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Dampening or Savoring Positive Emotions:
A Dialectical Cultural Script Guides Emotion Regulation

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Abstract

Four studies examined the hypothesis that, although people may generally want to savor, rather than to dampen, their positive emotions (i.e., hedonic emotion regulation), such a hedonic emotion regulation tendency should be less pronounced for Easterners than for Westerners. Using retrospective memory procedures, Study 1 found that Easterners recalled engaging in hedonic emotion regulation less than Westerners did, even after controlling for their initial emotional reactions. Studies 2-3 showed that cultural differences in emotion regulation were mediated by dialectical beliefs about positive emotions. Study 4 replicated the findings by examining online reports of emotion regulation strategies on the day students received a good grade. Furthermore, there were cultural differences in actual emotion change over time, which was partly explained by dialectical beliefs about positive emotions. These findings highlight the active role cultural scripts play in shaping emotion regulation and emotional experiences. (141 words)

Keywords: culture, emotion regulation, dialectical cultural script, emotion change, retrospective and online measures

Dampening or Savoring Positive Emotions:

A Dialectical Cultural Script Guides Emotion Regulation

All around the world, people should generally want to feel positive emotions and avoid feeling negative emotions (Larsen, 2000). However, up-regulating positive emotions and down-regulating negative emotions are not the only ways in which people regulate emotions (Gross, 1998). Depending on individuals and situations, people sometimes try to down-regulate positive emotions (Parrott, 1993; Tamir, 2009). For example, when experiencing positive emotions, people low in self-esteem tend to become anxious and dampen their positive emotions compared to people high in self-esteem (Wood, Heimpel, & Michela, 2003; Wood, Heimpel, Newby-Clark, & Ross, 2005). In addition, people seek to down-regulate positive emotions in certain situations, such as when expecting to interact with a stranger (Erber, Wegner, & Therriault, 1996) or expecting to work on confrontational tasks (Tamir, Mitchell, & Gross, 2008).

The purpose of the present research was to investigate how cultural scripts influence emotion regulation. Across cultures, when one is feeling positive emotions, there are three ways to regulate them: up-regulation, maintenance, or down-regulation (Gross, 1998). Following operationalizations used in previous studies (Wood et al., 2003; Wood et al., 2005), the present research examines cultural differences in *savoring* (i.e., up-regulation and maintenance) or *dampening* (i.e., down-regulation) of positive emotions. Even though people may generally want to feel better rather than to feel worse (Larsen, 2000), the extent to which people show such a tendency to savor rather than to dampen positive emotions, which we term “hedonic emotion regulation”, may differ across cultures because different cultures have different scripts about how emotions should be experienced (Mesquita & Ellsworth, 2001; Miyamoto & Ryff, 2011; Tsai, Knutson, & Fung, 2006). By focusing on cultural differences in emotion regulation

strategies, the present four studies investigated whether Eastern cultural scripts motivate individuals to savor positive emotions less and dampen positive emotions more than Western cultural scripts do.

Cultural Scripts and Emotional Experiences

Happiness rests in misery

Misery hides in happiness

Who knows where they end

(*Tao te ching*, chapter 58)

There are cultural scripts about how positive and negative emotions should be experienced and combined (Miyamoto & Ryff, 2011). In Western culture, the dominant cultural script is to maximize positive emotions and minimize negative emotions (Kitayama, Markus, & Kurokawa, 2000). Such a positive-maximizing cultural script has a long history in Western culture (Ryan & Deci, 2001); in ancient Greece, Aristippus taught that the goal of life is to maximize pleasure, and in more recent times, Bentham argued that a good society is one which maximizes individuals' pleasure. Even the American Declaration of Independence lists the pursuit of happiness as a fundamental right. In Eastern culture, on the other hand, the dominant cultural script is grounded in dialectical thinking, as illustrated in the above quote. It is characterized by a belief that reality is constantly changing—misery turns into happiness, and happiness turns into misery—and a tolerance of contradictions by finding the “middle way” (Peng & Nisbett, 1999). Studies have shown that, compared to Westerners, Easterners tend to: expect the present state of affairs to change (Ji, Nisbett, & Su, 2001), prefer contradictions, and seek a middle way (Peng & Nisbett, 1999). The dominant cultural script in Eastern culture, thus, is to seek a middle way by experiencing a balance between positive and negative emotions.

Cross-cultural research on norms about emotions illustrates these scripts. Although positive emotions are generally considered to be more desirable and appropriate than negative emotions are across cultures, positive emotions are considered to be more desirable in Western cultures than in Eastern cultures, whereas negative emotions are considered to be more undesirable in Western cultures than in Eastern cultures (Eid & Diener, 2001). Cultural scripts are also evident in folk models of happiness (Uchida & Kitayama, 2009). When asked to describe features of happiness, Americans mainly focus on positive aspects of happiness, such as positive hedonic experience. On the other hand, Japanese are more likely than Americans to refer to negative aspects of happiness as well, such as the transitory nature of happiness (e.g., not lasting long), and to its negative social consequences.

