

## Cultural Variation in the Use of Current Life Satisfaction to Predict the Future

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Three studies examined cultural and situational influences on the tendency for people to use their current life satisfaction to predict future life events. On the basis of the self-enhancement literature, it was predicted that either writing about a positive personal experience or reading about another's negative experience would lead European Americans to focus their attention on internal attributes and thus would lead them to use their current life satisfaction in predicting the future. Conversely, on the basis of the self-criticism literature, it was predicted that these same conditions would lead Asian Americans to focus their attention on external factors and, therefore, would decrease their likelihood of using their current life satisfaction to predict the future. Studies 1 and 2 supported these hypotheses. Study 3 showed that these patterns could be obtained by subliminally priming concepts associated with individualism and collectivism.

People seem more likely to express optimism about their future life if their present life situation is satisfying than if it is not. Moreover, previous research supports this intuition (e.g., Chang, Maydeu-Olivares, & D'Zurilla, 1997; Lucas, Diener, & Suh, 1996; Marshall, Wortman, Kusulas, Hervig, & Vickers, 1992; Yoder & Nicholas, 1980). Nevertheless, the connection between people's current life satisfaction and their future outlook, as well as the factors that give rise to this connection, are not as clear as one might expect. For one thing, the causal relatedness of current life satisfaction and optimism about the future has not been established. It is possible, for example, that a direct connection between the two variables does not exist. That is, present life satisfaction and expectations for the future could be independently influenced by a third variable (e.g., a general disposition to evaluate experiences favorably or unfavorably) that has implications for both. Whether individuals actually use their current life satisfaction as a basis for predicting the future is not known.

In fact, people may use their current life satisfaction to predict the future only if (a) they perceive it to be a valid criterion, and (b) the criterion is salient to them at the time of judgment. These conditions do not always exist. In the first regard, people may base their expectations for the future on their current life situation only

if they consider this situation to be caused by personal characteristics that are likely to exist in the future as well. Individuals who believe that life experiences are influenced primarily by situational factors over which they have little control may consider their present life circumstances to be an unreliable indication of what the future holds for them, and thus they may base their predictions of the future on other criteria. However, even if people consider their present life satisfaction to be relevant, they may not use it to predict the future unless their attention happens to be focused on themselves rather than on external, situational factors.

These contingencies take on additional importance in light of evidence that people with different cultural backgrounds differ in their motivation to attribute favorable and unfavorable life experiences to dispositional or situational causes (e.g., Anderson, 1999; Chandler, Shama, Wolf, & Planchard, 1981; Fry & Ghosh, 1980; Kashima & Triandis, 1986; Menon, Morris, Chiu, & Hong, 1999; Morris & Peng, 1994; Smith, Whitehead, & Sussman, 1990; Yan & Gaier, 1994; for a review, see Choi, Nisbett, & Norenzayan, 1999; Kitayama, 1997; Markus & Kitayama, 1991). These differences may be the result of more fundamental dispositions to engage in self-enhancement and self-criticism (Heine, Lehman, Markus, & Kitayama, 1999; Kitayama, 1997; Markus & Kitayama, 1991). To this extent, cultural differences may also exist in the use of life satisfaction to predict the future, the nature of which depends on the particular types of life experiences that are salient at the time predictions are made. We elaborate on the nature of these contingencies in the following section.

### Theoretical Background

In some cases, people who are asked to estimate the likelihood that an event will happen to them might search their memory for past experiences that are similar to the one they are predicting and might base their estimate on the frequency and recency of these experiences. However, this strategy can be cognitively demanding, particularly when a number of different events must be evaluated within a short period of time. The strategy may therefore not be

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used if other reliable criteria are available and easy to apply (e.g., Tversky & Kahneman, 1973; see also Schwarz, 1998; Schwarz et al., 1991). The use of simplifying "heuristic" bases for judgments by people who are either unmotivated or unable to engage in more intensive cognitive processing has been detected in a variety of judgment domains (Bodenhausen & Lichtenstein, 1987; Chaiken, 1980; Petty & Cacioppo, 1986; Schwarz & Clore, 1988; for a review, see Higgins, 1996; Sherman & Corty, 1984; Wyer & Srull, 1989). It therefore seems likely that analogous processing strategies operate in the present domain as well. For example, people may assume that the overall quality of their life in the future will be similar to that of their life in the present and that specific events that occur are likely to reflect this similarity. To this extent, as people's current life satisfaction increases, their estimates of the likelihood that desirable future events will occur should increase, whereas their predictions that undesirable future events will occur should decrease.

### *The Role of Implicit Theories*

People's use of current life satisfaction to predict the future may reflect an implicit theory they have acquired about either themselves or the world in which they live (Ross, 1989; see also Chiu, Dweck, Tong, & Fu, 1997; Chiu, Hong, & Dweck, 1997; McDonald & Hirt, 1997). Chiu, Hong, and Dweck (1997), for example, found that people are more likely to predict other persons' future behavior from their past behavior if they believe that personality attributes are difficult to change than if they do not. However, the predictions they make in any given instance can depend on the implicit theory of personality that is salient to them at the time (Chiu, Hong, & Dweck, 1997, Experiment 5).

The evidence that situation-induced differences occur in the implicit theory that individuals apply (e.g., Chiu, Hong, & Dweck, 1997; McDonald & Hirt, 1997) is particularly important. Persons may acquire different theories as a result of their past experiences at different times and in different situations, and the implications of these theories may not always be consistent. For example, individuals might simultaneously hold the beliefs that (a) people are responsible for the events that occur to them and (b) life events are influenced by unforeseen circumstances over which one has little control. To this extent, the particular theory they bring to bear on the interpretation of a new experience may depend on the theory's accessibility in memory and, therefore, how quickly and easily it comes to mind (Higgins, 1996; Wyer & Srull, 1989). Its accessibility, in turn, may be a function of the frequency and recency with which it has been applied in the past (Higgins, Bargh, & Lombardi, 1985; Srull & Wyer, 1979; for summaries of support for this assumption, see Bargh, 1994, 1997; Higgins, 1996). To this extent, the particular theory that individuals apply may depend on transitory factors that dispose them to think of either persons (e.g., themselves) or situations as determinants of life events at the time their predictions of the future are made.

Once a person activates a particular theory as a result of having applied it to a certain set of events, it may provide the basis for inferences about other events. For example, persons are likely to apply current life satisfaction in predicting future life events if a person-focused theory (that life experiences are determined by personal characteristics that persist over time) is salient to them. They are less likely to do so, however, if a situation-focused theory

(that life experiences are influenced by unforeseen situational factors) is salient. However, the relative accessibility of these theories may be influenced by specific experiences the persons have recently thought about and attributed to one type of cause or the other. The particular theory that is activated may depend on the favorableness of these experiences, the person who experienced them (oneself or another person), and the culturally learned dispositions to apply one or another theory to these the experiences.

