

## CULTURAL VARIATION IN THE IMPORTANCE OF EXPECTED ENJOYMENT FOR DECISION MAKING

Carl F. Falk, Elizabeth W. Dunn, and Ara Norenzayan  
*University of British Columbia*

In Euro-Canadian culture, individuals often base decisions on what they think will make them happy, such that *affective forecasts* play an important role in driving decisions. In contrast, East Asian cultures warn against excessive hedonism, suggesting that expected positive emotions may have less influence on decision making among East Asians. Consistent with this hypothesis, those with an East Asian cultural background in Study 1 were less likely than Euro-Canadians to choose an enjoyable activity over a useful one. Study 2 showed that East Asians, versus Euro-Canadians, place less weight on expected enjoyment when making hypothetical choices. In Study 3, biculturals placed less weight on expected enjoyment when primed with interdependent versus independent self-construals. We argue that expected enjoyment plays a significant role in decision making across cultures, but that this role may be attenuated for individuals from East Asian cultures due to their interdependent sense of self.

Imagine that Susan, a Euro-Canadian student, and Shizuka, a Japanese student, are both selecting university courses to fulfill a breadth requirement. In making their decisions, both students may consider their affective forecasts about how much they would enjoy the available courses; because people are typically motivated to select options that will make them happy, affective forecasts are often important in decision-making processes (e.g., Mellers, 2000). However, an obsession with feeling good may be a fundamentally Western cultural phenomenon (e.g., Heine, Lehman, Markus, & Kitayama, 1999). Is it likely, then, that Shizuka would place less weight on expected enjoyment than Susan in deciding between courses? This question is not easy to answer because most affective forecasting research, like most social psychological research, has been conducted with Western participants (Heine & Norenzayan, 2006; Quiñones-Vidal, López-García, Peñaranda-Ortega, &

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Tortosa-Gil, 2004) and many psychological phenomena do not generalize to non-Western samples (Henrich, Heine, & Norenzayan, 2010). Therefore, in the present research, we investigate whether culture shapes the extent to which individuals rely on their affective forecasts in making decisions.

## AFFECTIVE FORECASTING AND DECISION MAKING

Affective forecasting research is concerned with the way individuals predict their future feelings, often in relation to the outcome of some expected future event (for recent reviews, see Dunn & Laham, 2006; Wilson & Gilbert, 2003). Experiments in this domain often examine discrepancies between affective forecasts and actual emotions (e.g., Dunn & Ashton-James, 2008; Dunn, Wilson, & Gilbert, 2003; Schkade & Kahneman, 1998). The explosion of recent research in this area stems in part from the growing recognition that expected emotions play a critical role in decision making (Loewenstein & Lerner, 2003). Indeed, Loewenstein and Lerner (2003) argue that even traditional theories of decision making can be construed as giving great weight to expected emotions. Recent empirical work by Mellers and colleagues (Mellers, 2000; Mellers & McGraw, 2001; Mellers, Schwartz, Ho, & Ritov, 1997; Mellers, Schwartz, & Ritov, 1999) suggests that adding expected pleasure to a decision-making model can greatly enhance predictive utility across both hypothetical and actual decision-making situations.

## CULTURE AND THE PURSUIT OF POSITIVE AFFECT

The extent to which individuals rely on affective forecasts in making decisions may depend on their cultural experiences. In particular, the centrality of expected enjoyment for decision making may be related to individualism and collectivism, which are culture-level constructs that describe two major kinds of social patterns (Triandis, 1995). In individualistic cultures, such as mainstream United States and Canada, individuals tend to place importance on the pursuit of personal goals, viewing themselves as distinct from social groups (Triandis, 1989, 1995). They tend to have an independent self-construal—defining themselves in terms of personal traits or attributes (Kitayama & Markus, 1999; Markus & Kitayama, 1991). Such individuals are often concerned about feeling good about themselves and are motivated to maintain self-esteem (Heine et al., 1999). Members of individualistic nations report being happier, and focus more on their positive attributes, events, and emotions relative to East Asians (e.g., Diener, Diener, & Diener, 1995; Heine et al., 2001; Kitayama, Markus, & Kurokawa, 2000).

In contrast, individuals from collectivistic cultures, such as East Asian countries, tend to place more importance on membership in tightly knit social groups (e.g., families), in-group goals and norms, and duty toward one's in-group. Individuals from these cultures tend to have an interdependent self-construal—defining themselves in terms of social relationships and incorporating close others into this definition (Markus & Kitayama, 1991). There is a tendency to be concerned about meeting expectations and obligations to others—perhaps requiring individuals to eschew potentially enjoyable activities. That is, such individuals cannot focus on maximizing their own positive affect because they need to meet their obligations

toward others and maintain social harmony (Uchida, Norasakkunkit, & Kitayama, 2004). Among East Asians, social harmony and perceptions of life satisfaction as a social norm are better predictors of actual life satisfaction than are self-esteem and emotional experience (Kwan, Bond, & Singelis, 1997; Suh, Diener, Oishi, & Triandis, 1998).

Furthermore, recent evidence suggests that those with an interdependent self-construal have a habitual tendency to consider others' needs and perspectives, whereas those with independent self-construals are less likely to show this tendency. This tendency can become internalized and then activated in a variety of situations. For instance, compared to Westerners, East Asians are often self-critical (Heine & Hamamura, 2007)—a tendency that likely arises when evaluating themselves from an objective other's point of view. East Asians are still highly self-critical even when extreme measures are taken to ensure complete anonymity (Heine et al., 1999), and this tendency toward high objective self-awareness is unaffected by the presence of a mirror (Heine, Takemoto, Moskalenko, Lasaleta, & Henrich, 2008), suggesting that East Asians exhibit objective self-awareness across a wide range of situations. East Asians also find it easier to take the perspective of others, presumably due to more practice and a habitual tendency to do so, whereas Westerners have a relatively difficult time taking others' perspectives (Cohen & Hoshino-Browne, 2005; Cohen, Hoshino-Browne, & Leung, 2007; Wu & Keysar, 2007).

