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# Culture and Well-Being: The Cycle of Action, Evaluation, and Decision

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*Two studies were conducted to examine how European and Asian Americans experience and remember their task performance, make a decision about a future task, and how that decision affects enjoyment of the task. In Study 1, although Asians solved as many anagrams as European Americans, Asians remembered solving fewer than did European Americans at Time 2. European Americans' Time 2 choice of task was predicted from Time 1 performance, but Asians' Time 2 choice was not. In Study 2, European Americans chose the same task if they had previously done well and a different task if they had not. Their actual enjoyment of the Time 2 task, furthermore, was significantly higher than at Time 1. In contrast, there was no change in actual enjoyment of the task at Time 2 among Asians because their choice was not based on their performance at Time 1.*

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Everyday life consists of a series of actions, evaluations, and decisions. We engage in a certain activity (e.g., taking introduction to chemistry). If we do well and enjoy doing it, we are likely to choose to do it again (e.g., taking organic chemistry). If we do not do well, we choose to do something else (e.g., taking psychology). The subsequent courses of action also are determined, in part, by how well we perform the task of our own choice and how much we enjoy it. This cycle captures a mundane yet critical rhythm of our everyday lives. If the main goals of well-being research are to understand how people live their lives and evaluate them, and why certain individuals experience more happiness and report a higher level of overall well-being than others, it is crucial that well-being researchers investigate the cycle of these processes. Nevertheless, most research so far in subjective well-being (SWB) has not paid sufficient attention to the full cycle of action, evaluation, and decision. Thus, it is still largely

unknown how people's mundane experiences are remembered, how the memory for these experiences is used in subsequent decisions, and how the decisions in turn affect subsequent experiences in realistic life contexts. The lack of research attention to *specific* processes involving action, evaluation, and decision is particularly salient in an emerging subfield of SWB: culture and well-being. The main purpose of this article is to examine cultural variance or invariance in these specific processes related to one's affect and well-being.

## *Culture and Well-Being: Theoretical Backgrounds*

One of the most replicated findings in SWB is that people in East Asia tend to report a lower level of life satisfaction and less frequent experience of positive emotions than do people in North America and Western Europe (e.g., Diener, Diener, & Diener, 1995). The motivated cognition literature (e.g., Dunning, 1999) has shown that there are more opportunities for deriving a self-serving interpretation of a question when the question is asked in global terms (e.g., intelligent) than when it is asked in specific terms (e.g., computer programming skills). Given that virtually all existing cross-cultural surveys on well-being used global questions (e.g., how satisfied are you with your life as a whole?), the observed cultural differences might be due to the cultural differences in the degree of motivated cognition. In this vein,

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prominent cultural psychologists (Heine, Lehman, Markus, & Kitayama, 1999; Kitayama, 1997) have argued that European Americans tend to be motivated to view themselves in a positive light, whereas East Asians tend to be motivated to improve themselves over time, and therefore tend to view themselves in a critical light.

Consistent with self-criticism theory, Diener, Scollon, Oishi, Dzokoto, and Suh (2000) found that college students in Japan, Korea, China, and Hong Kong rated their satisfaction with global domains (e.g., education) lower than the average of their satisfaction with the corresponding specific domains (e.g., textbooks, professors). Consistent with self-enhancement theory, college students in the United States rated the global domains more satisfying than the corresponding specific domains. Similarly, Oishi (2002) found that even when Asian and European American participants reported similar mean levels of daily satisfaction for a 7-day period, European Americans later reported being more satisfied with the whole week than did Asians. In addition, whereas the week-as-a-whole judgment was best predicted by the best day's satisfaction among European Americans, it was best predicted by the worst day's satisfaction among Asians. This suggests that when making global judgments of well-being, European Americans tend to pay attention to positive aspects of relevant information, whereas Asians tend to pay attention to negative aspects of relevant information. Thus, these studies showed that cultural differences observed in the previous studies might be in part due to cultural differences in how individuals integrate specific pieces of information in making global well-being judgments.

These studies illustrate the importance of understanding cognitive processes in interpreting cultural differences in global self-reports of well-being. However, previous research on cognitive processes in well-being judgments across cultures (e.g., Diener et al., 2000; Oishi, 2002; Oishi, Wyer, & Colcombe, 2000; Suh, Diener, Oishi, & Triandis, 1998) have not provided much information about how individuals with different cultural backgrounds might react affectively to a specific event, remember the affective experience, and make a decision about what to do next in a naturalistic context. In other words, although the existing research helped clarify how individuals with different cultural backgrounds form responses to global questions about well-being, knowledge concerning how individuals with different cultural backgrounds manage their moods in specific life contexts is noticeably missing in the literature. The present research attempts to fill this gap. First, we briefly review previous cross-cultural findings concerning affective experiences, memory, and behavioral choice. Then, we report two studies that examine affective

processes involving a series of actions, evaluations, and decisions.

#### *How Do People From Different Cultures React to a Given Event?*

In a classic study, Lazarus, Tomita, Opton, and Kodama (1966) discovered that Japanese self-reports of distress in reaction to a subincision film were comparable to Americans', although Japanese showed a greater degree of physiological indices of stress than Americans. More recently, Tsai and Levenson (1997) obtained no cultural differences between Asian and European Americans in physiological reactions and self-reported affect during a conversation about interpersonal conflicts. Kitayama, Markus, Matsumoto, and Norasakkunkit (1997) demonstrated that Japanese felt good about themselves when they read situational scenarios written by Americans, whereas Americans felt bad about themselves when they read situational scenarios written by Japanese. That is, although Americans felt better about themselves than did Japanese in general, when they read Japanese stories, they felt as bad about themselves as the Japanese. Similarly, when Japanese read American stories, they felt as good about themselves as Americans. It appears, therefore, that the way Asians react to a given situation is similar to European Americans.