### *Culture, Self-Enhancement, and Attribution*

Cultural differences in the way individuals typically comprehend and explain their experiences are quite pronounced (Anderson, 1999; Choi et al., 1999; Markus & Kitayama, 1991; Menon et al., 1999; Morris & Peng, 1994; Triandis, 1995). These differences may be traced in part to the different emphases placed on self-enhancement and self-criticism in the cultures involved. Markus and Kitayama (1991; Heine et al., 1999; Kitayama, 1997) note that representatives of individualistic cultures (e.g., European Americans) exhibit strong self-enhancement motivation. This motivation is evident in part from these individuals' tendency to attribute positive life experiences to themselves but to attribute negative life experiences to transitory situational factors for which they are not responsible (e.g., Anderson, 1999; Cadinu, Arcuri, & Kodilja, 1993; Harvey & Weary, 1984; D. T. Miller, 1976; Zuckerman, 1979).

In contrast, the reactions to life events by persons with collectivist cultural backgrounds (e.g., Asians) are likely to be governed by culturally learned dispositions to engage in self-effacement and self-criticism (Heine et al., 1999; Kitayama, 1997; Kitayama, Markus, Matsumoto, & Norasakkunkit, 1997). These persons are more likely than members of individualist cultures (e.g., North Americans) to attribute their own failure to internal factors, such as lack of ability (e.g., Anderson, 1999; Chandler et al., 1981; Fry & Ghosh, 1980; Shikanai, 1978; Yamauchi, 1988).<sup>1</sup> Moreover, they are inclined to view negative feedback about themselves as more valid than positive feedback (e.g., Takata, 1987).

These cultural differences have implications for the effects of activating concepts about different types of experiences on the use of current life satisfaction to predict the future. Persons with an individualistic cultural background (i.e., those with self-enhancement motives) should take more personal responsibility for positive personal experiences than for negative ones. Therefore, they should be more inclined to activate a person-focused theory of life events and, consequently, to use their current life

<sup>1</sup> Although both success and failure are often attributed to effort among Asians (e.g., Fry & Ghosh, 1980; Hess, Chih-Mei, & McDevitt, 1987; see also Anderson, 1999, and Yan & Gaier, 1994, for evidence that Americans are equally or more likely to attribute both success and failure to effort), this attribution pattern takes on a self-critical flavor for Asians. That is, attributing their own success to effort indicates that they consider their success to be situation specific (i.e., the future success still depends on one's effort among others), whereas attributing their failure to effort reflects a belief that they are fully responsible for it. To North Americans, however, attributing success to effort reflects a belief that they generally work hard, whereas attributing their failure to effort implies that they could have done a better job if they had tried. Therefore, the meaning of the effort attributions may vary over cultures, depending on the valence of the outcome involved.

satisfaction as a basis for predicting the future, if a positive experience they have had is called to their attention than if a negative experience is made salient. On the other hand, persons with a collectivist cultural orientation (i.e., those who are disposed toward self-criticism) should be more inclined to activate a person-focused theory of life events and, therefore, more likely to use current life satisfaction to predict the future, if their attention is called to a negative experience they have had than if it is called to a positive one.

In considering these possibilities, it is important to make a clear distinction between the role of self-enhancement and self-criticism at the cultural level and at the individual level. Self-enhancement and self-criticism motives have been used to describe cultural differences and group tendencies (see Heine et al., 1999; Markus & Kitayama, 1991), as evidenced by the "better-than-average effect" (e.g., 80% of college students think they are in the top 50% in leadership in the United States). Thus, self-enhancing European Americans might, on average, predict their futures to be more rosy than might self-critical Asian Americans. However, a self-enhancement motive itself does not allow us to predict the degree of individual difference in future predictions among European Americans. In other words, the fact that European Americans tend to be driven by a self-enhancement motive as a group does not allow us to predict how satisfied European Americans will perceive their futures compared with unsatisfied European Americans. Similarly, the fact that Asian Americans tend to be self-critical as a group does not provide any indication of how one Asian will predict his or her future compared with other Asians. To the extent that self-enhancement and self-criticism are culture-level variables, our predictions involving these constructs are limited to culture levels: cultural group difference on future predictions and group differences in the eliciting condition for the use of current life satisfaction.

### *The Present Studies*

We conducted three experiments. In the first two studies, Asian American and European American students were asked to think about either positive or negative life experiences that had happened to either themselves (in Experiment 1) or someone else (in Experiment 2). They then estimated the likelihood that a number of different positive and negative events would occur to them in the future. We assumed that the participants' thoughts about their own or another's past experiences would activate implicit theories about the causality and predictability of life events in general and, therefore, would influence their tendency to use their present life satisfaction as a basis for predicting the future. We further expected that the nature of these theories and, therefore, the use of this criterion, would depend on the favorableness of the past experiences that participants thought about, the person who had these experiences (themselves or someone else), and the participants' cultural background. Finally, in Experiment 3 we validated the assumptions underlying the interpretation of the first two studies by experimentally manipulating the explanations that participants were likely to give for the particular types of events that were salient to them at the time of judgment. In combination, the results of these experiments identify both transitory and chronic cultural factors that contribute to the use of current life satisfaction to predict the future.

## Experiment 1

In the first experiment we investigated the effects of thinking about personal life experiences on the use of current life satisfaction to predict the future. European American and Asian American participants first evaluated their current life satisfaction. They then wrote about either a positive or a negative life event they had personally experienced. Finally, they estimated the likelihood that a number of specific events might happen to them. We hypothesized that European Americans' estimates of the likelihood of future life events would be more strongly correlated with their current life satisfaction when they had recently thought about a positive experience than when they had recently thought about a negative one, whereas Asian American participants' estimates would be less strongly correlated.

Two aspects of our predictions should be noted. First, cultural differences in self-enhancement and self-criticism motives have generally been inferred on the basis of data from actual residents of collectivist cultures (Chinese, Japanese, etc.) who had never lived in individualistic cultures. In contrast, the Asian Americans used in the present research were college students who had lived in America for several years. We nevertheless expected that their cultural and family background would have a sufficiently strong influence on their motivational orientation to produce reactions to life events of the sort we hypothesized (see Iyengar & Lepper, 1999; Kim & Markus, 1999; Singelis, 1994). To this extent, our use of an Asian American sample provided a conservative test of the hypotheses being investigated.