How are such culturally divergent scripts reflected in actual emotional experiences? Although people are more likely to feel positive emotions than negative emotions across cultures (Diener & Diener, 1996; Schimmack, Radhakrishnan, Oishi, Dzokoto, & Ahadi, 2002; Suh, Diener, Oishi & Triandis, 1998), there are cultural differences in the extent to which people feel positive emotions and how positive and negative emotions are combined. Compared to Westerners, Easterners report experiencing lower well-being (Diener, Diener, & Diener, 1995; Uchida, Norasakkunkit, & Kitayama, 2004), and less frequent positive emotions (Kitayama et al., 2000; Mesquita & Karasawa, 2002). In addition, positive and negative emotions are less negatively correlated among Easterners than among Westerners (Bagozzi, Wong, & Yi, 1999; Perunovic, Heller, & Rafaeli, 2007; Scollon, Diener, Oishi, & Biswas-Diener, 2005; Shiota, Campos, Gonzaga, Keltner, & Peng, 2010), and such cultural differences in the experience of positive and negative emotions are mediated by dialectical beliefs (Spencer-Rodgers, Peng, & Wang, 2010). Furthermore, Miyamoto and Ryff (2011) found that, whereas Americans are more

likely than Japanese to experience positive emotions frequently and negative emotions infrequently, Japanese are more likely than Americans to experience both positive and negative emotions moderately frequently. They also found such a dialectical way of experiencing positive and negative emotions is associated with better health profiles in Japan than in the U.S., pointing out the possibility that an emotional style which fits the cultural script may be functionally adaptive.

At the same time, the nature of the situation plays an important role in determining how cultural scripts are manifested (Leu, Mesquita, Ellsworth, Zhang, Yuan, Buchtel, et al., 2010; Miyamoto, Uchida, & Ellsworth, 2010). When the situation is predominantly positive, Easterners might experience both positive and negative emotions because of the cultural script to seek a middle-way, whereas Westerners might only feel positive emotions due to the cultural script to maximize positive emotions. On the other hand, when the situation is predominantly negative, both dialectical and positive-maximizing cultural scripts should motivate individuals to feel both positive and negative emotions. Supporting this contention, it has been found that Easterners are more likely than Westerners to have a simultaneous experience of positive and negative emotions in predominantly pleasant situations, but there is no cultural difference in the association between positive and negative emotions in predominantly unpleasant situations (Leu et al., 2010; Miyamoto et al., 2010).

Cultural Scripts and Emotion Regulation

These findings suggest that cultural scripts are reflected in different emotional experiences across cultures. However, compared to the amount of studies demonstrating cultural differences in emotional experiences, not much is known about the process through which cultural scripts become reflected in emotional experiences. People often try to influence how

they experience and express emotions by various means, such as by choosing situations, changing cognition, or modulating responses (Gross, 1998). Cultural scripts may guide such emotion regulation strategies to shape emotional experiences.

Studies have shown that different cultures socialize children to regulate their emotions in a way that fits their cultural script. Ethnographic observation suggests that American mothers think that it is important to highlight their children's success, whereas Chinese mothers think that it is important for parents to discipline children (Miller, Wang, Sandel, & Cho, 2002). In line with this observation, a laboratory experiment found that when children succeeded on a test, American mothers were more likely than Chinese mothers to provide positive comments (e.g., "You are so smart!"), whereas Chinese mothers were more likely than American mothers to provide neutral and task-relevant statements (e.g., "Did you understand what the questions were asking or did you just randomly guess?"; Ng, Pomerantz, & Lam, 2007). These findings suggest that when children succeed in a task, American mothers are more likely to up-regulate children's positive emotions by highlighting children's success, whereas Chinese mothers are more likely to down-regulate children's positive emotions by not highlighting their success.

Such differences in parental practices may be internalized as children are socialized in each culture, leading them to regulate their own emotions in a way that is congruent with a pertinent cultural script. It is thus possible that cultural differences also exist in how adults regulate their own positive emotions; after experiencing a positive event and feeling positive emotions, Easterners may be less likely than Westerners to engage in hedonic emotion regulation. In fact, there are some studies which have shown cultural differences in how adults choose situations that differ in potentials to change positive emotions (Oishi & Diener, 2003; Tsai, 2007). Westerners are more likely than Easterners to choose to work on a task on which

they previously performed well (Heine, Lehman, Markus, & Kitayama, 1999), which in turn leads Westerners to have higher enjoyment after performing the task compared to Easterners (Oishi & Diener, 2003). Westerners' choice of activity thus may contribute to an increase in positive emotions.

Although highly suggestive, these studies do not provide direct evidence for a motivation to regulate positive emotions or reasons underlying divergent emotion regulation strategies. Thus, by employing explicit measures of emotion regulation strategies, the present research examined whether Westerners regulate their emotions more hedonically (i.e., try to savor rather than to dampen positive emotions) compared to Easterners after experiencing a positive event. Even though people may generally want to savor rather than to dampen positive emotions, due to cultural scripts involving dialecticism, such hedonic emotion regulation should be less pronounced for Easterners than for Westerners.

To examine these issues, the present research used both retrospective memories (Studies 1-3) and online reports (Study 4) of emotion regulation. Study 1 first examined cultural differences in emotion regulation strategies using retrospective memories. Studies 2-3 sought to identify reasons for dampening positive emotions across cultures and examined whether such reasons mediated cultural differences in emotion regulation strategies. Study 4 used the online reports of emotion regulation to examine whether the findings based on retrospective memories could be replicated with online measures. Furthermore, Study 4 explored whether cultural scripts and emotion regulation strategies have any consequences on actual emotion change over time following the experience of a positive event.

Study 1

Method

Participants

Thirty-three European American undergraduates (12 males and 21 females) and 21 East Asian international undergraduates (6 males and 15 females) at the University of Wisconsin – Madison participated in the study. Students were given a course credit for their participation. Each session was conducted in a small group with a maximum of five participants. All East Asian undergraduates were born in East Asia (i.e., China, Taiwan, or Korea) and had lived in the U.S. for an average of 1.65 years.

Procedure

Participants were first asked to think about a time when they, as individuals, succeeded in something important, and then to describe the event in detail. Next, participants were asked to respond to the following questions:

Emotional reactions to the event. In order to examine participants' original emotional reactions to the positive event, we asked them to report their emotional reactions using two items: (i) the extent to which they felt good (positive) emotions and (ii) the extent to which they felt bad (negative) emotions. The scales ranged from 0 (*not at all*) to 4 (*very strongly*).