#### *How Do People From Different Cultures Remember the Experience?*

Since Bartlett's (1932) famous study on herdsmen in East Africa, there have been many studies showing cultural differences either in accuracy or content of memory (e.g., Hedden et al., 2002; Wang, 2001). Consistent with self-criticism versus self-enhancement theory, Oishi and Schimmack (2002, Experiment 1) found that although there were no cultural differences in emotional experience at the time of reading scenarios, when asked later, European Americans reported having experienced happiness and pride more frequently than did Asian Americans. Endo and Meijer (2001) found in their autobiographical memory task that Americans listed more success events than failure events in their lives, whereas Japanese listed an equal number of successes and failures. Although the number of studies in this area is still very small, the existing literature suggests that European Americans tend to remember positive experiences more than negative ones (e.g., Greenwald, 1980), whereas East Asians seem to show a balanced memory for both positive and negative experiences.

#### *Culture and Choice*

Finally, recent studies found considerable cultural differences in behavioral choice and decision (e.g., Briley, Morris, & Simonson, 2000; Heine et al., 2001; Hoshino-

Browne & Spencer, 2000; Iyengar & Lepper, 1999; Kim & Markus, 1999). For instance, Heine et al. (2001) found that Japanese chose to perform the modified version of the Remote Association Task longer after having received failure feedback than after having received success feedback, whereas European Canadians and European Americans chose to perform it longer after the success feedback than after the failure feedback. These findings suggest that European Americans' decisions and choices are influenced by how they perceive their past performance, whereas Asians' decisions are influenced by how they might improve their performance.

In addition, personal choice seems to have different consequences for Asian Americans and European Americans. Iyengar and Lepper (1999) found that Asian American school children enjoyed and performed anagram and math problems better in an imposed condition (i.e., when they were told that the task was chosen by their mothers) than in a free-choice condition. In contrast, European American school children enjoyed and performed the same problems better in a free-choice condition than in a chosen condition. Thus, personal choice seems to provide more positive affect for European Americans than for Asian Americans.

The findings on cultural differences summarized above do not negate the fact that European Americans do persist after failing a task or feeling bored under certain circumstances, such as when there is a compelling reason to continue (Sansone, Weir, Harpster, & Morgan, 1992) or when the performance goal is salient (Sansone, Sachau, & Weir, 1989). There are also individual differences in achievement motives that influence the degree to which people persist after a failure (Tauer & Harackiewicz, 1999). However, the previous cross-cultural findings point to our hypotheses regarding general cultural differences in task enjoyment, memory for the task, and future task choice: (a) There is no difference in actual task performance and enjoyment of the task between European Americans and Asian Americans<sup>1</sup>; (b) however, European Americans will remember having performed better than Asian Americans. (c) Furthermore, the choice of future tasks by European Americans will be influenced by past success and enjoyment, whereas this choice by Asian Americans will not be influenced by past success and enjoyment, and (d) European Americans will make this choice so as to increase task enjoyment, whereas Asian Americans will not make this choice to increase task enjoyment. Two studies were conducted to examine these hypotheses.

#### STUDY 1: AN ANAGRAM STUDY

In Study 1, Asian and European American participants performed an anagram task at Time 1, from which a performance measure could be taken. One month

later, they returned to the laboratory and estimated the number of anagrams that they thought they had solved successfully and finally were asked to choose one of two word tasks, either another anagram task or a word completion task. Study 1 examined how Asian and European Americans would perform the task (i.e., action), how they would remember their performance 1 month later (i.e., memory and evaluation), and how they would make a decision about their subsequent action (i.e., decision).

#### Method

##### PARTICIPANTS

At Time 1, participants were 32 European American and 32 Asian students enrolled in an introductory psychology course at the University of Illinois. Out of the original 64 participants, 22 European American (68.8%) and 27 Asian participants (84.4%) came back to the Time 2 session (or 76.6% overall). There was no cultural difference in the proportion of participants returned,  $\chi^2 = 2.18$ , *ns*. Among returnees, 4 European American and 2 Asian participants did not provide the key information (e.g., "don't remember" when asked about number of anagrams solved at Time 1) at Time 2. Thus, the final analysis consisted of 18 European American (6 men, 12 women) and 25 Asian students (11 men, 14 women). We examined whether those who returned to the experiment at Time 2 were different from those who did not. First, there was no difference in the number of anagrams solved at Time 1 between those who came back and those who did not (6.90 vs. 7.93),  $t(62) = -.60$ , *ns*. Also, there was no difference in affective reaction (3.80 vs. 3.80),  $t(62) = -.01$ , *ns*, or perceived difficulty of the task between those who returned and those who did not (2.87 vs. 2.78),  $t(62) = -.19$ , *ns*.

Two of the 18 European Americans (11%) were born outside of the United States, whereas 14 of the 25 Asians (56%) were born outside of the United States, and 4 of them had lived in the United States less than 10 years. Similarly, 17 out of the 18 European Americans (94%) reported that English was their first language, whereas 12 of the 25 Asians (48%) reported that English was their first language. Out of the 13 Asians whose first language was not English, 6 reported Chinese, 2 reported Korean or Japanese, and 1 reported Tamil, Taiwanese, or Tagalog as his or her first language.