Second, our use of current life satisfaction as an indicator of the future assumes that it serves as a piece of self-knowledge that is stored in memory and can be drawn upon and used as a basis for judgments to which it is relevant. Although it can sometimes be influenced by transitory situational factors such as mood (cf. Schwarz & Clore, 1983; Strack, Schwarz, & Gschneidinger, 1985), life satisfaction appears more generally to be a relatively stable attribute that functions in much the same way as other characteristics of personality (Diener, 1996; Pavot & Diener, 1993). Nevertheless, to avoid any possibility that life satisfaction might be influenced by concepts that were activated by our experimental manipulations, we assessed it at the beginning of each experimental session. This procedure further ensured that life satisfaction was equally salient to all participants at the time their predictions of the future were made. Consequently, any differences in the use of this criterion as a basis for predicting the future were likely to be due to differences in perceptions of its relevance rather than its salience at the time of judgment.

In this regard, in Experiment 1 we provided general evidence concerning the causal relation between current life satisfaction and optimism about the future. If this relation is due entirely to the independent effects of a third variable (e.g., a general disposition to evaluate life events favorably regardless of type), the correlation between current life satisfaction and predictions of the future should not depend on the type of experience that participants have thought about before making these predictions. Thus, evidence that the magnitude of this correlation is contingent on the nature of these events provides further evidence that the relation is causal.

## Method

### Participants

Seventy-two introductory psychology students participated in the experiment for course credit. Of these, 16 men and 22 women were European American, and 13 men and 21 women were Asian American (one Asian American did not indicate his or her gender). Participants in each group were nearly identical in age (European Americans,  $M = 18.46$  years,  $SD = 1.02$ ; Asian Americans,  $M = 18.36$  years,  $SD = 1.06$ ). All but 3 Asian Americans had lived in the United States for at least 10 years.

### Procedure

We told participants that they would take part in two unrelated experiments. In the first, which was conducted in a large lecture room, participants completed the Satisfaction With Life Scale (SWLS) designed by Diener, Emmons, Larsen, and Griffin (1985). This scale consists of five items, such as "In most ways my life is close to my ideal," "The conditions of my life are excellent," and "I am satisfied with my life." Participants responded to each of the five statements on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Responses to the five items were summed to provide a single index of life satisfaction for each participant. This index was quite reliable for both participant groups (Cronbach's  $\alpha = .90$  and  $.87$  for European Americans and Asian Americans, respectively) and ranged from 5 to 35. The mean SWLS was 25.45 ( $SD = 6.92$ ) for European Americans and 21.26 ( $SD = 7.09$ ) for Asian Americans,  $t(71) = 2.55$ ,  $p < .05$ . Responses to this measure are typically stable over time (Pavot & Diener, 1993) and are strongly correlated with personality traits such as extroversion (see Diener, 1996, for a review). It therefore seems reasonable to assume that the SWLS assesses a stable perception of one's current quality of life.

*Recall of life experiences.* After completing the SWLS, along with other filler scales (e.g., extroversion, goals, and values), participants were told to go to another room located about 50 ft (15.24 m) from the lecture hall, where another experimenter was waiting, to participate in the second unrelated experiment. When they arrived, the experimenter ushered them into individual cubicles and gave each participant a questionnaire packet containing (a) a "life event inventory" and (b) the Future Outlook Scale. Participants were randomly assigned to write about either a positive life event or a negative one. In the first case, they were instructed to think about an event that made them feel "really proud, happy, and/or joyful" during the past few months and to describe the event as vividly and in as much detail as possible for 10 min. In the second case, they were told to recall and write about an event that made them feel "really sad, depressed, and/or lonely."

*Future Outlook Scale.* Finally, participants were asked to rate the likelihood that each of 10 positive and 10 negative events would happen to them in the near future on a scale ranging from 1 (*extremely unlikely, or almost 0%*) to 7 (*extremely likely, or almost 100%*). The positive life events, which were relatively common in a college environment, included "getting the best grade on a paper or exam," "having a wonderful romantic relationship," "finding out there are people who secretly admire you," "discovering your own talent that you did not know," "receiving an unexpected gift," "experiencing true excitement," "receiving a sweet letter or phone call from your old friends," "meeting a person who will become a life-long friend," "seeing a movie better than any other movie you have seen," and "finding out your upcoming assignment or paper's due date will be extended." The negative life events, which were adopted from Gasper and Clore (1998), included "You will feel dissatisfaction with your life," "You will be dissatisfied with your professor or TA over a grade," "You will feel less than adequate," "You will fail to achieve many of your future goals," "You will have a disagreement with a good friend," "You will get a poorer grade than expected on an upcoming paper or assignment," "Your friends will talk about you behind your back," "You will do something you

regret," "You will say something uninformed and idiotic to the people around you," and "You will have to work at a job you do not enjoy."

The reliability of scales composed of each type of event separately was high (in each case,  $\alpha > .80$ ) and was similar for both European Americans and Asian Americans. We therefore computed a single index of future outlook by subtracting the mean rating of negative life events from that of positive life events. Therefore, more positive numbers indicate a greater tendency to predict positive life events as more likely than negative ones, or the favorableness of the future outlook.

## Results and Discussion

The favorableness of participants' future outlook was correlated ( $r = .62$ ,  $p < .01$ ) with their current life satisfaction. As expected, however, the magnitude of this correlation varied as a function of participants' cultural background and the type of life event they had written about. Specifically, the correlation was more positive among European Americans when they had written about a positive personal experience ( $r = .77$ ,  $p < .01$ ) than when they had written about a negative one ( $r = .55$ ,  $p < .05$ ). On the other hand, the correlation was more positive among Asian Americans when they had written about a negative personal experience ( $r = .74$ ,  $p < .01$ ) than when they had written about a positive one ( $r = .59$ ,  $p < .05$ ).

These conclusions were confirmed by a multiple regression analysis involving all four participant groups. To do this, we coded the life events that participants wrote about as either 1 (positive) or -1 (negative) and the cultural groups as either 1 (European American) or -1 (Asian American). Finally, following Aiken and West (1991), we standardized current life satisfaction around the grand mean ( $M = 23.44$ ,  $SD = 7.27$ ).<sup>2</sup> Participants' predictions of the future were then analyzed as a function of these three variables as well as the interactions among them.

Consistent with our hypothesis, there was a significant three-way interaction of life satisfaction, cultural background, and valence,  $\beta = .21$ ,  $t(62) = 2.27$ ,  $p < .05$ .<sup>3</sup> One can see the nature of this interaction by generating estimated values of future outlook from the linear regression equation derived from the analysis.