It is the difference in the tendency to view oneself as interdependent versus independent that we expect to underlie cultural differences in the use of expected enjoyment as a guide in decision making. That is, individuals with independent self-construals should feel free to pursue personal enjoyment. In contrast, individuals with interdependent self-construals may habitually consider the needs and goals of others, and feel less free to focus on their own expected enjoyment. Consistent with this perspective, the valence of associations with positive affect differs between cultures that emphasize an interdependent versus independent self-construal. For example, Heine (1996) found that Euro-Canadians rated happiness as 2nd most ideal among a list of 20 traits, whereas Japanese participants rated happiness as 18th. More recently, Uchida and Kitayama (2009) found that Japanese participants gave more undesirable descriptions of happiness than Euro-Americans and categorized more descriptions of happiness as negatively valenced in a way that suggested certain aspects of happiness made participants worry about disruption of social relationships.

Some descriptions of Japanese culture even make the explicit argument that the pursuit of happiness is immoral (Benedict, 1946). As noted by the Japanese scholar Shozo Ogiya, enjoyment may carry a similar connotation:

In our daily lives the word *enjoy* has a special position. With its meaning of "finding pleasure in" or perhaps of "being merry about" this word—at least to those of my generation—has nuances that smack of the immoral. . . . (as quoted in Plath, 1964, p. 68)

Thus, individuals from Japanese culture may sometimes even try to avoid certain kinds of positive affect. Heine et al. (1999) suggests that these attitudes toward happiness and its definition generalize to other Asian cultures (e.g., Diener, Suh, Smith, & Shao, 1995).

Finally, preliminary evidence is consistent with the perspective that East Asians are less concerned with expected enjoyment. Specifically, Fong and Wyer (2003) investigated the effect of risk perceptions, importance of outcome, and other individuals' decisions on hypothetical risk taking among Euro-American and Chinese participants. Although not the main focus of their study, expected emotions were measured and included as mediators in their larger model. In one of two studies, the effect size linking expected positive affect to risk taking appeared to be smaller for Chinese than for Euro-Americans. However, the difference of these effect sizes was not tested and was not directly linked to any underlying cultural dimension.

## THE PRESENT STUDIES

In the present research, we examined cultural differences in the extent to which individuals choose options they expect to enjoy. We first tested whether East Asians were less likely than Euro-Canadians to choose an enjoyable (vs. useful) activity (Study 1). After establishing this overall behavioral difference, we examined whether East Asians placed less weight on forecasted enjoyment than Euro-Canadians in making decisions (Study 2). Finally, to test the causal influence of self-construal on the use of expected enjoyment in decision making, we primed interdependent and independent self-construal using an experimental design (Study 3).

## STUDY 1

As an initial, behavioral test of whether differences exist in the amount of weight placed on expected enjoyment, we asked participants to choose between completing an enjoyable activity versus an academically useful activity. We hypothesized that Euro-Canadians would be more likely than East Asians to choose the enjoyable activity.

## METHOD

### Participants

In exchange for a candy bar, 34 Euro-Canadians (53% female; mean age = 22.53, *SD* = 4.32) and 57 East Asians (72% female; mean age = 21.19, *SD* = 3.13) participated. Categorization of these two cultural groups was based on four criteria: Ethnicity, country of birth, mother's country of birth, and father's country of birth. If any participant had an ambiguous or missing value for any variable, categorization was determined by the remaining three variables. Euro-Canadians were ethnically white, born in Canada/USA and had parents born in a Western or European country. East Asian participants were all ethnically East or Southeast Asian. Initially we created two categories for East Asian participants—those born in an Asian country with parents also born in an Asian country, and those born in Canada/USA with parents born in either an Asian country or Canada/USA. Since these two groups did not differ on the main dependent variables for Studies 1 and 2 ( $ps = .79$  and

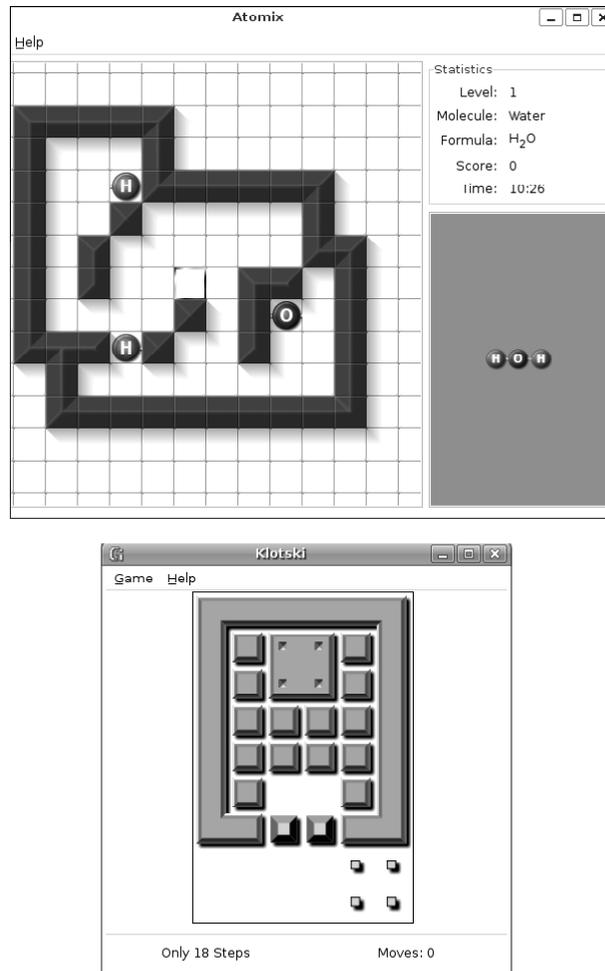


FIGURE 1. Atomix and Klotski—Stimuli used for Study 1.\*

.49), all such individuals were treated as a single cultural group we refer to as “East Asians” for all three studies in this article.