##### MATERIALS AND PROCEDURE

Participants were run in groups of 4 to 10 persons at both Times 1 and 2. At Time 1, they were seated in a private cubicle with a door. They were told that the experiment would consist of three parts: (a) life events, (b) emotional experiences and domain satisfaction during the previous 2 weeks, and (c) word task. Parts 1 and 2

were irrelevant to the current investigation. After they completed the first two parts, the participants notified the experimenter. The experimenter gave them a sheet of paper on which there were 20 anagrams. The experimenter read the instructions for the anagram task to each participant individually, asked whether he or she understood the instructions, and gave each participant two sample anagrams and their answers. After making sure that the participants understood the task, the experimenter told them that they would be given 3 min to solve as many anagrams as possible. After the anagram task, they were asked to indicate their current feelings on a 7-point scale (1 = *horrible* to 7 = *great*) and how difficult or easy they thought the task was on a 7-point scale (1 = *extremely difficult* to 4 = *neutral* to 7 = *extremely easy*). This item was reverse-coded so that the higher number indicates more difficulty. Finally, they were asked to answer several background questions, including whether they were born in the United States, whether English was their first language, religion, race, age, sex, and year in college. They were thanked and asked to come back to the second session later.

About 1 month later, participants came back to the same experimental laboratory in the same groups. Again, the participants were told that the experiment would concern life events, emotional experiences, and memory for task performance at Time 1. The first two parts were again irrelevant to the current investigation. After the participants completed the first two parts, they were asked to estimate the number of anagrams they thought they had successfully solved at Time 1. They were then asked to indicate which task they would like to perform this time, either another anagram task or a word completion task. They were given examples of a word completion task before they made this choice. After the participants made their choice, they were thanked and debriefed.

## RESULTS AND DISCUSSION

Before we tested our hypotheses, we first examined whether there were group differences in the degree to which task performance (i.e., the number of anagrams accurately solved at Time 1) was related to affective reaction to the task and perceived difficulty of the task. Differences in the strength of the associations suggest that the meaning of the task was different between two groups. The correlation between task performance and affective reaction was .67,  $p < .01$ , among European Americans and .56,  $p < .01$ , among Asian Americans. In both groups, therefore, higher performance was related to more positive affective reaction. The correlation between task performance and perceived difficulty was  $-.92$ ,  $p < .01$ , among European Americans and  $-.89$ ,  $p < .01$ , among Asian Americans. In both groups, higher

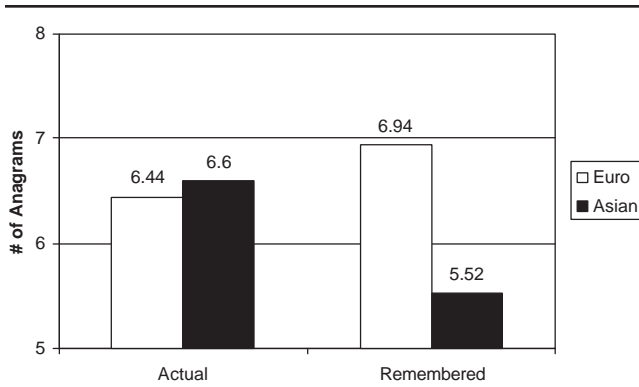
performance was clearly linked to perceived easiness of the task. There were no group differences in the size of correlations,  $z_s < .53$ , *ns*. Next, we tested whether there were any gender differences in task performance, remembered performance, immediate affective reaction to the task, perceived difficulty of the task, and the degree to which remembered task performance, immediate affective reaction, or perceived difficulty of the task was related to Time 2 choice by *t* tests and logistic regressions. There were no gender differences on the mean levels,  $t_s < 1.89$ ,  $p_s > .07$ ,  $d < .60$ , or the size of associations, *Wald* for interaction terms in logistic regressions  $< .95$ ,  $p_s > .33$ . Thus, we did not include gender in our analyses below. We also tested whether Asians who were born in the United States and those who were born outside the United States would be different on these variables. There were no differences between the two groups in any variable,  $t(23) < -1.23$ , *ns*,  $d < .52$ , *Wald* = 2.39,  $p = .12$ . Finally, we examined whether Asians whose first language was English would be different from those whose first language was non-English. There were no differences between the two groups on any variable,  $t(23) < -.28$ , *ns*,  $d < .12$ , *Wald* = .14, *ns*.

### *Hypothesis Testing: Performance and Memory for the Performance*

At Time 1, European Americans solved, on average, 6.44 ( $SD = 6.02$ ) anagrams, whereas Asians solved, on average, 6.60 ( $SD = 5.42$ ) anagrams correctly,  $t(41) = -.09$ , *ns*,  $d = -.03$ . At Time 2, however, European Americans remembered having solved 6.94 ( $SD = 7.04$ ) anagrams, whereas Asians remembered having solved 5.52 ( $SD = 4.64$ ),  $t(41) = .80$ , *ns*,  $d = +.25$ . It is interesting to note that European Americans tended to remember solving slightly more anagrams than they actually did,  $t(17) = .89$ , *ns*,  $d = +.22$ . By contrast, Asians remembered solving significantly fewer than they actually did,  $t(24) = 2.16$ ,  $p < .05$ ,  $d = -.44$ . A repeated-measure ANOVA with the actual number of anagrams solved and the remembered number of anagrams as a within-subject variable and group membership as a between-subject variable revealed a significant two-way interaction,  $F(1, 41) = 4.35$ ,  $p < .05$  (see Figure 1). In support of our hypothesis, the way Asians and European Americans remembered their performance on the anagram task was different, although their actual performance was almost identical (see Figure 1).