<sup>2</sup> An alternative procedure might be to standardize life satisfaction scores within each cultural group. We performed the same regression analyses using the group mean standardization procedure and found the almost identical standardized regression coefficients and  $t$  values for all coefficients as the grand mean standardization procedure. Specifically, in Study 1 the three-way interaction was  $\beta = .20$ ,  $t(62) = 2.23$ ,  $p < .05$ , in the group mean standardization, as opposed to  $\beta = .21$ ,  $t(62) = 2.27$ ,  $p < .05$ , in the grand mean standardization. In Study 2, the three-way interaction was  $\beta = -.23$ ,  $t(94) = 2.56$ ,  $p = .012$ , in the group mean standardization, as opposed to  $\beta = -.23$ ,  $t(94) = 2.59$ ,  $p < .01$ , in the grand mean standardization. In Study 3, the three-way interaction was  $\beta = -.21$ ,  $t(60) = -1.89$ ,  $p = .062$ , in the group mean standardization, as opposed to  $\beta = -.20$ ,  $t(60) = 1.86$ ,  $p = .067$ , in the grand mean standardization. Thus, the two standardization procedures did not make any difference in the results, and therefore we reported the coefficients using Aiken and West's (1991) grand mean standardization procedure.

<sup>3</sup> The separate regression analyses for positive and negative life events yielded comparable results from the analysis reported in the text. Specifically, the standardized regression coefficient for the three-way interaction was  $.16$ ,  $t(62) = 1.40$ ,  $ns$ , for positive events, whereas it was  $-.13$ ,  $t(62) = 1.19$ ,  $ns$ , for negative events. For brevity and interpretability of the results, we present only the results from the composite scores in the text.

These values are shown in Table 1 for each combination of independent variables, with 1 and -1 denoting high and low life satisfaction (i.e., one standard deviation above and below the mean), respectively, as well as values of other variables (see note to Table 1). The effect of life satisfaction can be inferred from the difference between future outlook when life satisfaction was high and future outlook when life satisfaction was low ( $M_d$ ). As predicted, this difference, shown in the last column of Table 1, was greater when European Americans wrote about a positive life experience or Asian Americans wrote about a negative one (averaged over these two conditions,  $M_d = 2.52$ ) than it was in the opposite two conditions ( $M_d = 1.32$ ). In summary, the results of Experiment 1 provide support for our hypothesis that European Americans are more likely to use their current life satisfaction to predict the future when they have recently thought about personal success, whereas Asian Americans are more likely to do so when they have recently thought about a personal failure.

## Experiment 2

The results of Experiment 1 were consistent with our hypothesis that calling participants' attention to positive and negative personal experiences would activate different theories about the causes of life events and that these theories would mediate their use of current life satisfaction to predict the future. However, certain ambiguities arise in the interpretation of these results. For one thing, it is unclear whether the implicit theories that participants activate as a result of thinking about their personal experiences are applied only to themselves or to persons in general. For example, cultural differences in the implicit theories that are activated by positive and negative experiences might be independent of whether the persons involved in these experiences are themselves or someone else. If this is so, calling participants' attention to other

persons' experiences should have effects similar to those identified in Experiment 1.

The conceptualization we propose, however, suggests the opposite. The self-enhancement tendency that pervades individualistic cultures may motivate representatives of these cultures to maintain a perception of themselves as better than others. Therefore, they may be motivated not only to assign situational causes to others' successes but also to assign dispositional causes to others' failures. Evidence consistent with this tendency was reported by Snyder, Stephan, and Rosenfield (1976). If this is so, European Americans should be less inclined to activate a person-based theory of life events, and therefore to use current life satisfaction to predict the future, after reading about others' positive life experiences than after reading about others' misfortunes.

This difference may not generalize to Asian Americans. If these individuals are typically self-effacing, they may be disposed to enhance others in relation to themselves. Therefore, they may be inclined to assign dispositional causes to others' successes but situational causes to others' negative experiences (Yamauchi, 1988). Evidence that a self-effacing motive is linked to sympathy for others and to a tendency to emphasize situational causes of others' predicaments (Kitayama & Uchida, 1999, cited in Heine et al., 1999) is consistent with this assumption. To this extent, exposure to other persons' outcomes may have the opposite effect on Asian Americans that it has on European Americans. That is, reading about others' successes may lead Asian Americans to think about dispositional causes and, therefore, to activate a person-based theory of life events, whereas reading about others' negative experiences will lead Asian Americans to think about situational causes and, therefore, to activate a situation-based theory. Therefore, Asian Americans should be more inclined to use current life satisfaction to predict the future in the former case than in the latter.

## Method

### Participants

Participants were 102 introductory psychology students who took part in the experiment to fulfill a course requirement. Of these, 28 men and 25 women were Asian American, and 24 males and 25 females were European American. Participants in each cultural group were similar in age ( $M = 19.0$  years and 18.9 years for Asian Americans and European Americans, respectively). Thirty-three of the 53 Asian Americans (62%) were either born in the United States or had lived in the United States for more than 16 years.

### Procedure

Participants first completed the SWLS (Cronbach's  $\alpha = .82$  and  $.77$  for European Americans and Asian Americans, respectively). The mean SWLS was 23.08 ( $SD = 6.20$ ) for European Americans, whereas it was 21.62 ( $SD = 6.10$ ) for Asian Americans,  $t(100) = 1.19$ , *ns*. Then, rather than writing about a personal experience of their own (as in Experiment 1), participants were asked to read a short story about others. The story, ostensibly taken from *The Washington Post*, described the job prospects for the current year's college graduates. The positive story implied that students were finding jobs easily, whereas the negative story implied the opposite. After reading the story, participants rated its content along three positive adjectives (i.e., *cheerful*, *joyful*, and *exciting*) and three negative adjectives (i.e., *depressing*, *fearful*, and *worrying*) ranging from 1

Table 1  
Regression-Based Estimates of Future Outlook as a Function of Current Life Satisfaction, Cultural Background, and Positive Versus Negative Personal Experiences: Experiment 1

Culture	Level of current life satisfaction		Difference
	High	Low	
Asian Americans			
Own positive experience	0.80	-0.32	1.12
Own negative experience	1.54	-1.10	2.64
European Americans			
Own positive experience	0.36	-2.04	2.40
Own negative experience	1.26	-0.26	1.52

Note. Obtained regression equation was as follows: Future outlook =  $.03 - .20C - .33*V + .96**S - .08SV - .34**CV + .02CS + .30*CVS$ , where C = cultural background (1 = European American, -1 = Asian American); V = valence of the recalled personal experience (1 = positive, -1 = negative); S = standardized Satisfaction With Life Scale (1 = 1 SD above the grand mean, -1 = 1 SD below the grand mean); SV = two-way interaction between S and V; CV = two-way interaction between C and V; CS = two-way interaction between C and S; and CVS = three-way interaction among C, V, and S.

\*  $p < .05$ . \*\*  $p < .01$ .

(*not at all*) to 7 (*extremely*). The internal consistency of the positive content scale was .94, whereas that of the negative content scale was .93.