Emotion regulation strategy measures. On the subsequent page, participants reported their emotion regulation strategies. We measured emotion regulation strategies using items developed by Wood et al. (2003). There were two savoring positive emotions items ($\alpha = .65$, e.g., *I engaged in activities to help maintain my good feelings*) and three dampening positive emotions items ($\alpha = .82$, e.g., *I thought about things to dampen my good feelings—to make myself feel not as good*). Participants were asked to rate the extent to which they experienced each reaction using an 8-point rating scale ranging from 1 (*not at all*) to 8 (*a very great deal*).

Results

Characteristics of Events

Type of events. To explore whether there were any cultural differences in the type of positive events, descriptions of the events were coded as academic success, athletic or music success, or others. The majority of both European American and Asian situations involved an academic success (64% and 76%, respectively), such as being admitted to a college, whereas 33% of European American and 10 % of Asian situations involved an athletic or music success. This cultural difference was marginally significant, $\chi^2(2, N = 54) = 5.51, p = .06$, Cramer's $V = .32$.

Emotional reactions to the event. We performed a 2 (valence) x 2 (culture) ANOVA. Consistent with the instruction to recall situations where they succeeded in something important, participants recalled feeling positive emotions ($M = 3.70, SD = 0.69$) much more strongly than negative emotions ($M = 0.39, SD = 0.60$), $F(1, 52) = 638.84, p < .001, \eta^2_p = .93$. This effect was qualified by a valence x culture interaction, $F(1, 52) = 6.85, p = .01, \eta^2_p = .12$, suggesting that European Americans felt positive emotions ($M = 3.94, SD = 0.24$) more strongly than Asians did ($M = 3.33, SD = 0.97$), $t(52) = 3.45, p < .001, d = 1.01$, whereas there was no cultural difference in the extent to which European Americans ($M = 0.36, SD = 0.60$) and Asians ($M = 0.43, SD = 0.60$) felt negative emotions, $t(52) = 0.39, p = .70, d = 0.12$.

Emotion Regulation Strategies

To test our hypothesis that, after experiencing a positive event and feeling good, the tendency to regulate hedonically (i.e., savor rather than to dampen their positive emotions) should be less pronounced for East Asians than for Americans, we ran a 2 (culture) x 2 (type of emotion regulation strategy: savoring vs. dampening) ANOVA. There was a main effect of type, $F(1, 52) = 191.87, p < .001, \eta^2_p = .79$, suggesting that, in general, participants recalled savoring

($M = 5.82$, $SD = 1.55$) more than dampening their positive emotions ($M = 2.16$, $SD = 1.34$), showing a pattern of hedonic emotion regulation. Consistent with our hypothesis, the main effect of type was further qualified by an interaction with culture, $F(1, 52) = 19.41$, $p < .001$, $\eta^2_p = .27$: the tendency to regulate hedonically was less pronounced for Asians, $M = 5.43$, $SD = 1.38$ for savoring, and $M = 3.10$, $SD = 1.54$ for dampening, $t(20) = 5.69$, $p < .001$, $d = 1.60$, than for European Americans, $M = 6.08$, $SD = 1.62$ for savoring, and $M = 1.57$, $SD = 0.74$ for dampening, $t(32) = 15.26$, $p < .001$, $d = 3.82$. Follow-up analyses also showed that Asians ($M = 3.10$, $SD = 1.54$) were more likely than European Americans ($M = 1.57$, $SD = 0.74$) to dampen positive emotions, $t(52) = 4.26$, $p < .001$, $d = 1.43$. Additionally, there was a trend for European Americans ($M = 6.08$, $SD = 1.62$) to savor positive emotions more than Asians ($M = 5.43$, $SD = 1.38$), although this was not significant, $t(52) = 1.51$, $p = .14$, $d = 0.43$.

Because there was a cultural difference in original emotional reactions to the positive event, we also examined if the cultural difference in emotion regulation remained even after controlling for emotional reactions, in order to rule out the possibility that the cultural difference in emotion regulation was driven by original emotional reactions to the situation. We created an emotional reaction composite score by subtracting the negative emotional reaction measure from the positive emotional reaction measure and used this as a covariate. The interaction between culture and type of emotion regulation remained significant even after controlling for the emotional reaction composite score, $F(1, 51) = 20.88$, $p < .001$, $\eta^2_p = .29$.

Discussion

The results of Study 1 provided evidence for cultural differences in how to regulate positive emotions. When recalling a situation where they experienced a positive event, Asians showed a weaker hedonic emotion regulation pattern compared to Americans. Importantly, the

cultural differences remained even after controlling for original emotional reactions, which suggests that the differences in regulation are independent from differences in initial emotional reactions to the positive event.

Study 2

Although the findings of Study 1 provided evidence for cultural differences in emotion regulation strategies, it is not clear what underlies these differences. Studies 2 and 3 thus explored causes of cultural differences in the tendency to regulate hedonically. To do so, we first asked participants in both Western and Eastern cultures to list reasons why they wanted to dampen positive emotions after they experienced a positive event. We sought to identify factors based on the coding of the reasons provided by participants in both cultures (Study 2), and then tested whether such reasons mediated cultural differences in emotion regulation (Study 3). We also recruited Japanese in Studies 2 and 3 to see if the results of Study 1 could be generalized to East Asians living in East Asia.

Method

Participants

Seventy-eight European American undergraduates at the University of Wisconsin – Madison (28 males and 50 females) and 108 Japanese undergraduates at Hosei University (40 males, 53 females, and 1 unknown) answered the questions described in the following section as part of a larger packet of questionnaires, which were irrelevant to the purpose of the present study. Students in the U.S. were given course credit and students in Japan were given monetary compensation for their participation.