### *Remembered Performance and Choice*

Out of the 18 European Americans, 7 (39%) chose the anagram task and 11 (61%) chose the word completion task. Thirteen Asians (52%) chose the anagram task, and 12 Asians (48%) chose the word completion task at Time 2. There was no group difference in overall



**Figure 1** The actual number of anagrams solved at Time 1 and the number of anagrams participants remembered having solved at Time 2 in Study 1.

tendency to choose one task over the other, Pearson's  $\chi^2(1) = .72, ns$ .

Next, we examined the degree to which the choice at Time 2 was influenced by how well they thought they performed the task and whether there would be group differences in the degree to which the memory for their earlier performance was predictive of Time 2 choice (0 = anagram, 1 = word completion task) using logistic regression. There was a main effect of remembered Time 1 performance ( $B = -.69, SE = .35, Wald = 3.99, p < .05$ ), such that individuals who remembered performing well at Time 1 chose the same task again to a greater degree than others. Consistent with our hypothesis, however, this main effect was qualified by the Remembered Time 1 Performance  $\times$  Group Membership interaction,  $B = .32, SE = .19, Wald = 2.76, p < .05$  (a one-tailed test was used here and in the rest of the interactions because the direction of the interactions was a priori predicted). Whereas European Americans' choice was based on how well they thought they had performed the task at Time 1 ( $B = -.38, SE = .17, Wald = 5.07, p < .05$ ), Asians' choice was not based on how well they thought they had done earlier ( $B = -.06, SE = .09, Wald = .49, ns$ ).

#### *Affective Reaction to the Anagram at Time 1 and Task Choice at Time 2*

Right after completing the anagram task at Time 1, participants indicated their feeling at that moment. In support of our hypothesis, there was no group difference in immediate affective reaction between European Americans ( $M = 3.94, SD = 1.39$ ) and Asians ( $M = 3.56, SD = 1.33$ ),  $t(41) = .92, ns, d = .29$ . Next, we tested whether the immediate affective reaction to the task at Time 1 would predict the choice of task 1 month later at Time 2 and whether there would be group differences in the size of association, using logistic regression. There was a marginally significant main effect of affective reaction at Time 1 ( $B = -2.34, SE = 1.23, Wald = 3.64, p = .056$ ),

such that individuals who felt positive about the task at Time 1 tended to choose the same task at Time 2. This main effect was again qualified by the Affective Reaction  $\times$  Group Membership interaction ( $B = 1.23, SE = .67, Wald = 3.38, p < .05$ ). Among European Americans, the affective reaction at Time 1 marginally predicted the task choice at Time 2 ( $B = -1.11, SE = .59, Wald = 3.50, p = .06$ ). By contrast, among Asians, the immediate affective reaction did not predict the choice of the task at Time 2 ( $B = .12, SE = .31, Wald = .15, ns$ ).

#### *Perceived Difficulty and Choice*

Right after reporting their current moods, participants reported how difficult or easy they felt the anagram task was at Time 1. The mean perceived difficulty was 2.89 ( $SD = 1.91$ ) for European Americans and 2.48 ( $SD = 1.36$ ) for Asians,  $t(41) = .82, ns, d = .26$ . Next, we examined whether perceived difficulty of the anagram task at Time 1 would predict the choice of the task at Time 2 and whether there would be group differences in the size of associations, using logistic regression. There was a main effect of perceived difficulty ( $B = -2.18, SE = 1.89, Wald = 3.89, p < .05$ ), such that individuals who perceived the anagram task as more difficult chose the word completion task at Time 2 to a greater degree than others. This main effect was again qualified by the Perceived Difficulty  $\times$  Group Membership interaction ( $B = 1.01, SE = .58, Wald = 3.03, p < .05$ ). Among European Americans, perceived difficulty at Time 1 clearly predicted the task choice at Time 2 ( $B = -1.17, SE = .49, Wald = 5.65, p < .05$ ). However, among Asians, perceived difficulty at Time 1 did not predict the task choice at Time 2 ( $B = -.16, SE = .31, Wald = .28, ns$ ).

In summary, Study 1 showed that there were no group differences in actual performance, immediate affective reaction, and perceived difficulty of the anagram task at Time 1. Nevertheless, there were group differences in the way in which European Americans and Asians remembered their performance. In addition, remembered performance, perceived difficulty, and affective reaction at Time 1 all predicted the choice of the task at Time 2 for European Americans, indicating European Americans' tendency to build on their strengths; if they succeeded, they would continue, whereas if they did not do well, then they would switch the task. This is a very effective strategy in terms of maintaining positive moods, because success typically results in a positive mood state.