In addition, the measure of future outlook was modified in two ways. First, it consisted of only 5 positive and 5 negative events rather than 10 events of each type. The positive events were a subset of those used in Experiment 1. However, because some of the negative items used in Experiment 1 referred to life satisfaction rather than to events per se, they were replaced by items adapted from Heine and Lehman (1995). Some specific examples are, "You will get lung cancer" and "You will come to hate your chosen career." Finally, the rating scale that we used was modified in a manner similar to that used by Heine and Lehman. Specifically, we asked participants to judge the extent to which each hypothetical event was more or less likely to happen to them than to other students at their university and to report this estimate on a scale ranging from 1 (*much less likely*) to 7 (*much more likely*). The change in the response format, however, decreased the internal consistency of the scale compared with Experiment 1. That is, the Cronbach's alpha of the five positive life events and the five negative events was .54 and .68, respectively. These reliabilities were similar for both European Americans and Asian Americans.

As in Experiment 1, an overall index of future outlook was obtained by subtracting the mean rating of negative events from the mean rating of positive ones, so that higher scores reflect a more favorable future outlook. These scores ranged from -2.0 to 3.2 ( $M = 0.96$ ,  $SD = 1.3$ ).

### Results and Discussion

Participants' perceptions of the story they read were successfully manipulated. The positively valenced story was rated as both more positive than the negatively valenced story (3.74 vs. 1.43) and less negative (2.26 vs. 4.26); in each case,  $F(1, 98) > 72.69$ ,  $p < .01$ . These differences did not depend on participants' cultural background ( $F < 1$ ).

We expected that European Americans would be more likely to use their present life satisfaction to predict the future when the story they read referred to others' negative experiences than when it referred to others' positive experiences, whereas Asian Americans would be less likely to do so in the former case than in the latter. Results were generally consistent with this hypothesis. The favorableness of participants' future outlook was correlated positively with their life satisfaction ( $r = .40$ ,  $p < .01$ ). However, the magnitude of this correlation was greater among European Americans who had read a negative story about others ( $r = .80$ ,  $p < .01$ ) than among those who had read a positive story about others ( $r = .12$ , *ns*). Among Asian Americans, however, the correlation did not depend on the story they read (in each case,  $r = .37$ ,  $p < .05$ ).

The cultural difference in the pattern of correlations between current life satisfaction and the future outlook was tested by a multiple regression analysis involving all four participant groups. In this analysis, we coded the valence of the story that participants had read as either -1 (negative) or 1 (positive) and the cultural group as either -1 (Asian American) or 1 (European American), and we standardized current life satisfaction around the grand mean ( $M = 22.32$ ,  $SD = 6.16$ ). We predicted participants' future outlook from three variables and the interactions among them. As in Experiment 1, current life satisfaction was positively associated with future outlook,  $\beta = .42$ ,  $t(94) = 4.73$ ,  $p < .01$ . This analysis also yielded the hypothesized three-way interaction of cultural background, story valence, and current life satisfaction,  $\beta = -.23$ ,  $t(94) = -2.59$ ,  $p < .01$ .<sup>4</sup> The nature of this interaction is seen most clearly in Table 2, in which we report estimates of future outlook based on the obtained linear equation (see note to Table 2

Table 2  
Regression-Based Estimates of Future Outlook as a Function of Current Life Satisfaction, Cultural Background, and Valence of the Story About Others: Experiment 2

Culture	Level of current life satisfaction		Difference
	High	Low	
Asian Americans			
Others' positive experience	1.74	0.56	1.18
Others' negative experience	0.98	0.24	0.74
European Americans			
Others' positive experience	1.44	1.18	0.26
Others' negative experience	1.84	-0.38	2.22

Note. Obtained regression equation was as follows: Future outlook =  $.95^{**} + .07C + .28^{**}V + .55^{**}S - .19SV + .01CV + .07CS - .30^{**}CVS$ , where C = cultural background (1 = European American, -1 = Asian American); V = valence of the story (1 = positive, -1 = negative); S = standardized Satisfaction With Life Scale (1 = 1 SD above the grand mean, -1 = 1 SD below the grand mean); SV = two-way interaction between S and V; CV = two-way interaction between C and V; CS = two-way interaction between C and S; and CVS = three-way interaction among C, V, and S.  
\*\*  $p < .01$ .

for details). The effects of life satisfaction, as reflected in the difference between future outlook of high and low life satisfaction participants, were greater among European Americans who had read a negative story about others and among Asian Americans who had read a positive story about others (averaged over these two conditions,  $M_d = 1.70$ ) than they were among European Americans who had read a positive story about others and among Asian Americans who had read a negative story about others ( $M_d = 0.50$ ).

In short, the results of Experiment 2 confirmed our hypothesis that European Americans use their current life satisfaction to predict the future when they read a negative story about others, whereas Asian Americans do so when they read a positive story about others.

### Experiment 3

The results of Experiments 1 and 2 are quite consistent with our speculation that chronic cultural differences exist in people's reactions to their own and others' life experiences and in the factors to which they attribute these experiences. These different reactions and attributions may result in part from differences in the relative emphasis placed on self-enhancement and self-criticism (Heine et al., 1999; Kitayama, 1997). These motives may dispose European Americans and Asian Americans to activate different implicit theories about the causes of life events. As we pointed out previ-

<sup>4</sup> The separate regression analyses for positive and negative life events yielded comparable results from the analysis reported in the text. That is, the standardized regression coefficient for the three-way interaction was  $-.22$ ,  $t(94) = 2.31$ ,  $p < .05$ , for positive events, whereas it was  $.11$ ,  $t(94) = 1.18$ , *ns*, for negative events. Again, for brevity and interpretability of the results, we present only the results from the composite scores in the text.

ously in this article, however, the alternative implicit theories that underlie these assumptions are likely to coexist in memory. That is, the cultural differences we have identified may only reflect differences in the relative accessibility of the theories that persons with different cultural backgrounds bring to bear on the interpretation and explanation of their social experiences (e.g., Brewer & Gardner, 1996; Gardner & Gabriel, 1999; Pelham & Hetts, 1999; Suh, 1998; Trafimow, Silverman, Fan, & Law, 1997; Trafimow, Triandis, & Goto, 1991; Ybarra & Trafimow, 1998). If this is so, however, the disposition to make different attributions for one's own and another's life experiences might be altered by experimentally manipulating the accessibility of concepts that give rise to their use. The use of current life satisfaction to predict the future might therefore be influenced correspondingly.

We examined this possibility in Experiment 3. Specifically, we expected that unobtrusively activating concepts associated with individualism or collectivism would dispose participants to adopt a self-enhancing or self-critical motivational orientation and also that this orientation would dispose them to make attributions for positive and negative outcomes of a sort that would give rise to the differential use of current life satisfaction.

Specifically, after completing the SWLS, participants performed a "perceptual identification task" similar to that used by Bargh, Chen, and Burrows (1996, Experiment 3) in which concepts associated with either an individualistic orientation ("mine," "complete," "individual," etc.) or a collectivist orientations ("share," "cooperate," "group," etc.) were subliminally presented. These concepts were based on the definitions of individualism and collectivism proposed by Triandis (1995). At the same time, several of the individualist concepts seemed likely to induce a self-enhancement motive, whereas several of the collectivist concepts seemed likely to increase a self-effacing tendency.