In order to obtain a broad sample of the campus community, rather than oversampling psychology majors, research assistants approached participants in public areas on the University of British Columbia (UBC) campus frequented by a variety of students (e.g., student union and a social area of a main library). Research assistants were blind to all hypotheses and were not informed that the study was about cultural variation, but were instructed to collect data mainly from those who appeared to be Caucasian or East Asian.

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\*The screenshot of Atomix is from a version by Jens Finke and Guilherme de S. Pastore that was inspired by the Commodore Amiga version by Softouch Productions and published by Thalion Software in 1990. The screenshot of Klotski is from a version by Lars Rydlinge; many different versions of Klotski exist. At the time the study was conducted, both games were available for the GNOME desktop platform for Linux at <http://www.gnome.org>

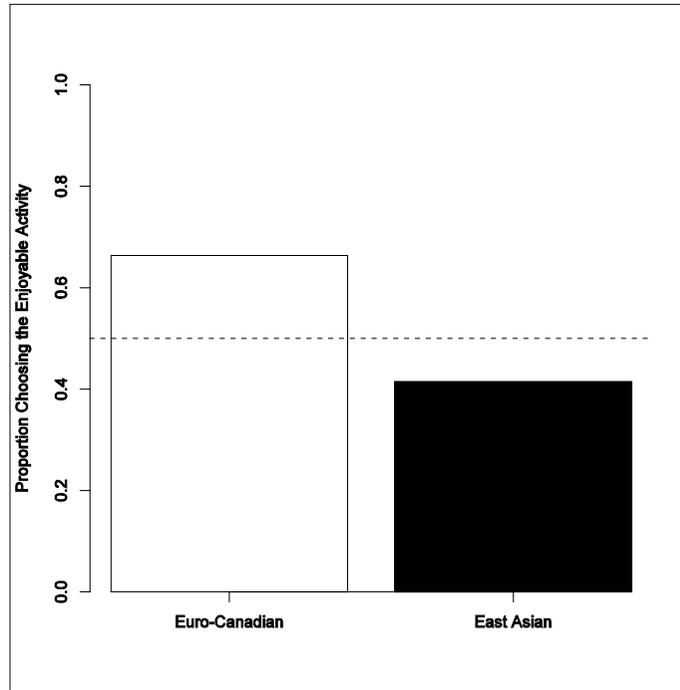


FIGURE 2. Proportion choosing enjoyable activity within each cultural group in Study 1. Predicted values determined via logistic regression. The dotted line indicates a proportion of .5.

### Design, Procedure, and Materials

After completing a questionnaire that assessed demographics (e.g., gender) and cultural status (e.g., parents' birthplace), participants were presented with a choice between two activities. They were shown two screen shots of puzzle-like computer games (Klotski and Atomix; see Figure 1\*) that were selected to appear equally interesting. The experimenter described the "enjoyable" activity as follows: "A lot of people find this one to be really fun and lively, but not helpful for their mind or improving their studying ability." In contrast, the "useful" activity was described as follows: "This kind of activity can improve your thinking skills and boost your grades, but in our previous studies not many participants enjoyed it." Experimenters then asked participants to choose an activity. We counterbalanced the order of presentation of the activities and pairings of each frame (enjoyable vs. useful) with each game (Klotski vs. Atomix).

### RESULTS

We entered cultural background (dummy coded with Euro-Canadians as the reference group) into a logistic regression predicting the choice between the useful (coded 0) and enjoyable activity (coded 1). Since the Euro-Canadian sample was slightly older,  $t(89) = 1.70$ ,  $p = .09$ , and had slightly fewer females,  $\chi^2(1) = 3.37$ ,  $p = .07$ , age and gender were added as covariates to rule them out as potential con-

founding variables. As predicted, Euro-Canadians chose the activity framed as enjoyable (versus the activity framed as useful) significantly more than the East Asians,  $b = -1.02$ , Wald's  $\chi^2(1) = 4.64$ ,  $p = .03$ , odds ratio = .36 (see Figure 2).

## DISCUSSION

Study 1 provides initial evidence of a behavioral difference between cultures regarding a real decision about an imminent activity. Consistent with our predictions, we found that Euro-Canadians were more likely than East Asians to choose an enjoyable activity over a useful activity. This forced-choice paradigm, however, was not designed to directly test how expected enjoyment shapes decision making, providing the impetus for Study 2.

## STUDY 2

In Study 2, we explored whether East Asians place less weight on expected enjoyment when making decisions than do Euro-Canadians. To this end, we presented students with a set of course descriptions and asked them to decide how likely they would be to take each course, and predict how enjoyable and useful each course would be. We conceptualized usefulness broadly, as referring to any practical future benefits that students might get out of a course, such as a reference letter or improved job prospects; we expected usefulness to account for substantial variance in choices, but did not have strong theoretical predictions regarding cultural differences in the weight students would place on it. Our primary hypothesis was that East Asians would place less weight on predicted enjoyment than Euro-Canadians when making choices.

## METHOD

### Participants

Using the same recruitment strategy and categorization criteria as in Study 1, we obtained a sample of 43 Euro-Canadian (51% females; mean age = 21.49,  $SD = 2.67$ ) and 63 East Asian participants (61% females; mean age = 19.91,  $SD = 1.55$ ).<sup>1</sup>

### Design

We used a repeated-measures design in which participants rated eight courses on dimensions of predicted enjoyment, usefulness, and likelihood of taking each course. This design allowed us to assess how much weight individuals in each cultural group placed on expected enjoyment and usefulness in deciding how likely they would be to take the courses.