#### STUDY 2: A BASKETBALL STUDY

Study 1 revealed cultural invariance in actual performance and immediate affective reaction, yet showed cultural variation in how Asians and European Americans remembered the performance and also how they made a

subsequent behavioral choice. Asians' lack of reliance on past performance and affective experience, however, might be due to the nature of the task used in Study 1. There is the possibility that Asians are motivated to improve their academic performance, and therefore, Asian participants in Study 1 may have chosen the anagram task again, even when they did not do well the first time, to improve. If this alternative explanation is true, then the obtained results in Study 1 could be specific to an academic task. To address this issue, in Study 2, we employed a recreational task (i.e., a basketball task) that should not evoke an academic atmosphere. Another limitation of Study 1 was that participants in Study 1 did not actually perform the task of their choice at Time 2. Thus, Study 1 did not allow us to examine whether the choice at Time 2 was indeed more conducive to positive moods among European Americans than among Asians. To address this issue, participants in Study 2 chose either a basketball task or a darts task, actually performed the task of their own choice, and rated their enjoyment of the task at Time 2.

### Method

#### PARTICIPANTS

Participants were 64 European American students, 51 Asian students, and 2 students who did not report their race, all enrolled in an introductory psychology course at the University of Illinois. Out of the original 64 European Americans, 51 (20 men, 31 women) completed both Time 1 and Time 2 sessions (i.e., 79.7%). One European American participant recorded that he or she made all 10 baskets. However, experimenters reported that none of the participants made all baskets at Time 1. Thus, this participant's Time 1 data were not included in the following analyses. Out of the 51 original Asian participants, 37 participants (18 men, 19 women) completed both Time 1 and Time 2 sessions (i.e., 72.6%). However, one Asian participant did not provide the key information (i.e., the number of baskets she thought she had made at Time 1) and therefore was removed from the analyses of Time 2 data. The two participants who did not provide information on race returned to Time 2 sessions (i.e., the overall retention rate of 76.9%). There was no cultural difference in the proportion of the participants returned at Time 2,  $\chi^2 = 1.28$ , *ns*. There was also no difference between those who returned and those who did not in terms of the number of baskets made at Time 1 (2.39 vs. 2.23),  $t(108) = -.39$ , *ns*, or online enjoyment of the basketball task at Time 1 (4.14 vs. 3.91),  $t(107) = 1.71$ , *ns*. Out of the 36 Asian participants, 26 (72%) were born in the United States and 10 (28%) were born outside of the United States, 5 of which had lived in the United States less than 10 years. Out of the 36 Asians, 19 (52%) reported that English was their first language

and 17 (48%) reported that English was their second language. Nine of them reported Chinese as their first language, 4 reported Indian dialects (e.g., Hindi) as their first language, 3 reported Korean as their first language, and 1 reported Tagalog, Vietnamese, or Urdu as his or her first language.

#### MATERIALS AND PROCEDURE

The Time 1 session was run in groups of 2 to 4 persons. Participants were told that this experiment would consist of two parts: (a) a task performance and (b) a questionnaire on life satisfaction. They were told that the first task was a basketball task. A small basketball hoop was posted on the wall of the experimental laboratory at 6 ft. The free throw line was drawn at 9 ft away from the wall. The participants were told to shoot a basket 10 times total. After taking each shot, they recorded whether they made the basket and how they felt on a 7-point scale, ranging from 1 = *horrible* to 7 = *ecstatic*. Participants took turns shooting; thus, there was enough time for participants to make ratings about their feelings after each shot. Online enjoyment of the task was computed by taking the average of the 10 mood ratings. After the basketball task, they were led to an individual cubicle and completed a questionnaire regarding life satisfaction and emotional well-being.

Two weeks later, the participants came back to the same experimental laboratory. The experiment was again run in groups of 2 to 4 persons who participated in the same experimental session as Time 1. They were told that the experiment would consist of two parts: (a) a task performance and (b) a questionnaire on life satisfaction. They first rated how many baskets they thought they had made at Time 1. They then rated how much they enjoyed the basketball task at Time 1 on a 7-point scale (1 = *not at all* to 7 = *a lot*). They were then asked to make a choice between another basketball task and a dart task. After making a choice, they were asked to perform the task of their choice. A dartboard was posted on the opposite side of the wall from the basketball hoop. The participants threw darts a distance of 9 ft away from the board. Similar to Time 1, they were asked to shoot 10 times, to record whether they made it (or record the score in the case of the darts task) after each throw, and rate their mood on a 7-point scale (1 = *horrible* to 7 = *ecstatic*) after each throw. We computed Time 2 online enjoyment of the task by taking the average of the 10 mood ratings.

#### RESULTS AND DISCUSSION

As in Study 1, we first examined whether there were group differences in the degree to which task performance (i.e., the number of baskets made) was related to affective reaction to the task. The correlation between

task performance and affective reaction was  $.37, p < .01$ , among European Americans and  $.54, p < .01$ , among Asian Americans. In both groups, therefore, higher performance was related to a more positive affective reaction. These correlations did not differ from each other,  $z = .93, ns$ .

As in Study 1, we also examined gender differences. Male participants made more baskets than did female participants (3.26 vs. 1.74),  $t(86) = 4.50, p < .01, d = .98$ . However, online enjoyment of the basketball task did not differ (4.25 vs. 4.05),  $t(86) = 1.70, p = .09, d = .37$ . In addition, the correlation between the number of baskets made and online enjoyment was very similar between these two groups ( $r = .41, p = .01$  vs.  $r = .34, p = .02$ ),  $z = .36, ns$ . Furthermore, the correlation between remembered number of baskets made and Time 2 choice did not differ between these groups, as evidenced by a nonsignificant interaction in the logistical regression,  $Wald = .01, ns$ . Given these similarities, and lack of a priori predictions, we did not include gender in the following analyses.