After being exposed to the priming stimuli, some participants made causal attributions for positive behaviors that another person had performed, whereas others made attributions for negative behaviors the person had performed. We assumed that priming concepts associated with individualism would activate a self-enhancement motive and, therefore, would increase the tendency to attribute the other's unfavorable life experiences to dispositional factors. On the other hand, activating concepts associated with collectivism should increase the tendency to attribute another's positive experiences to these factors. Consequently, the effects of current life satisfaction on predictions of the future should be more evident when individualism is primed and participants consider another's failures or when collectivism is primed and participants consider another's successes than under other conditions.

## Method

### Participants

A total of 34 male and 40 female introductory psychology students participated to fulfill a course requirement. Of these, 40 participants identified themselves as European American, 23 as Asian American, 4 as African American, and 4 as Hispanic American (three participants did not identify their ethnicity). Participants' ages ranged from 18 to 25, with the mean age of 18.8. There were four experimental conditions: 2 (priming condition)  $\times$  2 (valence of the target's behaviors). Between 9 and 11 and between 4 and 8 Asian Americans participated in each condition.

### Procedure

**Priming task.** Participants were told that they would be taking part in a number of unrelated experiments. In the first study, which was ostensibly concerned with life satisfaction, they completed the SWLS (Cronbach's  $\alpha = .90$  for European Americans, .87 for Asian Americans, and .89 for the entire sample), along with other filler scales (e.g., emotions). The mean SWLS was 25.68 ( $SD = 5.01$ ) for European Americans and 25.78 ( $SD = 5.67$ ) for Asian Americans,  $t(61) = .08$ , *ns*.

The next study was ostensibly concerned with perceptual accuracy and was administered on a computer. The task consisted of a series of 48 trials. On each trial, participants were told to concentrate on a fixation point and then, when a number of circles appeared on the screen, to indicate whether this number was greater or less than 7 by clicking a mouse. Immediately before each stimulus appeared, however, a priming word was presented for 35 ms, followed by a 75-ms mask. Priming words were based on (a) Triandis's (1995) definition of individualism as the view of the self as an independent entity, the importance of personal goals over group goals, and the focus on personal attitudes, needs, and rights, and (b) Triandis's definition of collectivism as the view of the self as an interdependent entity, the importance of group goals over personal goals, and the focus on norms, obligations, and duties. Thus, the words used to prime individualism were *own, mine, compete, I, me, individual, distinct, and free*. In contrast, the words used to prime collectivism were *share, ours, cooperate, us, we, group, same, and team*.

**Attribution task.** Following the priming task, participants were told that we were interested in the way people explain social events. On this pretense, they were asked to consider each of the four behaviors that had been performed by "a University of Illinois student you don't know" and to indicate the degree to which the event described occurred because of situational factors (someone else being nice or nasty, luck, etc.) or dispositional factors (e.g., personality and ability). In the positive behavior condition, the target was described as having fun, getting an A in a psychology class, getting a job at a large insurance company, and having a date with one of the most popular persons in class. In the negative behavior condition, the target was described as forgetting to do something, getting a C in a psychology class, not getting the job he or she wanted, and being turned down for a date by someone who was "not even that popular." Participants read each description and then reported their judgments on a 9-point scale ranging from 1 (*definitely situational*) to 9 (*definitely dispositional*). Responses to the four items were averaged to provide a single score in which high values indicate strong attributions to dispositional factors (Cronbach's  $\alpha = .50$ ).

**Future outlook.** After performing the attribution task, participants were asked to consider the 10 positive life events used in Experiment 1 and to estimate the likelihood the events would happen to them on a 7-point scale ranging from 1 (*extremely unlikely*) to 7 (*extremely likely*). Cronbach's alpha was .63.

Upon completion of the experiment, participants were asked whether they had seen anything on the computer screen between trials of the perceptual identification task. None indicated that they had.

## Results and Discussion

### Attributions

We assumed that priming collectivist concepts as opposed to individualistic ones would increase participants' tendency to attribute others' positive experiences to dispositional factors but would decrease their tendency to attribute negative experiences to these factors. This assumption was confirmed. Although participants were generally more inclined to attribute the target's experiences to dispositional factors if they were positive ( $M = 6.19$ ) than if they were negative ( $M = 5.58$ ), this difference was greater

when collectivism-relevant concepts had been primed (6.22 vs. 5.08) than when individualistic concepts had been primed (6.16 vs. 6.10), as evidenced by a marginally significant two-way interaction between the priming condition and the valence of the target's behaviors,  $F(1, 64) = 3.59, p < .06$ . That is, priming collectivism substantially decreased the tendency to attribute negative events that had happened to others to dispositional factors.

To examine whether the effect of priming on attributions depended on participants' cultural background, we analyzed data from European American and Asian American participants alone as a function of priming condition, the valence of the target behaviors, and cultural background. The interaction of priming conditions and the valence of the target behavior remained marginally significant,  $F(1, 50) = 3.34, p < .10$ . However, no main or interactive effects involving cultural background were reliable ( $p > .10$ ). The nonsignificant effects in this analysis might be due in part to the small number of Asian Americans in the sample. However, the results nevertheless suggest that situationally induced priming of collectivist versus individualist orientations minimized the effects of more chronic, culturally based differences in attribution style that might otherwise exist.

### Future Outlook

The correlation between current life satisfaction and future outlook was positive ( $r = .38, p < .01$ ). Consistent with our hypothesis, under individualism priming conditions, this correlation was greater when participants had evaluated negative behaviors of the target ( $r = .64, p < .01$ ) than when they had evaluated positive ones ( $r = .07, ns$ ), whereas under collectivism priming conditions, it was less in the former case ( $r = .38, ns$ ) than in the latter ( $r = .50, p < .05$ ).

We evaluated this pattern of correlations statistically using a multiple regression analysis in which we coded the valence of the target behaviors as either 1 (positive) or -1 (negative) and the priming conditions as either 1 (individualism) or -1 (collectivism). As in previous experiments, we standardized current life satisfaction around the grand mean ( $M = 24.97, SD = 5.41$ ). Support for our hypothesis was reflected in a three-way interaction of priming, the valence of the target behaviors, and life satisfaction. This interaction only approached significance,  $\beta = -.20, t(60) = 1.86, p < .10$ , but was clearly of the form expected. Table 3 shows estimates of future outlook at each level of these variables (see note to Table 3 for an elaboration). The effect of life satisfaction, shown in the rightmost column of Table 3, was greater in individualism-priming conditions when the target's behaviors were negative and in collectivism-priming conditions when the target's behaviors were positive (averaged across these two conditions,  $M_d = 0.94$ ) than in the other two conditions ( $M_d = 0.30$ ). In sum, experimentally manipulating accessibility of individualism- or collectivism-related concepts (thereby manipulating the salience of self-enhancement or self-criticism motive), we replicated the pattern of the relation between current life satisfaction and the future outlook found in Experiment 2.