Procedure

Participants were asked to think about a time when they succeeded in something important and felt good, but they tried to dampen their happy feelings or tried to calm themselves down. If they had ever experienced such a situation, they were asked to describe the situation briefly and to specify why they tried to dampen their happy feelings or calm themselves down. If they had never experienced such a situation, they did not have to respond to the questions.¹ The analyses were conducted with the descriptions given by those participants who responded to the questions.

Results

Based on the reasons which participants provided, we identified five common reasons for dampening positive emotions: (i) social concerns, (ii) dialectical beliefs, (iii) self-effacing tendencies, (iv) self-improvement motivations, and (v) interpersonal tactics. *Social concerns* were identified as reasons that involved a fear of hurting other people's feelings or hurting one's social image, such as sympathizing with others who did not succeed, or not wanting to be perceived as arrogant. *Dialectical beliefs* were reasons that involved beliefs about the dialectical, changing nature of the world, such as a bad thing will follow a good thing, being too happy leads to negative consequences (or being middle-way is desirable), or the future is unpredictable. A *self-effacing tendency* involved reasons that stemmed from self-doubt or lack of confidence, such as devaluing the importance of success, doubting whether one really succeeded or not, or feeling that one did not deserve positive feelings. *Self-improvement motivations* were those that referred to a motivation to succeed again, such as staying focused, or learning from the experience. Lastly, *interpersonal tactics* were reasons for people to dampen their positive emotions to attract or manipulate others, such as trying to stay cool on a first date even though one is excited. Two English-Japanese bilingual coders independently coded the presence or absence of each of the

five reasons for dampening positive emotions. The inter-rater reliability (Cohen's kappa) ranged from .72 to .85 ($M = .78$).

Frequencies and percentages of participants who mentioned the five reasons are presented in Table 1. Japanese (23.40%) were more likely than Americans (5.19%) to mention dialectical beliefs as a reason for dampening positive emotions, $\chi^2(1, N = 171) = 10.89, p < .001, \Phi = .25$. For example, a Japanese participant wrote, "Because I am constantly thinking that there will be a bad event after a good event". This suggests that a dialectical cultural script is underlying regulation of positive emotions and, more importantly, it is a more common factor in Japan than in the U.S. Interestingly, social concern was the most frequently mentioned reason for dampening positive emotions across cultures (70.13% of Americans and 60.64% of Japanese), and there were no cultural differences in the likelihood of mentioning it, $\chi^2(1, N = 171) = 1.67, p = .20, \Phi = .10$. For example, an American participant wrote that "I didn't want people to think I was stuck up" and a Japanese participant wrote that "I thought that others would feel unpleasant if I acted proudly." On the other hand, Americans (12.99%) were more likely than Japanese (3.19%) to mention interpersonal tactics as a reason for dampening positive emotions, $\chi^2(1, N = 171) = 5.78, p = .02, \Phi = .18$. For example, an American participant wrote that "I did not want my boyfriend to freak out because I was that excited (to be asked out)". There were no cultural differences in the likelihood of mentioning self-effacing tendencies, $\chi^2(1, N = 171) = 1.27, p = .21, \Phi = .10$, or self-improvement reasons, $\chi^2(1, N = 171) = 2.10, p = .15, \Phi = .11$.

Discussion

The results of Study 2 showed cultural differences and similarities in reasons why people want to dampen positive emotions. A dialectical belief was a more common reason for dampening positive emotions in Japan than in the U.S., whereas an interpersonal tactic was a

more common reason for dampening positive emotions in the U.S. than in Japan. There were no cultural differences in social concerns, self-effacing tendencies, or self-improvement motivations.

Study 3

Following up on the results from Study 2, Study 3 tested whether dialectical beliefs mediated cultural differences in the tendency to regulate positive emotions hedonically. We focused on the mediating role of dialectical beliefs because Study 2 did not find any cultural differences in social concerns, self-effacing tendencies, or self-improvement motivations. In addition, although there were cultural differences in interpersonal tactics in Study 2, we did not include them in Study 3 because they were mainly confined to romantic contexts and were not relevant to other typical types of success (e.g., academic or athletic performances) that were more commonly described by participants.

Method

Participants

Twenty-five European American undergraduates at the University of Wisconsin – Madison (7 males and 18 females) and 28 Japanese undergraduates at Kobe University (9 males and 19 females) participated in the study. Students in the U.S. were given course credit and students in Japan were given monetary compensation for their participation. Participants first worked on a visual perception task involving judgments of various geometric figures, which is irrelevant to the purpose of the present study. After they finished the visual perception task, they were given a questionnaire on emotion regulation.

Procedure

Participants were asked to think about a time when they as an individual succeeded in something important and felt good, and to describe the event in detail. They were instructed that success could mean any event that made them feel good about themselves, and, in order to ensure that participants come up with a wide range of events, they were also told that the event was not limited to academic or athletic realms. Participants were then asked to rate their emotional reactions as in Study 1. We also used the emotion regulation measures (Wood et al., 2003) that we used in Study 1: savoring positive emotion ($\alpha = .87$) and dampening positive emotion ($\alpha = .82$).

Based on Study 2, we created a scale to measure dialectical beliefs about positive emotions (4 items; $\alpha = .88$). For example, “I thought that something bad might happen if I continued feeling delighted”; “Since good things tend not to last long, I wanted to be careful.” Participants were asked to rate the extent to which they experienced each reaction using a 7-point rating scale ranging from 1 (*not at all*) to 7 (*very much*).

All of the materials were translated into Japanese by one English-Japanese bilingual and back-translated into English by another English-Japanese bilingual. The original English version and the back-translated English version were compared and any discrepancies were resolved through discussion among the translators.