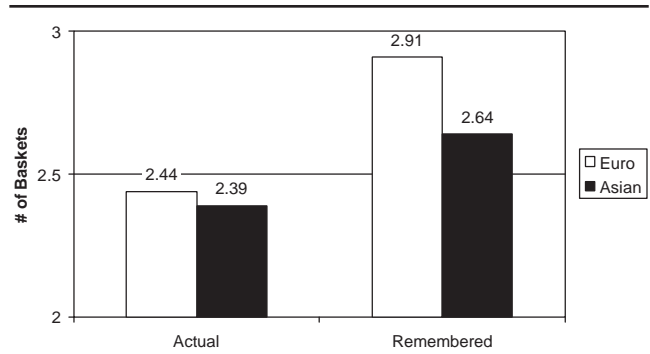
As in Study 1, we also examined the differences between Asians who were born in the United States and those who were born outside of the United States. As in Study 1, there were no differences between these two groups on any variable,  $t(34) < -1.53, ns, d < .59, Wald = .09, ns$ . Similarly, there were no differences between Asians whose first language was English and those whose first language was non-English,  $t(34) < 1.15, ns, d < .39, Wald = .29, ns$ .

#### *Hypothesis Testing: Performance and Memory for Performance*

The mean number of baskets made was 2.44 ( $SD = 1.88$ ) for European Americans and 2.39 ( $SD = 1.59$ ) for Asians,  $t(84) = .13, ns, d = .03$ . At Time 2, European Americans remembered having made 2.91 baskets ( $SD = 2.27$ ) and Asians remembered having made 2.64 baskets ( $SD = 2.00$ ),  $t(84) = .57, ns, d = .13$ . European Americans remembered having made significantly more baskets than they actually did,  $t(49) = 2.47, p = .02, d = .35$ . There was no difference between the actual number of baskets made at Time 1 and the estimated number of baskets at Time 2 among Asians,  $t(35) = 1.07, ns, d = .18$  (see Figure 2).

#### *Remembered Performance and Choice at Time 2*

Out of the 51 European Americans, 16 participants (31%) chose the basketball task again and 35 participants (69%) chose the darts task. Out of the 36 Asians, 11 participants (31%) chose the basketball task again and 25 participants (69%) chose the darts task at Time 2. There was no group difference in the tendency to choose one task over the other, Pearson's  $\chi^2(1) = .01, ns$ .



**Figure 2** The actual number of baskets made at Time 1 and the number of baskets participants remembered having made at Time 2 in Study 2.

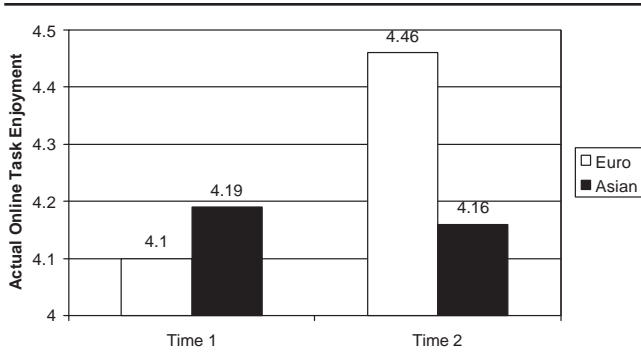
Next, we examined the degree to which Time 2 choice was predicted from the remembered number of baskets made and whether there were group differences in the degree of association, using logistical regression. Replicating Study 1, there was again a main effect of the remembered performance ( $B = -.82, SE = .36, Wald = 5.21, p < .05$ ). Also, replicating Study 1, this main effect was qualified by the Remembered Performance  $\times$  Group Membership interaction ( $B = .39, SE = .24, Wald = 2.73, p < .05$ ). In support of our hypothesis, European Americans who remembered having made more baskets were more likely to choose the basketball task again at Time 2, compared to those who remembered having made fewer ( $B = -.43, SE = .15, Wald = 7.54, p < .01$ ). By contrast, Asians' Time 2 choice was not predicted from the remembered number of baskets made ( $B = -.03, SE = .18, Wald = .03, ns$ ).

#### *Online Enjoyment of the Task at Time 1 and Memory for Enjoyment at Time 2*

Consistent with our hypothesis, there was no group difference in online enjoyment of the task at Time 1 ( $M = 4.10, SD = .58$  for European Americans and  $M = 4.19, SD = .50$  for Asians),  $t(84) = -.74, ns, d = -.16$ . However, 2 weeks later, European Americans remembered enjoying the task slightly more than Asians ( $M = 3.84, SD = 1.65$  vs.  $M = 3.31, SD = 1.64$ ),  $t(84) = 1.49, p = .14, d = .33$ . A repeated-measures ANOVA with actual versus recalled enjoyment as a within-subject and culture as a between-subject variable revealed a two-way interaction,  $F(1, 84) = 3.18, p < .05$ . Consistent with the findings on memory for performance, we found a group difference in the way European Americans and Asians remembered enjoyment of the task.