As noted earlier, the effects of situationally induced differences in collectivistic and individualistic orientations overrode the effects of more chronic attributional biases that might otherwise exist as a result of participants' cultural background. Supplementary regression analyses of participants' predictions of the future

Table 3

*Regression-Based Estimates of Future Outlook as a Function of Current Life Satisfaction, Cultural Priming, and Valence of Target's Behaviors: Experiment 3*

Priming	Level of current life satisfaction		Difference
	High	Low	
Collectivism			
Others' positive behaviors	3.93	3.11	0.82
Others' negative behaviors	3.95	3.45	0.50
Individualism			
Others' positive behaviors	4.21	4.11	0.10
Others' negative behaviors	4.27	3.21	1.06

*Note.* Obtained regression equation was as follows: Future outlook =  $3.76^{**} + .17P + .06V + .31^{**}S - .08SV + .15PV - .02PS - .16PVS$ , where P = priming condition (1 = individualism, -1 = collectivism); V = valence of the target's behaviors (1 = positive, -1 = negative); S = standardized Satisfaction With Life Scale (1 = 1 SD above the grand mean, -1 = 1 SD below the grand mean); SV = two-way interaction between S and V; PV = two-way interaction between P and V; PS = two-way interaction between P and S; and PVS = three-way interaction among P, V, and S.

$^{**} p < .01$ .

confirmed this conclusion. This analysis, which was restricted to European American and Asian American participants, was analogous to the main analysis described earlier substituting cultural background for the priming manipulation (European Americans and Asian Americans were coded 1 and -1, respectively, as in other experiments). (Low sample sizes precluded an analysis involving both of these variables.)

This analysis yielded no significant effects involving cultural background. Estimates of future outlook, computed on the basis of the regression equation emerging from this analysis, indicated that the effect of life satisfaction on predictions of the future was virtually the same among European Americans who had considered another's negative experiences and Asian Americans who had considered another's positive experiences (averaged over these conditions,  $M = 4.04$  vs.  $3.26$ , when participants were high vs. low in life satisfaction, respectively), as it was in the remaining two conditions ( $4.22$  vs.  $3.40$ , respectively). Therefore, this analysis reinforces the conclusion that transitory, situationally induced differences in individualistic versus collectivistic orientation overrode any more general differences that might otherwise exist as a result of participants' cultural backgrounds. Most important, Experiment 3 demonstrated that the experimental manipulation of self-enhancement or self-criticism led people to use current life satisfaction in a manner similar to that which European Americans and Asian Americans in Experiment 2 used.

### General Discussion

The present research confirmed the hypothesis that persons often use their current life satisfaction as a basis for predicting the future. In doing so, it extends upon previous research (e.g., Chang et al., 1997; Marshall et al., 1992) in providing a more precise understanding of the conditions in which this occurs. The tendency to use current life satisfaction as a basis for predicting the future is

influenced by chronic cultural differences in individualism and collectivism that influence the relative emphasis placed on dispositional and situational causes of life experiences. However, this emphasis is determined not only by cultural factors but also by factors that make these different explanations of life events more or less accessible.

In conceptualizing these effects, we assumed that the use of present life satisfaction to predict the future is based on an implicit theory that people are responsible for life events that befall them and that personal characteristics that influence one's present life situation are likely to exist in the future as well. Consequently, a consideration of the theory that life events are governed by unforeseen situational factors should decrease the use of this criterion. On the basis of evidence that persons with individualistic and collectivistic cultural backgrounds differ in the relative emphasis they place on self-enhancement and self-criticism (Heine et al., 1999; Kitayama, 1997; Kitayama et al., 1997) and the assumption that these motives dispose individuals to attach different causes to both their own (e.g., Anderson, 1999; Fry & Ghosh, 1980) and others' outcomes (e.g., Snyder et al., 1976; Yamauchi, 1988), we hypothesized that cultural differences would exist in the use of current life satisfaction in future outlook.

Specifically, we assumed that European Americans, who are primarily motivated by self-enhancement concerns, would be particularly likely to activate a person-focused theory of life events and therefore to use current life satisfaction to predict the future, if they have recently thought about either a positive life experience they have had or another's failure. In contrast, we expected that Asian Americans, who are more disposed to engage in self-effacement, would be more likely to activate a person-focused theory of life events, and therefore to use current life satisfaction to predict the future, if their attention is called to either a personal misfortune or others' success.

Experiments 1 and 2 supported this hypothesis under conditions in which the judgment processes of European Americans and Asian Americans were directly compared. European Americans were more inclined to use their current life satisfaction to predict the future if they had recently thought about a positive personal experience than if they had thought about a negative one, but were more inclined to use this criterion if they had thought about other persons' failure than if they had thought about others' success. In contrast, Asian Americans were less inclined to use their life satisfaction to predict the future in these cases. Experiment 3 validated the assumptions underlying the hypothesis by directly priming concepts associated with collectivism and individualism. Thus, the three studies, using divergent methods and experimental stimuli, provided converging support for our predictions. In doing so, they highlight the dynamic nature of persons' judgments about the future and the importance of taking both transitory and chronic differences in persons' attribution style into account in conceptualizing the factors that influence these judgments.

#### *Alternative Interpretations*

Two ambiguities in interpreting our findings arise from the fact that participants in all conditions reported their general life satisfaction at the outset of the experimental session. This procedure ensured that this criterion was equally salient to participants in all conditions. At the same time, this procedure might have induced a

tendency to use the criterion as a basis for future predictions that might otherwise not exist. Such an artifact could not account for differences in the use of this criterion over experimental conditions. However, it suggests that caution should be taken in generalizing our results to situations in which participants have not recently considered their overall life satisfaction at the time they predict the future. In these conditions, persons may often extrapolate from the implications of a small subset of specific experiences that are salient to them at the time rather than invoking a previously formed concept of their life satisfaction in general. It is interesting to speculate that the factors that underlie the use of general life satisfaction to predict the future might govern the use of specific experiences as well.