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1. Two additional East Asians were excluded because of missing values on level 2 predictors.

TABLE 1. HLM Fixed Effects for Study 2: Likelihood of Taking Course as Dependent Variable

Fixed Effect	Coefficient	se	df	t Ratio
Likelihood Mean				
Intercept, $\beta_{00}$	3.76	0.08	104	45.09***
Culture, $\beta_{00}$	-0.05	0.13	104	-0.41
Age, $\beta_{02}$	0.01	0.02	104	0.53
Enjoyment Slope				
Intercept, $\beta_{10}$	0.64	0.04	104	15.28***
Culture, $\beta_{11}$	-0.16	0.06	104	-2.44*
Age, $\beta_{12}$	-0.04	0.02	104	-2.48*
Usefulness Slope				
Intercept, $\beta_{20}$	0.38	0.05	104	8.16***
Culture, $\beta_{21}$	0.03	0.07	104	0.45
Age, $\beta_{22}$	0.03	0.02	104	1.68 <sup>†</sup>

Note. <sup>†</sup> $p \leq .10$ . \* $p \leq .05$ . \*\* $p \leq .01$ . \*\*\* $p \leq .001$ .

### Procedure and Materials

*Course Descriptions.* Participants completed a consent form and demographics form as in Study 1. Participants then were asked to read descriptions—based on student evaluations—of courses that could be used to fulfill a breadth requirement; the need to obtain accurate data regarding students' opinions about these courses was emphasized. To ensure variability in participants' responses, we constructed the course descriptions to vary along three dimensions: Enjoyability (high versus low), usefulness (high versus low), and subject domain (humanities versus science/math); all analyses, however, were based on participants' own ratings of the enjoyability and usefulness of the courses, rather than our categorization of these courses. Aside from the title, each course description was devoid of any specific description of actual course content (see Appendix).

*Course Ratings.* After reading all the course descriptions, participants rated how likely they would be to take each of the courses the following term—assuming they were required to take at least some of the courses—on a scale ranging from *Extremely Unlikely* (1) to *Extremely Likely* (7). Next, on scales from *Not at all* (1) to *Extremely* (7), participants predicted how enjoyable and useful each course would be overall; the order of enjoyment versus usefulness ratings was counterbalanced.

## RESULTS

### Analytic Strategy

This study was designed to allow the use of Hierarchical Linear Modeling (HLM; Raudenbush & Bryk, 2002) and models were estimated using HLM 6 (Raudenbush, Bryk, & Congdon, 2004). Individuals served as level 2 clusters with likelihood of taking each course, predicted enjoyment, and predicted usefulness as level 1 measures. The regression equation at level 1 predicted likelihood of taking each

course from ratings of enjoyment and usefulness simultaneously (all level 1 predictors were grand mean centered). At level 2, the level 1 intercept and slopes were modeled as random effects and were predicted by a culture dummy code with Euro-Canadians serving as the reference group (Euro-Canadian = 0, East Asians = 1). Age (centered) was added as a level 2 predictor since Euro-Canadians were slightly older than the East Asians,  $t(105) = 3.88, p < .001$ . The full mixed-model equation appears below and the results appear in Table 1:

$$\begin{aligned} \text{Likelihood} = & (\beta_{00} + \beta_{01}(\text{Culture}) + \beta_{02}(\text{Age}) + r_0) + \\ & (\beta_{10} + \beta_{11}(\text{Culture}) + \beta_{12}(\text{Age}) + r_1)(\text{Enjoyment}) + \\ & (\beta_{20} + \beta_{21}(\text{Culture}) + \beta_{22}(\text{Age}) + r_2)(\text{Usefulness}) + e \end{aligned}$$

Conceptually, HLM allowed us to compute a regression equation predicting the likelihood of taking a course from ratings of expected enjoyment and usefulness using participants' subjective ratings of all eight courses, while modeling the dependency among ratings due to the repeated measures design. The slope of the enjoyment-likelihood line represented the strength of the relationship between expected enjoyment and likelihood of taking courses (anticipated choice). Therefore, whether this line differed as a function of culture was of primary interest. The level 2 equation then allowed us to test whether the enjoyment-likelihood relationship was different for East Asians versus Euro-Canadians.

### Enjoyment-Likelihood Relationship

Central to our hypothesis, we found cross-level interactions between expected enjoyment and culture,  $\beta_{11} = -.16, t(104) = -2.48, p = .02$ , indicating that the relationship between expected enjoyment and likelihood of taking a course was stronger for Euro-Canadians,  $\beta_{10} = .64, p(104) = 15.28, p < .001$ , than for East Asians,  $\beta_{10} = .48, t(104) = 10.61, p < .001$  (see Figure 3), although both of these coefficients were significantly greater than zero.<sup>2</sup>

### Usefulness-Likelihood Relationship

Anticipated usefulness significantly predicted likelihood of taking a course for both Euro-Canadians,  $\beta_{20} = .38, t(104) = 8.16, p < .001$ , and East Asians,  $\beta_{20} = .41, t(104) = 7.71, p < .001$ , indicating that participants were more likely to take courses they perceived as useful. Culture did not moderate this relationship,  $\beta_{21} = .03, t(104) = .45, p = .66$ .

## DISCUSSION

Study 2 provided more direct evidence that expected enjoyment has less influence on choices for East Asians versus Euro-Canadians, though participants from both

2. We follow Raudenbush and Bryk's (2002) notation for Studies 2 and 3 by using beta to represent fixed effect coefficients; all coefficients reported are unstandardized.