Results

Characteristics of Events

Type of events. To explore whether there were any cultural differences in the type of success events, descriptions of the events were coded either as academic success, athletic or music success, or others. A majority of both American and Japanese success situations involved an academic success (56% and 43%, respectively), whereas 32% of American and 39 % of East

Asian situations involved an athletic or music success. This cultural difference was not significant, $\chi^2(2, N = 53) = 0.96, p = .62, \text{Phi} = .14$.

Emotional reactions. We performed a 2 (valence) x 2 (culture) ANOVA. Participants recalled feeling positive emotions ($M = 3.77, SD = 0.42$) much more strongly than negative emotions ($M = 0.49, SD = 0.72$), $F(1, 51) = 714.56, p < .001, \eta^2_p = .93$. There was also a cultural main effect, $F(1, 51) = 5.41, p = .02, \eta^2_p = .10$: in general, Americans reported experiencing emotions ($M = 2.26, SD = 0.54$, overall; $M = 3.92, SD = 0.28$ for positive emotions, and $M = 0.60, SD = 0.76$ for negative emotions) more strongly than Japanese did ($M = 2.02, SD = 0.54$ overall; $M = 3.64, SD = 0.49$ for positive emotions, and $M = 0.39, SD = 0.69$ for negative emotions). There was no 2-way interaction, $F(1, 51) = 0.08, p = .77, \eta^2_p = .002$.

Emotion Regulation Strategies

To replicate the findings of Study 1, we ran a 2 (culture) x 2 (type of emotion regulation: savoring vs. dampening strategy) ANOVA. Consistent with Study 1, the interaction between culture and type of emotion regulation was significant, $F(1, 51) = 5.12, p = .03, \eta^2_p = .09$: the tendency to regulate hedonically was less pronounced for Japanese, $M = 4.46, SD = 2.34$ for savoring, and $M = 2.20, SD = 1.44$ for dampening, $t(27) = 4.20, p < .001, d = 1.20$, than for Americans, $M = 5.34, SD = 2.11$ for savoring, and $M = 1.47, SD = 0.71$ for dampening, $t(24) = 8.59, p < .001, d = 2.74$. In addition, follow-up analyses showed that Japanese ($M = 2.20, SD = 1.44$) were more likely than Americans ($M = 1.47, SD = 0.71$) to dampen positive emotions, $t(51) = 2.32, p = .02, d = 0.66$. Although there was also a trend for Americans ($M = 5.34, SD = 2.11$) to savor positive emotions more than Japanese did ($M = 4.46, SD = 2.34$), the trend was not significant, $t(51) = 1.43, p = .16, d = 0.39$.

To be consistent with Study 1, we also examined if cultural differences in hedonic emotion regulation exist after controlling for original emotional reactions. The interaction between culture and type of emotion regulation remained significant even when using the emotional reaction composite score as a covariate, $F(1, 50) = 4.95, p = .03, \eta^2_p = .09$.

Dialectical Beliefs about Positive Emotions.

Supporting our hypothesis, there was a main effect of culture, $t(51) = 3.06, p = .004, d = 0.84$. Japanese ($M = 4.16, SD = 1.68$) were more likely than Americans ($M = 2.80, SD = 1.55$) to endorse dialectical beliefs about positive emotions.

Mediation Analysis

We examined whether dialectical reasons for dampening positive emotions mediated cultural differences in hedonic emotion regulation strategies. To test for mediation, we subtracted the dampening from the savoring emotion regulation strategy to create a hedonic emotion regulation composite score. As shown in Figure 1, in comparison to Americans, Japanese engaged in less hedonic emotion regulation, $B = -1.61 (SE = .71), p = .03, f^2 = 0.10$, and endorsed greater dialectical beliefs about positive emotions, $B = 1.36 (SE = .45), p = .004, f^2 = 0.18$. When both culture and dialectical beliefs about positive emotions were entered simultaneously into the model to predict hedonic emotion regulation, dialectical beliefs about positive emotions significantly predicted hedonic emotion regulation, $B = -0.48 (SE = .22), p = .03, f^2 = 0.10$. The cultural difference in hedonic emotion regulation strategies was no longer significant after dialectical beliefs was entered into the model, $B = -0.96 (SE = .75), p = .21$. The Sobel test was marginally significant, $Z = 1.77, p = .08$.

Discussion

Studies 2 and 3 suggested that cultural differences in dialectical beliefs about positive emotions underlie cultural differences in hedonic emotion regulation. Furthermore, two studies—one with East Asians in the U.S. and the other with Japanese in Japan—provided converging evidence that Easterners are less likely than Westerners to engage in hedonic emotion regulation.

Although these findings provide evidence for cultural differences in emotion regulation, emotion regulation was measured based on the retrospective memory of a positive event. Cultural differences in emotional experiences tend to be larger in retrospective memory than in online experiences (e.g., Oishi, 2002). In addition, we used self-rating scales to measure emotion regulation strategies, thus a concern might be that East Asians tend to provide more moderate responses on a rating scale (Chen & Stevenson, 1995). Therefore, Study 4 seeks to replicate the findings using a different measure of emotion regulation.

Study 4

In Study 4, we examined how people regulate emotions in response to a recent positive event—getting a good grade in an Introductory Psychology course. Study 4 examined online report of emotion regulation strategies, and used open-ended questions about what individuals intended to do after they had a positive experience, as well as the emotion regulation scale to measure emotion regulation strategies.

Study 4 also examined emotion change over time. Because participants in Studies 1 and 3 were only asked to report immediate emotional reactions to the positive event, it is yet unknown how their emotions changed over time as a result of cultural scripts or engagement in hedonic emotion regulation strategies. If a dialectical cultural belief motivates Easterners to regulate less hedonically after a positive experience, Easterners may actually experience less positive emotion on the day following the event compared to Westerners. In Study 4, we thus explored whether

there are cultural differences in emotion change and whether dialectical beliefs mediated cultural differences in emotion change.