A second possibility to consider is that calling persons' attention to their general life satisfaction elicited positive or negative affect and that this affect influenced their optimism about the future (for evidence that predictions of the future are in fact influenced by the affect that persons happen to be experiencing at the time, see Johnson & Tversky, 1983). This could produce an effect of current life satisfaction on predictions of life events that is independent of the processes of concern in this article. On the other hand, it could also influence the responsibility that participants took for the life experiences that were made salient to them later. For example, people who experienced positive affect as a result of reporting their general life satisfaction might be more inclined to accept responsibility for positive life experiences, whereas those who experienced negative affect might be more inclined to accept responsibility for negative ones. Because European Americans and Asian Americans chronically differed in life satisfaction in Experiment 1, their different reactions to the positive experiences they recalled in Experiment 1 might be the result of the affect generated by the life satisfaction judgment rather than differences in the emphasis they place on self-enhancement or self-criticism. However, European American and Asian American participants did not differ in the life satisfaction they reported in Experiment 2. In addition, their level of satisfaction was above the scale midpoint (i.e., 20) in both experiments. Therefore, cultural difference in the affect elicited by the life satisfaction judgment seems unlikely to have contributed substantially to the results we reported. Nevertheless, the mediating role of affect in the phenomena we investigated is a worthwhile avenue for future research.

#### *Culture as the Source of Chronically Accessible Constructs*

In most previous cross-cultural work on attribution (e.g., Anderson, 1999; Chandler et al., 1981; Smith et al., 1990; Yamauchi, 1988; Yan & Gaier, 1994), participants made explicit attributions of the target behaviors (see Lee, Hallahan, & Herzog, 1996; Morris & Peng, 1994, for exceptions). The self-critical attributions observed in these earlier studies, however, could be interpreted as simply a tendency for Asians to engage in impression management. That is, these individuals might attribute their own success to external factors to appear modest, and might attribute others' failure to situational factors to be nice. In Experiments 1 and 2, however, participants did not have to report why the event occurred or who was responsible for it. Therefore, the demand for impression management was minimal. Consistent with previous findings (Lee et al., 1996; Morris & Peng, 1994), therefore, our

findings both suggest that impression management is not sufficient to account for cultural variation in attribution and provide indirect support for the idea that self-critical attributions among Asians occur spontaneously.

Many researchers have sought to identify cross-cultural differences in attribution style (e.g., Chandler et al., 1981; Fry & Ghosh, 1980; Smith et al., 1990; Yan & Gaier, 1994). The documentation of these cultural differences is an indispensable step in understanding attribution processes more generally. The mere identification of these differences, however, does not in itself provide insight into fundamental questions as to why cultural differences in attribution exist (but for recent theories about antecedents of cultural differences in attribution, see Choi et al., 1999; Heine et al., 1999; Menon et al., 1999; Morris & Peng, 1994; Nisbett, 1998).

Following Suh (1998) and Trafimow (Trafimow et al., 1991, 1997), we conceptualized persons' cultural background as a determinant of the concepts and knowledge that are likely to be chronically accessible in memory. This assumption allowed us to test causal links between culture and attribution using priming procedures to induce situation-specific, transitory differences in the accessibility of these constructs. In other words, the conceptualization of culture as the sources of accessible constructs provides an opportunity to dissect elements that are most likely to be the driving forces of cultural differences under study. This is not to say that the content of accessible constructs fully reflects culture. As anthropologists and cultural psychologists have persuasively shown, symbols, labels, laws, and institutions are all integral parts of culture (e.g., Bruner, 1990; Cohen, 1998; Cole, 1996; Lillard, 1997; Markus, Kitayama, & Heiman, 1996; J. G. Miller, 1999; Shweder & Sullivan, 1990; Su et al., 1999). Because of the complexity of culture, however, cultural differences in attribution found in previous studies were often intertwined with differences in economy, language, values, norms, and genetics (Triandis, 1995). Thus, a clearer understanding of the role of culture requires the isolation of factors that are responsible for observed cultural differences. The operationalization of culture in terms of construct accessibility provides a powerful research tool for this purpose. Similar priming strategies (e.g., Brewer & Gardner, 1996; Gardner & Gabriel, 1999; Hong, Chiu, Morris, & Mennon, 1997, cited in Su et al., 1999; Pelham & Hetts, 1999; Suh, 1998; Trafimow et al., 1991) might be useful in exploring the cognitive bases of other cross-cultural differences in judgments and behavior.

As Experiment 3 suggests, however, cultural differences in individualism versus collectivism may be overridden by situational factors that make concepts associated with one or the other orientation temporarily accessible in memory. This conclusion is consistent with results reported by Trafimow et al. (1991), who also found evidence of situationally induced differences in these orientations. As research by Higgins, Bargh, and Lombardi (1985) suggests, situationally induced differences in construct accessibility are transitory. Over time, the effects of recently activated concepts typically give way to concepts that have become chronically accessible as a result of the frequency with which they have been activated and applied in the past. The indication that the effects of culturally based differences in orientation can be eliminated or even reversed by recent experiences to which representatives of these cultures are exposed is noteworthy in this regard.

However, some caution should be taken in overgeneralizing this conclusion. The collectivist participants in the present studies were

Asian Americans who had typically been exposed to individualistic cultural values for several years. As we noted earlier, the use of this sample provides a conservative test of the hypothesized cultural differences. At the same time, it seems likely that experimental manipulations of construct accessibility of the sort performed in Experiment 3 are less likely to have a major impact on individuals who have not been frequently exposed to individualist cultural values and thus may not have these constructs in memory at all.

Certain assumptions underlying the interpretation of our results are, of course, worth evaluating more directly. For example, if European Americans and Asian Americans activate different implicit theories of life events as a result of making different experiences salient, this should be noted in differences in the perceptions of stability of life experiences in general. Moreover, response time procedures might be useful in verifying cultural differences in the accessibility of alternative theories of life events under these conditions. Although an evaluation of these and other implications of the proposed theory was beyond the scope of the present research, it is a worthwhile direction for future research to take.

### Summary

Although recent studies have explored the antecedents of cultural differences in attribution (e.g., Choi et al., 1999; Kitayama, 1997; Morris & Peng, 1994), research on the consequences of cultural differences in attribution has been noticeably missing from the extant literature. Similarly, in previous research on life satisfaction and optimism (e.g., Chang et al., 1997; Lucas et al., 1996; Marshall et al., 1992) sufficient attention has not been paid to the possibility that the degree to which the current level of life satisfaction is predictive of future life events might vary systematically, depending on the valence of the salient life event at the time of judgments and culturally learned motives. To address these issues, in the present research we examined the moderating roles of culture and implicit theories in the judgments about the future and identified specific contingencies involving current life satisfaction and predictions of the future. Furthermore, consistent with the cultural psychological perspective (Bruner, 1990; Cole, 1996; Kitayama, 1997; Markus, Kitayama, & Heiman, 1996; J. G. Miller, 1999), we found that culture has a considerable impact on the interpretation of social events and the eliciting conditions of implicit theories. More generally, the present results underscore the need to specify the interrelations among culture, knowledge accessibility, attribution, and implicit theories about life in general in understanding the judgments about oneself and one's present and future experiences. Further exploration of these interrelations is obviously warranted.

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