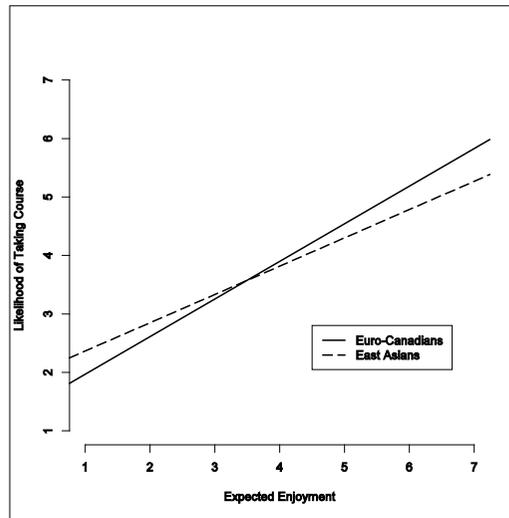


FIGURE 3. Enjoyment-likelihood relationship for each cultural group in Study 2.

groups placed substantial weight on expected enjoyment. Importantly, our analyses should be relatively immune to any idiosyncratic perceptions of our stimulus materials; even if there were some differences in which courses were viewed as enjoyable or useful between individuals or cultures, this would not pose a major threat to our conclusions because our analyses estimated relationships among variables within each culture and relied on each individual's idiographic perceptions of the courses.<sup>3</sup>

Studies 1-2 provide evidence of cultural differences in the extent to which decisions are influenced by expected enjoyment, but did not identify the responsible underlying psychological mechanism. It will always be the case that cultural differences could be due to some unmeasured demographic variable that was confounded with cultural group. We addressed these issues with an experimental design in Study 3.

### STUDY 3

Our theoretical perspective predicts that the amount of weight individuals place on expected enjoyment when making decisions should depend on the relative accessibility of interdependent and independent self-construals. That is, when individuals think about their relationships and interpersonal responsibilities, they should place less weight on predicted personal enjoyment when making decisions. In contrast, when considering their independence from others, they should feel freer to pursue hedonic endeavors. Individuals differ in the accessibility of cultural knowledge structures (Hong, Morris, Chiu, & Benet-Martinez, 2000), including both independence and interdependence (Gardner, Gabriel, & Lee, 1999).

3. We did not find any evidence of cultural differences in overall means, within-individual variance, and across-individual variance of enjoyment and usefulness ratings. The details of these analyses are available upon request from the first author.

Individuals exposed more to Euro-American culture habitually reference an independent self, whereas those exposed more to an East Asian culture habitually reference an interdependent self.

Previous studies have shown that the relative accessibility of an independent or interdependent self can be manipulated (Gardner et al., 1999), and priming such cultural constructs is a frequently used technique for understanding the mechanisms underlying cultural differences (Heine & Norenzayan, 2006). If this underlying dimension is responsible for the cultural differences we have found in the weight individuals place on expected enjoyment, manipulating self-construal should recapitulate this difference.

## METHOD

### Participants

To test our hypothesis, we recruited 137 East Asian UBC students (74% females; mean age = 20.48,  $SD = 2.51$ ) meeting the same categorization criteria as Studies 1 and 2 and all living in Canada; because these bicultural individuals have exposure to both independent and interdependent cultural ideals, they should be the most receptive to primes (Hong et al., 2000; Hong, Ip, Chiu, Morris, & Menon, 2001). These participants varied greatly in the percentage of life they had lived in North America (range: < 1% to 100%,  $M = 67.08%$ ,  $SD = 34.17%$ ). Participants were recruited by research assistants, blind to experimental condition, and in the same manner as in Studies 1 and 2.<sup>4</sup>

### Design, Procedure, and Materials

This study used the same procedure, stimuli, and main dependent measures as Study 2, but participants were randomly assigned to an interdependence prime, independence prime, or no prime control condition. The primes were taken directly from Trafimow, Triandis, and Goto (1991, Study 2) and were read by participants after completing the background questionnaire and before reading the course descriptions. Each prime consisted of a short story about a warrior who must pick a new military commander. In the interdependence condition, the protagonist picks a family member in order to benefit his family. In the independence condition, the protagonist picks a "talented general" because the protagonist will personally benefit from this choice. Participants in the no prime condition did not read any story. These primes have been used successfully in the original study and in other studies to prime interdependent and independent self-construals (e.g., Gardner et al., 1999).

All other materials were identical to Study 2, except that usefulness ratings always appeared after enjoyment ratings, and we counterbalanced whether likelihood ratings appeared first or last.

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4. One participant was excluded for missing values on level 2 predictors.

## RESULTS

**Analytic Strategy**

We employed the same data-analytic technique as in Study 2, using the same level 1 equation. The level 2 equations included four predictors. A contrast code tested for the predicted linear progression in the strength of the enjoyment-likelihood relationship from the interdependent prime, to no prime, to the independence prime conditions (C1; interdependent prime =  $-1/2$ , no prime = 0, independence prime =  $1/2$ ). A second orthogonal contrast code was necessary to complete the representation of experimental conditions (C2; interdependent prime =  $-1/3$ , no prime =  $2/3$ , independence prime =  $-1/3$ ). Percentage of life lived in Canada/USA (PL, grand mean centered) was added as a continuous measure of acculturation and allowed us to control for exposure to North American culture. Albeit a crude measure, similar variables have been used successfully in previous research to study acculturation of East Asian individuals to North America (e.g., Heine & Lehman, 2004). Interactions between percentage of life lived in Canada/USA and each of the experimental condition contrasts did not significantly increase the fit of the model,  $\chi^2(6) = 7.85, p = .25$ , and were trimmed from the overall model. Age and gender also did not increase the fit of the model and were therefore not included in the model,  $\chi^2(3) = 1.95, p > .5$ , and  $\chi^2(3) = 5.51, p = .14$ , respectively. Questionnaire version was a significant predictor of some level 1 coefficients,  $\chi^2(3) = 12.58, p < .01$ , and was included as a level 2 predictor (Q; likelihood-enjoyment-usefulness =  $1/2$ , enjoyment-usefulness-likelihood =  $-1/2$ ). The full mixed-model equation appears below and results appear in Table 2:

$$\begin{aligned} \text{Likelihood} = & (\beta_{00} + \beta_{01}(\text{C1}) + \beta_{02}(\text{C2}) + \beta_{03}(\text{PL}) + \beta_{04}(\text{Q}) + r_0) + \\ & (\beta_{10} + \beta_{11}(\text{C1}) + \beta_{12}(\text{C2}) + \beta_{13}(\text{PL}) + \beta_{14}(\text{Q}) + r_1)(\text{Enjoyment}) + \\ & (\beta_{20} + \beta_{21}(\text{C1}) + \beta_{22}(\text{C2}) + \beta_{23}(\text{PL}) + \beta_{24}(\text{Q}) + r_2)(\text{Usefulness}) + e \end{aligned}$$

**Enjoyment-Likelihood Relationship**

The relationship between expected enjoyment and likelihood of taking a course was moderated by the predicted experimental condition contrast,  $\beta_{11} = .14, t(132) = 1.95, p = .05$ , but not the orthogonal contrast,  $\beta_{12} = -.03, t(132) = -.48, p = .63$ . The combination of the results for these two coefficients (i.e., significant predicted contrast, non-significant orthogonal contrast) confirms the order of the enjoyment-likelihood relationship across experimental conditions as we expected: The strength of the enjoyment-likelihood relationship was statistically significant in all conditions, but lowest in the interdependent prime condition,  $\beta_{10} = .43, t(132) = 8.18, p < .001$ , highest in the independence prime condition,  $\beta_{10} = .57, t(132) = 10.32, p < .001$ , and at an intermediate level in the no prime condition,  $\beta_{10} = .47, t(132) = 10.00, p < .001$  (see Figure 4).<sup>5</sup> Percentage of life lived in Canada/USA was also a marginally significant moderator of the enjoyment-likelihood relationship in a direction consistent with our theoretical perspective—those who spent less of their life in Canada/USA placed less weight on enjoyment,  $\beta_{13} = .18, t(132) = 1.84, p = .07$ .

TABLE 2. HLM Fixed Effects for Study 3: Likelihood of Taking Course as Dependent Variable

Fixed Effect	Coefficient	se	df	t Ratio
Likelihood Mean				
Intercept, $\beta_{00}$	3.91	0.05	132	73.13***
Contrast 1 (Predicted), $\beta_{01}$	-0.06	0.13	132	-0.48
Contrast 2 (Orthogonal), $\beta_{02}$	0.13	0.11	132	1.23
Percent Life in CA/USA, $\beta_{03}$	-0.25	0.15	132	-1.71 <sup>†</sup>
Question Order, $\beta_{04}$	-0.06	0.11	132	-0.52
Enjoyment Slope				
Intercept, $\beta_{10}$	0.49	0.03	132	16.06***
Contrast 1 (Predicted), $\beta_{11}$	0.14	0.07	132	1.95*
Contrast 2 (Orthogonal), $\beta_{12}$	-0.03	0.06	132	-0.48
Percent Life in CA/USA, $\beta_{13}$	0.18	0.10	132	1.84 <sup>†</sup>
Question Order, $\beta_{14}$	0.18	0.06	132	3.07**
Usefulness Slope				
Intercept, $\beta_{20}$	0.31	0.03	132	9.14***
Contrast 1 (Predicted), $\beta_{21}$	-0.08	0.09	132	-0.96
Contrast 2 (Orthogonal), $\beta_{22}$	0.09	0.07	132	1.27
Percent Life in CA/USA, $\beta_{23}$	0.08	0.10	132	0.81
Question Order, $\beta_{24}$	-0.13	0.07	132	-1.89 <sup>†</sup>

Note. <sup>†</sup> $p \leq .10$ . \* $p \leq .05$ . \*\* $p \leq .01$ . \*\*\* $p \leq .001$ .

### Usefulness-Likelihood Relationship

The relationship between perceived usefulness and perceived likelihood of taking a course was significant,  $\beta_{20} = .31$ ,  $t(132) = 9.14$ ,  $p < .001$ , but this relationship did not vary as a function of experimental condition nor percentage of life lived in Canada/USA (all  $ps > .20$ ).

## DISCUSSION

As hypothesized, increasing the accessibility of an interdependent (versus independent) self-construal led bicultural individuals to place less weight on predicted enjoyment when making decisions. Thus, given that priming interdependence versus independence reproduced the cultural effects we observed in Study 2, these dimensions may underlie the between-group differences we observed in the first two studies. Moreover, by demonstrating that a well-established underlying psy-

5. The predicted contrast by itself also indicates that the enjoyment-likelihood relationship in the independence condition and interdependence condition were significantly different from each other. Using dummy coding instead of contrast codes and specifying the control condition as the reference group, it can be shown that the enjoyment-likelihood relationship for the control condition was not different from that in the independence prime condition,  $\beta_{11} = .10$ ,  $t(132) = 1.40$ ,  $p = .16$ , nor that in the interdependence prime condition,  $\beta_{12} = -.04$ ,  $t(132) = -.63$ ,  $p = .53$ .