Method

Participants

We conducted three online surveys. One hundred and seven European American undergraduates (46 males and 61 females) and 59 Asian and Asian American undergraduates (21 males and 38 females; 38 Asians and 21 Asian Americans) at the University of Wisconsin – Madison completed all three surveys and provided their grade for the introductory psychology course.² Students were given a course credit for their participation. For simplicity, in the following section, Asian/Asian American participants will be referred to as Asians.

Procedure

About one week before the first mid-term exam for the Introduction to Psychology course, students received an invitation email to participate in a study examining students' experiences in the course. The response rate was 59% for European Americans and 49% for Asians, $\chi^2(1, N = 301) = 0.85, p = .36$. They were invited to finish a three-part on-line diary survey, the timeline of which was specified in the email. If they agreed to participate, a link would navigate them to the survey page of the first part that they were required to finish before they took the mid-term exam. The aim of the first part was to recruit participants before the exam to avoid self-selection after they found out whether they succeeded or failed. In the first part of the on-line survey, to be consistent with the cover story, they were asked questions about their preparation for their exam. They also filled out demographic information.

Participants filled out the second part of the survey right after they received their grade for the introductory psychology course, which was posted online. The survey asked participants

to report their grade in a letter grade. In the introductory psychology course at the University of Wisconsin-Madison, the letter grades are determined strictly based on the following curve: top 10% A, the following 5% AB, the following 20% B, the following 10% BC, the following 35% C, the following 15% D, and the bottom 5% F. Therefore, students who scored average received a C. The distribution of self-reported grades in our survey (i.e., 14% A, 7% AB, 19% B, 11% BC, 31% C, 15% D, and 4% F) approximately matched the grade distribution of students in the entire course. We defined success in this exam as scoring higher than the average (A to BC) and failure as scoring lower than the average (C to F). European Americans (57%) were more likely to succeed on the exam than Asians (37%), $\chi^2(1, N = 166) = 5.92, p = .02, \Phi = .19$.

The second part of the survey also included emotion measures, containing 10 positive (i.e., *enthusiastic, active, proud, successful, excited, competent, confident, interested, smart, happy*; $\alpha = .94$ for participants who succeeded) and 10 negative emotions (i.e., *nervous, irritable, afraid, upset, ashamed, angry, unhappy, disappointed, worthless, unconfident*; $\alpha = .91$ for participants who succeeded). Among those twenty emotion measures, half of them were adapted from the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). The other half of the emotion measures were added to capture the participants' situation-specific experiences. Participants reported how they felt at that moment, using a 5-point rating scale ranging from *not at all* to *very much*. To examine types of activity in which they would choose to engage, they were asked to generate three plans for the rest of the day, and specify the reason for each plan. On the following page, participants were given the emotion regulation measures (Wood et al., 2003) modified to fit the context. There were three savoring positive emotion items (e.g., *I want to engage in activities to help me feel good*; $\alpha = .75$ for participants who succeeded) and three dampening positive emotion items (e.g., *I want to think about things to calm myself*

down; $\alpha = .63$ for participants who succeeded). Participants were asked to rate the extent to which they experienced each reaction right at the moment using an 8-point rating scale ranging from *not at all* to *a very great deal*.

On the following day, participants filled out the third part of the survey, including the same set of emotion measures. At the end, they were asked to respond to the same questions which we used in Study 3 about their reasons for dampening positive emotions that were central to our questions: dialectical beliefs about positive emotions. The items were modified to capture the general tendency to have certain reactions after success (e.g., “When I succeed in something, I tend to think that something bad might happen if I continue feeling delighted.”) Participants were asked to rate the extent to which each statement described them using a 7-point rating scale ranging from *does not describe at all* to *describe very well*. These items were added at the very end of the third survey so that reading the items would not influence their emotion or emotion regulation.

Two coders who were blind to the ethnicity and grade of participants coded the contents of the planned activities which participants listed in the second part of the survey. Based both on the nature of the activity and its listed reasons, coders counted the number of activities which (a) reflected intentions to increase or maintain positive emotions (e.g., going out to a party to have fun, watching winter Olympics on TV to relax), (b) reflected a motivation to work harder (e.g., studying for a chemistry mid-term to get an A), (c) reflected external reasons, such as obligations or routines (e.g., writing a paper because it was due the following day), and (d) were driven by a physiological need (e.g., eating dinner to satisfy one’s hunger). Note that the same activity (e.g., eating dinner) could be coded either as increasing/maintaining positive emotions if the reason for the activity was to feel good, or as a physiological need if the reason was simply to satisfy one’s

hunger. The intraclass correlation between the two coders ranged from .83 to .93 ($M = .88$). No participants explicitly mentioned engaging in specific activities to dampen their positive emotions. It is likely that, when people are in a positive mood, engaging in most activities will naturally dampen their positive mood (Wegener & Petty, 1994). Thus, savoring or maintaining positive emotions may require more intentional engagement in specific activities than dampening positive emotions does.

Results

We first analyzed participants' emotional reactions right after they received their grade to confirm that those who succeeded felt good, whereas those who failed felt bad. To examine our hypothesis about cultural differences in strategies to regulate emotions after experiencing a positive event, we performed the subsequent analyses only with those students who succeeded on the exam. We examined cultural differences in on-line reports of emotion regulation strategies (i.e., planned activity and emotion regulation strategy scales) as well as reasons for dampening positive emotions. Furthermore, we explored whether there are cultural differences in emotion change and whether dialectical beliefs and emotion regulation strategies mediated cultural differences in emotion change.

