape their endorsement of cultural values? To answer this question, we tested alternative models of the above analyses. We tested in the first model (Figure 5a) whether the autonomous self mediated the language effect on the endorsement of Chinese values instead. Then, we tested in the second model (Figure 5b) whether memory self-focus mediated the language effect on the autonomous self. In both alternative models, when language and the mediator were simultaneously regressed on the criterion, the effect of language was not significantly reduced compared with when language alone predicted the criterion, Sobel (1982) test $Z = 1.77, ns$, and $Z = -1.76, ns$, respectively. Thus, there were no mediations due to the task sequence. In addition, we tested a third model with language being the predictor, Chinese value scores being the mediator, and memory self-focus being the criterion. It was found that Chinese value scores did not relate to memory self-focus scores, $t = -0.94, p = .35$. The conditions for mediation were therefore not met (Baron & Kenny, 1986). Thus, the activation of culture belief systems did not have a direct effect on autobiographical memory, nor did it mediate the effect of language on memory.

Discussion

The present study is the first to test the effects of language on the cultural self among children. Two aspects of the self, namely, self-concept and autobiographical memory, were examined in bilingual children and adolescents from Hong Kong. Consistent with the predictions, across all age groups, children interviewed in English gave lengthier accounts about themselves and their personal experiences, and they focused more on unique personal attributes and qualities when describing themselves and talked more frequently about their own roles and perspectives in their autobiographical recall, compared with children interviewed in Chinese who provided less elaborate and more socially oriented self-descriptions and memory accounts. In addition, children responding in Chinese reported higher agreement with Chinese interdependent values and lower agreement with Western independent values than did those responding in English, regardless of age. Furthermore, the activation of cultural belief systems mediated the effect of language on self-concept, which, in turn, mediated the effect of language on autobiographical memory. Thus, linguistic usage (i.e., Chinese vs. English) triggered specific cultural belief systems (i.e., interdependence vs. independence), which further shaped the children’s conceptions of self and autobiographical memory.

These findings suggest that bilingual children possess different modes of self associated with different languages. They support the theoretical notion that language as a representational medium of culture, represents, maintains, and further expresses the self through linguistic and conceptual configurations (e.g., syntax, grammar, vocabulary) and, perhaps more importantly, the associated (cultural) ways of thinking (Chiu et al., 2007; Holland & Quinn, 1987; Schrauf, 2000). Furthermore, as embedded practices, language learning and narrative interactions more generally take place in culturally organized communicative contexts that transmit to children not only linguistic and communicative skills but also cultural knowledge and competence (Fernald & Morikawa, 1993; Miller et al., 2007; Ochs, 1996). For instance, when sharing memories with their young children, European American mothers often focus on the child’s roles and predilections in the past event and encourage the child to elaborate on his or her own perspectives. This child-centered, elaborative style facilitates children’s detailed remembering of personal experiences that highlight their uniqueness and
socialize children into an autonomous sense of self. In contrast, Chinese mothers often focus on shared activities, important others, and social norms and expect the child to answer pointed questions without elaboration. This group-oriented, pragmatic style helps children develop a sense of belonging and social compliance, and yet downplays the construction of elaborate personal stories and, further, a unique individual identity (Miller et al., 2007; Wang, Leichtman, & Davies, 2000). Through such joint activities, children gradually internalize culture-specific ways of defining themselves and remembering personal experiences (Wang, 2004, 2006a). Language is thus critical to the development and maintenance of a cultural self. For bilingual children, learning to speak two different languages equips them with multiple tools of constructing the self in relation to the sociocultural world. And developing different representations of the self in relation to different languages may further provide them with the flexibility to respond effectively to myriads of cultural and linguistic contexts that they transition in and out in everyday life (Ross et al., 2002; Schrauf, 2000).

The current findings are further provocative in terms of the specific mechanisms underlying the effect of language on the self. According to the cultural accommodation theory (Bond & Yang, 1982), the use of a language may create a “response bias” in the direction valued by the culture associated with that language, a process that may take place as either conscious self-presentation or unconscious automatic association. Although this theoretical view can account for the language effects on the children’s agreement with Chinese versus Western independent values and their self-descriptions and memory recall, it does not predict the mediation effects. Alternatively, the constructivist view within a social-cognitive framework suggests that the use of a language may serve as a cue that makes salient and accessible the cultural belief system chronically associated with that language. The activated cultural belief system may further activate self-concepts congruent with the belief system. In turn, the currently operative working self-concepts may modulate retrieving of confirmatory autobiographical event information (Schrauf, 2000; Wang, 2008; Wang & Ross, 2005). The results from the mediation analyses lend support for this view, whereby responding in Chinese (vs. English) activated Chinese interdependent (vs. Western independent) values, which mediated, at least partially, the effect of language on the autonomous self. In turn, the autonomous self mediated the effect of language on the degree of self-focus in memory recall. These mediation effects were particularly notable given that the order of the tasks was arranged in a way that would work against the mediations. Indeed, the tests of alternative models showed that the mediations did not occur in opposite directions in spite of possible sequence effects among the tasks. It would be interesting to test in future studies if the expected mediation effects will become more potent when the task order is in favor of the mediations.