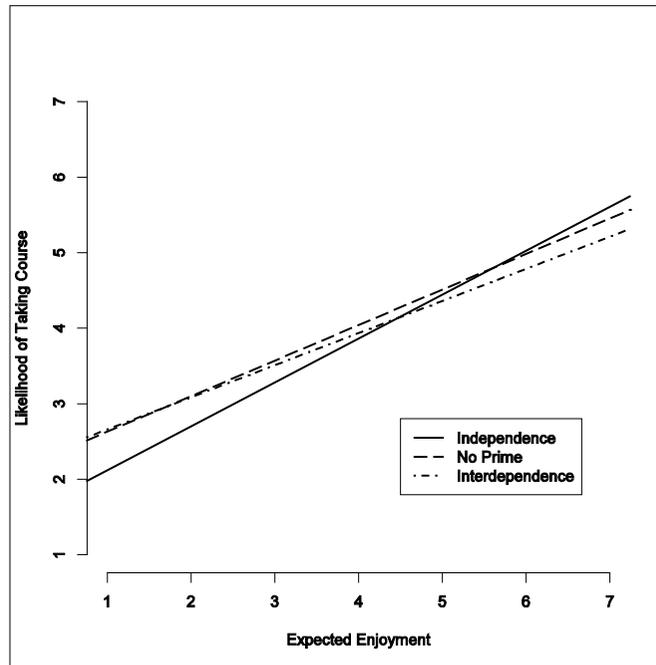


FIGURE 4. Enjoyment-likelihood relationship for each experimental prime condition in Study 3.

chological difference between cultures exercised a causal influence on the weight participants placed on expected enjoyment, the experimental approach used in Study 3 casts doubt on the possibility that the cultural differences we observed in Studies 1 and 2 stemmed from some artifactual difference between groups.

## GENERAL DISCUSSION

The present findings suggest that individuals from East Asian cultural backgrounds place less weight on expected enjoyment than their Euro-Canadian counterparts in decision-making situations. In Study 1, when faced with a choice participants believed was real and imminent, Euro-Canadians overwhelmingly chose an enjoyable activity over a useful one, whereas East Asians did not show a clear preference. Examining the underlying process more closely in Study 2, we found that East Asians placed less weight on their own expected enjoyment in making hypothetical course choices than did Euro-Canadians. Finally, to identify the psychological mechanism underlying this cultural difference, we manipulated self-construal directly (Study 3), and found that this manipulation reproduced the cultural differences observed in Study 2. Thus, we conclude that, relative to Euro-Canadians, East Asians may place less weight on expected enjoyment because their interdependent concern with social roles and relationships precludes the uncompromising pursuit of positive affect.

Importantly, our studies demonstrate not only an overall cultural difference, but have taken an initial step toward identifying the responsible underlying process.

The cultural differences we observed may stem from differences in the accessibility of interdependent versus independent self-construals. The fact that these results emerged while using stimuli that did not directly mention any possible impact of participants' decisions on other individuals is consistent with previous literature suggesting that individuals internalize self-construals and those with an interdependent self-construal habitually consider others' perspectives (e.g., Heine et al., 2008). Habitually thinking about close relationships (common in East Asian cultures) may lead individuals to place less weight on expected enjoyment when making decisions because such pursuit of enjoyment is antithetical to the fulfillment of one's obligations to others; habitually thinking about one's independence from others (common in Euro-American culture) may lead individuals to place more weight on expected enjoyment because individuals are free to pursue hedonic endeavors.

The present findings imply that decision-making models developed and tested with Westerners may overestimate the importance of expected positive affect for individuals from East Asian collectivistic cultures. While this cultural difference is important to recognize, it would be inappropriate to conclude that affective forecasts are irrelevant for individuals with an interdependent self-concept. Indeed, we observed a significant relationship between expected enjoyment and choice even for East Asian participants who had spent very little time in Canada/USA and who had been primed with interdependence. This suggests that the relationship between affective forecasts and decision making may represent a functional universal (Norenzayan & Heine, 2005); that is, affective forecasts play a role in decision making across cultures, but the strength of this relationship may vary in systematic and meaningful ways.

Although we have argued that cultural background influences the weight that individuals place on their expected enjoyment, there is an intriguing alternative cultural explanation for the present findings. It is possible that Euro-Canadians place more weight on short-term pleasure whereas East Asians place more weight on long-term pleasure. For example, in our course selection paradigm, East Asians might have placed less value on the enjoyment they would experience during the course, but more value on the enjoyment they would experience later, as a result of having taken the course (e.g., due to successful employment). Several strands of research suggest East Asians, versus Westerners, focus more on long-term outcomes (Hofstede & Bond, 1988), view events as having more far-reaching consequences (Maddux & Yuki, 2006), and exhibit lower temporal discounting rates for monetary outcomes (Du, Green, & Myerson, 2002; Takahashi et al., 2009). Note, however, that none of this work provides evidence that East Asians are especially concerned with maximizing positive emotions in the long-term. Some evidence shows that East Asians, versus Westerners, are happier when engaging in activities important for long-term goals (e.g., Asakawa & Csikszentmihalyi, 2000). Still, to the best of our knowledge, there is no evidence that interdependent cultures encourage the pursuit of positive affect in the long-term rather than the short-term. If East Asians placed more weight on long-term (over short-term) enjoyment in our studies, we would have expected to see cultural differences in the weight students placed on course usefulness, which we operationalized in terms of the long-term benefits the course would provide (e.g., through enhanced graduate school and

career prospects). Yet, we observed no cultural differences in how much weight students placed on course usefulness. Previous research provides strong support for our theoretical notion that interdependent cultures foster ambivalence toward the pursuit of positive affect. Still, the delay of gratification explanation represents a worthwhile avenue for future research.

Further work is needed to extend the generalizability of the present findings to other populations. Our investigation was limited to Euro-Canadians and East Asians living in Canada. This population provided us with an ideal first test of our hypotheses. Because all of our participants were students at the same university, we could be fairly confident that they would share a common understanding of our experimental materials. At the same time, the diversity of this student population enabled us to recruit individuals who possessed a strong East Asian cultural background. Having established the existence of a cultural difference within this population, it would be worthwhile to extend this work to examine not only East Asians living in East Asia, but also to examine individuals in other cultural contexts (e.g., Latin America, indigenous cultures in Central America and Africa).