Emotional Reactions Right After Receiving Grades

We performed a 2 (valence) x 2 (culture) x 2 (grade: success or failure) ANOVA with the emotion measures on the second survey. The valence x grade interaction was significant, $F(1, 162) = 115.32, p < .001, \eta^2_p = .42$. After receiving a good grade, students reported feeling positive emotions ($M = 3.18, SD = 0.98$) much more strongly than negative emotions ($M = 1.60, SD = 0.64$), whereas after receiving a bad grade, students reported feeling negative emotions (M

= 2.78, $SD = 0.87$) much more strongly than positive emotions ($M = 1.95$, $SD = 0.65$). Culture did not qualify this interaction, $F(1, 162) = 1.68$, $p = .20$, $\eta^2_p = .01$.

To be consistent with Studies 1 and 3, we also performed a 2 (valence) x 2 (culture) ANOVA with the emotion measures on the second survey by focusing only on participants who succeeded. After receiving a good grade, participants reported feeling positive emotions ($M = 3.18$, $SD = 0.98$ overall; $M = 3.23$, $SD = 0.92$ for European Americans, and $M = 3.03$, $SD = 1.15$ for Asians) more strongly than negative emotions ($M = 1.60$, $SD = 0.64$ overall; $M = 1.55$, $SD = 0.49$ for European Americans, and $M = 1.76$, $SD = 0.93$ for Asians), $F(1, 81) = 74.06$, $p < .001$, $\eta^2_p = .48$. There was no cultural main effect, $F(1, 81) = 0.004$, $p = .95$, $\eta^2_p < .001$, or culture x valence interaction, $F(1, 81) = 1.44$, $p = .23$, $\eta^2_p = .02$.

Emotion Regulation Strategies

To examine our hypothesis about cultural differences in strategies used to regulate emotions after experiencing a positive event, the following analyses were performed only with those students who succeeded on the exam.

Planned activity. Numbers of each type of activity listed by participants are summarized in Table 2. Culture significantly predicted the number of activities that would increase or maintain positive emotions, $t(81) = 2.58$, $p = .01$, $d = .66$: European American participants ($M = 0.87$, $SD = 0.96$) were more likely to list activities that would increase or maintain positive emotions than were Asian participants ($M = 0.32$, $SD = 0.48$). There were no significant cultural differences in other types of activities. To be consistent with Studies 1 and 3, we also examined if cultural differences exist after controlling for original emotional reactions. Cultural differences in the number of savoring activities remained significant even after controlling for the emotional reaction composite score, $F(1, 80) = 5.14$, $p = .03$, $\eta^2_p = .06$.

Emotion regulation strategy scale. We ran a 2 (culture) x 2 (type of emotion regulation strategy: savoring vs. dampening) ANOVA. There was a main effect of type, $F(1, 81) = 134.29$, $p < .001$, $\eta^2_p = .62$, suggesting that participants reported savoring ($M = 4.71$, $SD = 1.67$) more than dampening their positive emotions ($M = 2.33$, $SD = 1.17$), which shows a pattern of hedonic emotion regulation. Replicating Studies 1 and 3, the main effect was further qualified by a 2-way interaction with culture, $F(1, 81) = 5.93$, $p = .02$, $\eta^2_p = .07$: the difference in hedonic emotion regulation was larger for European Americans, $M = 4.77$, $SD = 1.69$ for savoring, and $M = 2.14$, $SD = 0.94$ for dampening, $t(60) = 13.08$, $p < .001$, $d = 2.00$, than for Asians, $M = 4.58$, $SD = 1.63$ for savoring, and $M = 2.86$, $SD = 1.54$ for dampening, $t(21) = 6.13$, $p < .001$, $d = 1.09$. Follow-up analyses also showed that Asians ($M = 2.86$, $SD = 1.54$) were more likely than European Americans ($M = 2.14$, $SD = 0.94$) to dampen positive emotions, $t(81) = 2.57$, $p = .01$, $d = 0.65$. There was no cultural difference in the tendency to savor positive emotions, $t(81) = 0.45$, $p = .65$, $d = 0.11$. In addition, the interaction between culture and type of emotion regulation remained significant even after controlling for the emotional reaction composite score, $F(1, 80) = 5.79$, $p = .02$, $\eta^2_p = .07$, suggesting that cultural differences in hedonic emotion regulation are not due to differences in original emotional reactions.

Dialectical Beliefs about Positive Emotions.

Replicating the findings of Study 2 with Japanese respondents, Asian participants were more likely to endorse dialectical beliefs about dampening their positive emotions ($M = 3.41$, $SD = 1.42$) than were European Americans ($M = 2.57$, $SD = 1.30$), $t(81) = 2.54$, $p = .01$, $d = .62$.

Emotional Consequences

Next, we explored how emotions changed over time. Overall, respondents who succeeded on the exam felt less positive on the following day ($M = 2.89$, $SD = 0.87$) than on the day on

which they got the grade back ($M = 3.18$, $SD = 0.98$), $F(1, 81) = 16.69$, $p < .001$, $\eta^2_p = .17$. Their negative emotions did not change over time ($M = 1.60$, $SD = 0.74$ on the day on which they got their grade back and $M = 1.54$, $SD = 0.64$ on the following day), $F(1, 81) = 0.15$, $p = .70$, $\eta^2_p = .002$. To further examine emotion change, we created an emotion change index. Following the procedures used by Wood et al. (2003), we first regressed the emotional composite score of the following day on the emotional composite score of the day on which they received the grade, and saved the residuals. The saved residuals were used as the emotion change index. For example, lower scores on the emotion change index indicated lower positive relative to negative emotion on the subsequent day, controlling for their emotions on the day on which they got the grade back.