This “chain of reactions” has important implications for cross-cultural differences in self-concept and autobiographical memory (e.g., Cousins, 1989; Mullen, 1994; Rhee et al., 1995; Wang, 2001, 2004). In the daily life, language, no matter whether it is used privately in thinking or overtly in communication, may serve as a constant reminder of cultural knowledge and beliefs, which can further lead individuals to adopt self-concepts consistent with these knowledge structures. The culturally endorsed self-concepts, or cultural self-construals (Kagitcibi, 2007; Markus & Kitayama, 1991), may remain chronically active, salient, and accessible given the constant reinforcement of the linguistic-cultural context in which individuals reside. In turn, they may drive cognitive resources into the privileged processing and retrieving of autobiographical information that confirms the goals and motivations associated with the self-concepts (Conway & Pleydell-Pearce, 2000), thus giving rise to culture-specific ways of autobiographical remembering (Wang & Ross, 2007).

Notably, the activation of culture belief systems did not have a direct effect on autobiographical memory, nor did it mediate the effect of language on memory. This might seem counterintuitive given the cross-cultural findings that people in different cultures, upholding different cultural beliefs (e.g., independence vs. interdependence), tend to remember their autobiographical experiences in different ways (e.g., being self-focused vs. being socially oriented) consistent with their cultural beliefs (Han et al., 1998; Mullen, 1994; Wang, 2001, 2004; Wang & Leichtman, 2000). However, recent research examining specific mechanisms in individual social-cognitive processes that give rise to cultural differences suggests that culturally endorsed self-concepts function as a potent mediator or predictor in explaining cultural effects on autobiographical memory (Wang, 2006b, 2008; Wang & Ross, 2005). Similarly, the current study showed that the activation of culture belief systems indirectly influenced memory through the currently activated cultural self-concepts. These findings are consistent with
general cognitive theories that emphasize the executive role of the conceptual self in modulating the constructive process of autobiographical remembering in line with the self’s current goals and motivations (Conway, 2005; Conway & Pleydell-Pearce, 2000; Ross, 1989).

As expected, language effects were observed in children of all age groups. This, coupled with prior findings with adults (Kemmelmeyer & Cheng, 2004; Marian & Kaushanskaya, 2004; Ross et al., 2002; Trafimow et al., 1997), suggests that the mechanisms underlying the language effects may operate similarly across age groups. On the other hand, unlike previous cross-cultural findings with preschool and early grade school children (Han et al., 1998; Wang, 2004), age effects and age-related interactions did not emerge in the current sample of children in middle childhood and early adolescence. This might be related to the nature of the tasks that had been previously used with younger children (Han et al., 1998; Wang, 2004, 2006b) and were therefore simple enough for older children and adolescents to give readily responses, thus eliminating age effects due to developmental differences in cognitive skills. Furthermore, the variables of interest might not differentiate among the children and adolescents of the limited age range of 8–14 years, who, at least in the current sample, showed similar levels of bilingual proficiency and might therefore have similar degrees of bicultural identification (Schrauf, 2000). Future research that includes children and adolescents of a wider age range is called for.

In line with the predictions, girls endorsed more strongly value systems emphasizing interdependence as opposed to independence than did boys, and their memories and self-descriptions appeared to be more socially oriented than those of boys, although the latter differences did not reach significance. These gender-related findings are consistent with the notion that gendered value orientations and self-knowledge emerge early though different family socialization practices and societal expectations (Cross & Madson, 1997; Fivush & Buckner, 2003). One important question to pursue further in this line of research is to examine differing developmental processes and consequences for boys and girls when gender norms and cultural norms coincide or clash.

The current findings have further implications for the development of the self in the immigration context. Many immigrant children and adolescents in the United States, for instance, are often exposed to contrasting cultural values and practices across various contexts of home, school, community, and the larger society (Mahalingam, 2006). Research has shown that developing a bicultural self, where immigrant individuals identify with both the host culture and their culture of origin, lends flexibility to cognition and behavior and is positively associated with psychological well-being (Kim & Omizo, 2006; Ryder, Alden, & Paulhus, 2000). In line with language socialization theories (Chiu et al., 2007; Miller et al., 2007; Ochs, 1996), findings from this study and previous studies with bilingual immigrant adults further suggest that bilingual proficiency may facilitate both the preservation of the ethnic culture and the adoption of the host culture, and may be a critical factor for the construction of a bicultural self among immigrants (Marian & Kaushanskaya, 2004; Ross et al., 2002; Schrauf, 2000). It should be noted, however, that different from the bilingual–bicultural children in Hong Kong, immigrant children may face unique obstacles as they strive to sustain their ethnic culture and language often without broader societal encouragement or recognition to do so, and this can make the development of a bicultural self an ever challenging task. Further longitudinal research is required to examine systematically how immigrant children come to develop a bicultural self in the process of acquiring the first and second languages and what important individual, familial, and societal factors are involved in this process.

George Miller once commented that “no general theory of psychology will be adequate if it does not take account of language” (Miller, 1990, p. 7). Applied to the self, it may follow that no theory of self-development will be adequate if it does not take account of language socialization. Our findings suggest that language is a powerful device for activating and reinforcing associated cultural constructs and plays a critical role in the construction, maintenance, and expression of a dynamic cultural self. In the process of becoming proficient speakers of their languages, children come to acquire cultural knowledge and culturally promoted self-views and are further socialized into competent members of their society.

References