By choosing to focus on enjoyment—a broad, positive, affective dimension—our approach builds directly upon important work on human motivation and recent work on affective forecasting and decision making. Importantly, enjoyment constitutes the critical affective component in prominent theories of intrinsic motivation (e.g., Ryan & Deci, 2000). Furthermore, the majority of affective forecasting studies assess affect using broad, single-item measures (e.g., Dunn, Wilson, & Gilbert, 2003; Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998; Lam et al., 2005), which Wilson and Gilbert (2003) argue have adequate psychometric properties. Recent work suggests that similar results emerge regardless of whether a single item or multiple items are used to assess affective forecasts (Dunn & Ashton-James, 2008). Consistent with the affective forecasting literature more broadly, studies specifically examining the relationship between expected emotions and decision making typically focus on broad dimensions of positive affect, such as enjoyment (e.g., Klaaren, Hodges, & Wilson, 1994). For example, most studies testing decision affect theory have employed single-item measures of expected positive affect in predicting choices (Mellers et al., 1997; Mellers et al., 1999). Thus, the present work can be readily integrated with the existing literature on affective forecasting, decision making, and motivation.

While our methodological approach maps on to existing literature, it would be worthwhile to extend the present investigation to include other affective dimensions. Based on our theoretical perspective, we expect that our findings would generalize to other kinds of broad positive affect (e.g., personal happiness) and high-arousal positive affect (e.g., excitement) as Western individuals are also likely to value these kinds of affect more than East Asians (Benedict, 1946; Tsai, Knutson, & Fung, 2006). Future studies, or a more culturally specific operationalization of usefulness, may shed light on what factors East Asians place more weight on in their decisions. For example, socially engaging positive emotions (e.g., respect) and low-arousal positive affect may be more important for East Asians than Westerners (Kitayama, Mesquita, & Karasawa, 2006; Tsai et al., 2006). Cultural differences also exist in the tendency to approach positive outcomes versus avoid negative outcomes (e.g., Lee, Aaker, & Gardner, 2000), suggesting that East Asians

may place more weight on affective forecasts for negative emotions. Finally, it is possible that East Asians strive for a balance between positive and negative affect instead of trying to maximize or minimize either (Heine et al., 1999; Kitayama & Markus, 2000; Uchida et al., 2004). By providing the first demonstration that culture moderates the weight individuals place on a broad dimension of expected affect (i.e., enjoyment), the present work lays the foundation for a broad exploration of the ways in which culture shapes the relationship between affective forecasts and decision making.

That is, the present research sheds light in this area by demonstrating that the weight individuals place on their own expected enjoyment depends on their cultural background and, more specifically, on the relative accessibility of independent versus interdependent self-construals. Given that differences in independence and interdependence tend to cluster with other cultural dimensions, our studies do not preclude the possibility that other pathways and dimensions may also moderate the forecast-decision relationship. The current research primarily constitutes the first stage in identifying a cultural difference and much work still remains to further explain the mechanisms underlying this cultural difference (Heine & Norenzayan, 2006). Still, the present work does allow us some insight into the question we posed at the outset regarding Susan and Shizuka's course selection dilemma. Our work suggests that Susan and Shizuka would both place substantial weight on how much they expected to enjoy their courses. However, to the extent that Shizuka possessed an interdependent sense of self, it is likely that she would place less weight on her own forecasted enjoyment than would Susan.

## APPENDIX. COURSE DESCRIPTIONS

*Literature 959 (Analysis of Fairytales).* Not many students rated the content of the course to be useful or applicable to their future courses or careers. However, the professor for this class is famed for lively and enthusiastic lectures with a high level of student participation and interaction—including live demonstrations and reenactments.

*Science 943 (Applied Research Methods).* Graduate schools often prefer students with this specialized course on their transcript—even if you are not applying to a graduate program in a science-related field. Each lecture starts off with a video clip from a new popular movie—something students have said is very entertaining and makes learning fun.

*English 972 (Perfect Essay and Report Writing).* Many lengthy PowerPoint presentations and very, very dim lights often make students in the class want to just go to sleep. Unfortunately the chairs are too uncomfortable to permit students to do so. However, this course looks great on a resume and many professional organizations and business are looking for students that have experience in this particular domain.

*Math 958 (Applied Statistical Methods)*. The content of this course has a wide range of applications no matter what your major field of study. Students from nearly all domains will no doubt learn something that can be applied in practical situations. Students noted that the professor speaks in a sleep-inducing monotone voice, and lectures are often rather dry.

*English 942 (Abstract Writing)*. Do not expect an easy “A” in this course. The professor refuses to get to know students and will not write letters of recommendations for anyone. Students often reported that the lectures were “less entertaining than average” and there were few opportunities for interaction and participation.

*Science 974 (Theories of Scientific Knowledge)*. The professor for this course has been described as “dictator-like.” Everything is taken so seriously that students have reported lectures to be somewhat depressing. The content is also something you will probably not find to be helpful in your everyday life or in your future career—no matter what field you decide to enter.

*Literature 966 (Famous Persuasive Essays)*. The professor gives some of the most entertaining lectures you will ever have at UBC. Students have found the content to be engaging and useful in their everyday lives. In addition, due to a small class size, the professor often offers to write letters of recommendations for all students in the class—for the purposes of graduate school applications, job applications, or scholarship applications.

*Math 965 (The Magic of Numbers)*. The professor for this class has been known to hold class outside when the weather is nice. Several times during the term class discussions are held at the professor’s house on campus. The professor’s spouse is well known for her chocolate chip cookies—expect to go over course material while having your fill of these marvelous cookies and other snacks. Don’t expect the course content to be anything that your future employer will be interested in anyway—most businesses are not interested in hiring those with such skills.

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