#### *Did Choice Lead to More Enjoyment?*

The final and most important question of Study 2 was whether individuals' choices led to a greater degree of



**Figure 3** Actual online task enjoyment at Time 1 (imposed task) versus at Time 2 (self-chosen task).

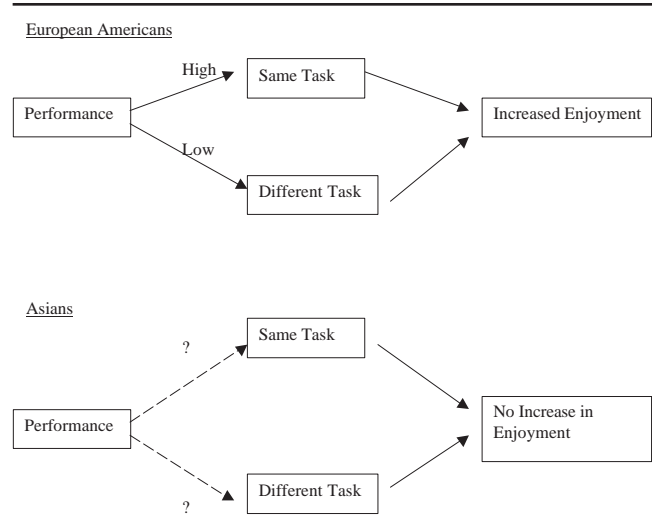
enjoyment of the task at Time 2 than at Time 1. Consistent with this hypothesis, when participants were able to choose the task that they wanted to perform, European Americans enjoyed the task ( $M = 4.46, SD = .67$ ) more than did Asians ( $M = 4.16, SD = .53$ ),  $t(84) = 2.22, p = .03, d = .49$ , although there was no group difference in enjoyment of the task when there was no choice at Time 1 (see Figure 3). Also, it is important to note that European Americans' online enjoyment of the task at Time 2 (4.46) was significantly higher than at Time 1 (4.10),  $t(49) = 3.54, p < .01, d = .51$ , whereas Asians' enjoyment of the task (4.16) at Time 2 did not differ from their enjoyment of the imposed task at Time 1 (4.19),  $t(35) = -.32, ns, d = -.05$ . A two-way ANOVA with Time 1 versus Time 2 enjoyment as a within-subject variable and group membership as a between-subject variable revealed a two-way interaction,  $F(1, 84) = 7.30, p < .01$ .

*Summary*

As can be seen in Figure 4, Study 2 examined the full cycle of action, evaluation, and decision. First, Study 2 replicated the findings from Study 1: (a) although there was no difference in actual performance between European Americans and Asian Americans, there were group differences in memory for performance, and (b) there were group differences in the degree to which Time 2 behavioral choice was predicted from memory for Time 1 performance. Most important, Study 2 indicated that European Americans chose the task based on how well they thought they did previously, and therefore, the task of their choice was more enjoyable than was the imposed task at Time 1 (see Figure 4). By contrast, Asians did not choose the task based on their previous performance, and therefore, they did not enjoy their chosen task at Time 2 any more than the task at Time 1.

GENERAL DISCUSSION

We started our investigation with a series of questions in mind: "How do people with different cultural back-



**Figure 4** Performance, behavioral choice, and its affective consequence.

grounds react to a given situation?" "How do they remember the experience?" "How do they make a subsequent behavioral decision?" and "How does the decision affect emotional experiences later?" Two studies were conducted to this end. In both an academic and a recreational task, we found that European Americans and Asians performed similarly. They also reacted affectively and cognitively in a very similar fashion. Nevertheless, replicating Oishi (2002), there were reliable cultural differences in how they remembered the experience. Extending Oishi (2002), there were also cultural differences in how they made a subsequent behavioral choice. European Americans' behavioral choice was in large part based on how well they thought they performed earlier, whereas Asians' choice was not based on how well they thought they did. Most important, Study 2 demonstrated that the behavioral choice led to more enjoyment of the task for European Americans, whereas the choice did not lead to more enjoyment for Asians. It is important to note that mood management (e.g., mood repair) is an important predictor of general well-being (e.g., Gohm, 2002; Heimpel, Wood, Marshall, & Brown, 2002). Thus, knowledge about how people from different cultures manage their moods will provide critical information concerning culture and well-being.

There are several important implications of the current findings for research on culture, well-being, and motivation. One of the most important implications of the current investigation is that the behavioral choices of European Americans and Asians have distinct consequences for well-being. Given a choice, European Americans chose a situation or a task that enhanced their enjoyment. By contrast, Asians did not choose a situation or a task that increased their enjoyment. Such patterns

of behavioral choice can be a driving force of the previously found cultural difference in the mean level of well-being (e.g., Diener et al., 1995). Particularly when daily lives are not constrained by obligatory meetings and classes, European Americans should experience positive emotions more frequently than Asians because they select situations and tasks in which they know they will feel good. When their daily lives are full of constraints, however, Asians should experience positive emotions equally frequently. In the future, it is important to examine (a) to what extent our daily lives are composed of self-chosen versus imposed situations and (b) how our choices result in affective experiences in our daily contexts. In addition, it is critical to examine short-term affective consequences versus long-term affective consequences of the choice, because some of the immediate enjoyment of the task might not translate into a deep sense of satisfaction in the long run (cf. Oishi, Schimmack, & Diener, 2001).

In a related vein, our findings provide additional evidence concerning cultural differences in motivation (e.g., Iyengar & Lepper, 1999). Consistent with previous research (e.g., Heine et al., 2001; Oishi & Diener, 2001), our findings demonstrate that immediate reward and short-term enjoyment are key motivating factors among European Americans. In contrast, immediate enjoyment does not guarantee the continuation of the task for Asians. As argued by Heine et al. (1999), these cultural differences might be due to differences in self-enhancing versus self-critical motivation. Furthermore, the differences in self-enhancing or self-critical motivation themselves might be due to the differences in the chronic accessibility of performance versus enjoyment goals. In addition, these differences might be due to the differences in focus on long-term versus short-term gains. If this is the case, then the best strategy to motivate Asians may be to show them a clear link between the activity at hand and its long-term consequences, whereas the best strategy for European Americans may be to show them a link between the activity at hand and its immediate impact. This is no doubt an oversimplification. Many other situational factors must matter. Nevertheless, it is important to keep in mind that our findings could have bearing on theories of motivation and practical issues of how to motivate people; therefore, these ideas should be tested in the future in the context of real-world situations.

Before closing, it is important to recognize the limitations and weaknesses of the present studies. One general weakness of the current studies was the small sample size. Findings with small samples are notorious for instability. Thus, the null findings concerning gender, birth, and language reported in this article also could be due to low statistical power. Without a doubt, our studies require

replications with a larger sample size. In addition, there are four specific weaknesses. First, there is the issue of task equivalence in our studies. Although the correlates of the task performance were similar between European American and Asian participants in our studies, there is the possibility that the basketball task used in Study 2 might have been more central to European Americans' self-concept than to Asians'. However, if the degree of centrality (e.g., how important it is to perform well in this task) was indeed related to the role of performance on choice, one might expect similar gender differences, such that performance in basketball would be more strongly related to the choice for men than women. As discussed earlier, that was not the case in Study 2. Thus, it is unclear whether our findings could be explained by cultural differences in the degree of self-relevance of these tasks, even if such differences existed. Nevertheless, it is of prime importance in the future to explicitly measure the meaning of tasks to participants and to ensure the equivalence of the task with more rigor than the current investigation.

Second, although the current findings revealed the processes involving affect, memory, and choice among European Americans, we were not able to identify the key factor that determines Asians' choice. One possibility is that Asians' choice is determined by some random factors (e.g., what others choose). Another possibility is that Asians do not trust their feelings as much as European Americans do in making decisions (e.g., Simmons, von Kolke, & Shimizu, 1986; Suh et al., 1998). Cultural beliefs about the role of affect might be a contributing factor to cultural difference in the use of affective experience in behavioral choices. To the extent that affective information is not trusted as a valid source of information, positive affective experience itself may not be as desirable an outcome among Asians. Future research should examine cultural beliefs about the function of affective experiences in the context of actions, evaluations, and decisions. Yet another possibility is that a subgroup of Asians made a decision in a very similar way to European Americans, whereas another subgroup of Asians made a decision in an opposite way to European Americans, and as a whole group, nothing predicted their choice. We tested two variables (born in the United States, English as the first language) in our studies. However, given the small sample size, statistical power was low. It is therefore important for future work to test whether cultural background variables and racial/ethnic identity are related to the basis of behavioral choices with a larger sample than the present studies.

Third, although both studies showed that the way in which European Americans and Asians remember their affective experiences differs, there were some discrepancies between two studies. In Study 1, Asian participants

underestimated their actual performance, whereas in Study 2, European American participants overestimated their actual performance. It is possible that a word task in Study 1 evoked self-improvement motives among Asian participants, whereas a recreational task in Study 2 evoked self-enhancement motives among European Americans. Alternatively, when the level of task performance is relatively low (e.g., Study 2), there will be a general tendency for overestimation, whereas when the level of task performance is relatively high (e.g., Study 1), there will be a general tendency for underestimation. Cultural characteristics accentuate these general tendencies. In any case, it is important in the future to determine the nature of memory bias in various tasks with different levels of difficulty.

Finally, the key finding from Study 2, that European Americans made a choice that increased their enjoyment of the task over time, could be explained by the power of personal choice (Iyengar & Lepper, 1999). It is possible that having a personal choice itself made European Americans enjoy the task at Time 2. To be certain that European Americans make a choice to maximize their enjoyment, we would need to have another experimental condition, in which participants are given a choice at Time 1 as well as at Time 2.

### Conclusion

In the previous research on culture and well-being (Diener, Oishi, & Lucas, 2003, for review), it was far from clear as to how people with different cultural backgrounds would react to a specific situation, how they remember the experience, how they make a decision, and how their decision in turn influences their affective experiences. The present studies were designed to address a critical limitation of the previous research by investigating the full cycle of actions, evaluations, and decisions. To our knowledge, this was the first comprehensive examination of the role of culture in three key processes related to well-being. Our studies revealed several important cultural sources of invariance and variance in affective reaction, memory, and behavioral choice. Our daily lives consist of a constant succession of actions, evaluations, and decisions. Future research should extend the current investigation from the laboratory to the real world. To this end, we believe that the present studies set the stage for a promising line of future research on culture, well-being, and motivation.

### NOTE

1. We treat these two racial groups as cultural groups for three reasons. First, as articulated by Markus and Kitayama (1991), despite specific ethnic differences, European Americans as a whole share the tradition of viewing the individual as an "independent self-contained, autonomous entity . . . who behaves primarily as a consequence of these internal attributes" (p. 226). Second, despite the ethnic and language

variations, Asian Americans as a group also share similar traditions (e.g., Confucianism, filial piety) and experiences as a minority in the United States, including prejudices and discriminations against "Asians" (Takaki, 1989). Finally, a recent meta-analysis found that European Americans were higher in individualism than were Asian Americans (Oyserman, Coon, & Kimmelmeier, 2002). Thus, each racial group fits the definition of a cultural group: It shares implicit and explicit beliefs, values, and norms transmitted by the members of a particular group (Triandis, 1995).

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