Predictors of emotion change. We first examined whether culture predicted emotion change over time. Dummy coded culture (1 = European Americans, 2 = Asians) significantly predicted the emotion change index, $B = -0.24$ ($SE = 0.08$), $p = .003$, $f^2 = 0.11$. Consistent with our hypothesis, Asians reported feeling lower positive relative to negative emotion on the following day, controlling for their emotions on the previous day, than European Americans' did.³

Next, we explored whether emotion regulation strategies and dialectical beliefs predicted emotion change. Although the number of savoring activities did not predict the emotion change index, $B = 0.11$ ($SE = 0.12$), $p = .36$, $f^2 = 0.01$, the hedonic emotion regulation strategy measure (the difference between savoring and dampening) marginally predicted the emotion change index, $B = 0.13$ ($SE = 0.07$), $p = .058$, $f^2 = 0.05$, suggesting that hedonic emotion regulation strategies are linked to actual change in emotions, albeit weakly.⁴ In addition, dialectical beliefs about positive emotions predicted the emotion change index, $B = -0.31$ ($SE = 0.07$), $p < .001$, $f^2 =$

0.22, suggesting that dialectical beliefs are associated with the feeling of lower positive relative to negative emotion on the following day, controlling for the emotions on the previous day.

Mediation analyses. We further examined whether emotion regulation strategies or dialectical beliefs about positive emotion mediated cultural differences in emotion change. As reported above, culture significantly predicted the emotion change index, $B = -0.24$ ($SE = 0.08$), $p = .003$, $f^2 = 0.11$. Second, culture predicted dialectical beliefs about positive emotions, $B = 0.28$ ($SE = 0.11$), $p = .01$, $f^2 = 0.08$. When both culture and dialectical beliefs were entered simultaneously into the model to predict the emotion change index, dialectical beliefs significantly predicted emotion change, $B = -0.26$ ($SE = 0.07$), $p = .001$, $f^2 = 0.16$,⁵ while the association between culture and emotion change remained significant, $B = -0.17$ ($SE = 0.08$), $p = .03$, Sobel test, $Z = 2.10$, $p = .04$ (Figure 2). These results suggest that endorsing dialectical beliefs about positive emotions partially mediated cultural differences in emotion change following the success.

We also examined whether emotion regulation strategies mediated cultural differences in emotion change. Though all regression coefficients were in the predicted direction, neither the number of savoring activities nor the hedonic emotion regulation strategy mediated cultural differences in emotion change, Sobel test, $Zs = 0.13$ and 1.10 , $ps = .90$ and $.27$, respectively. Dialectical beliefs might be a stronger predictor of emotion change than emotion regulation strategies are probably because dialectical beliefs might guide not only intentional, conscious emotion regulation strategies but also more automatic, non-conscious means of emotion regulation (Bargh, & Williams, 2007), such as automatic activation of emotion regulation goals (Mauss, Cook, & Gross, 2007; Williams, Bargh, Nocera, & Gray, 2009), which can also contribute to emotion change.

General Discussion

It is generally assumed that people want to feel positive emotions (Larsen, 2000). However, our findings across four studies indicate that there are cultural differences in the extent to which people want to regulate hedonically (i.e., to either dampen their positive emotions or to not savor them); we found that although people generally want to savor rather than to dampen their positive emotions, such a hedonic emotion regulation pattern was less pronounced for Easterners than it was for Westerners. Study 1 found that when recalling a positive event, Asians recalled engaging in hedonic emotion regulation to a lesser extent than Americans did. Studies 2 and 3 found that a dialectical belief about positive emotions mediated cultural differences in hedonic emotion regulation. Study 4 replicated the cultural differences in hedonic emotion regulation by examining online reports of emotion regulation strategies. Study 4 also found that, partly due to their dialectical cultural belief, Asians actually reported feeling lower positive relative to negative emotion on the day following the positive event compared to Americans. Overall, these results suggest that a dialectical cultural script not only underlies cultural differences in hedonic emotion regulation, but also has consequences on subsequent emotional experiences.

Previous cross-cultural studies have demonstrated cultural differences in emotional experiences: Westerners tend to report experiencing positive emotions more frequently than Easterners do (Kitayama et al., 2000), whereas Easterners tend to report experiencing both positive and negative emotions moderately frequently (e.g., Miyamoto & Ryff, 2011). The present findings indicate that such differences in emotional experiences could be partly stemming from and sustained by different emotion regulation strategies. Because of a cultural script to seek the middle-way, Easterners are more likely than Westerners to engage in hedonic

emotion regulation that would either dampen or not savor positive emotions. Repeated engagement in such emotion regulation strategies may lead Easterners to have a more moderate experience of positive emotions compared to Westerners.⁶

If Easterners regulate their positive emotions less hedonically than Westerners, does this mean that Easterners have unhealthy emotion regulation styles? We believe that seeking a middle-way has some functional benefits in Eastern cultures. The fact that the dialectical cultural script has been transmitted and maintained in Eastern cultures for thousands of years seems to suggest that it has some adaptive benefits. For example, when expecting to interact with strangers, even Westerners regulate their positive emotions less hedonically (Erber et al., 1996). It is thus possible that seeking a middle-way helps one to adjust to the needs of others and situational demands. In addition, a dialectical way of experiencing positive and negative emotions was associated with a better health profile in Japan than in the U.S. (Miyamoto & Ryff, 2011). Together with the present findings, such findings highlight the importance of taking cultural contexts into consideration when understanding mental and physical health problems. This might have practical implications, for instance, for therapists. Therapists may want to be aware that a lack of hedonic emotion regulation might not be necessarily indicative of a mental health problem for Asians. Instead, helping Asians strive to achieve a more “middle way” in their emotion regulation strategies might lead to optimal mental health.

Limitations and Future Directions

The present research examined the hedonic tendency to savor rather than to dampen positive emotions by treating savoring and dampening as opposing ends of a single continuum. At the same time, savoring and dampening could also be viewed as independent dimensions. In fact, in the present research, although there was a general tendency for East Asians to regulate

emotion hedonically, cultural differences tended to be larger for dampening than for savoring. This has an interesting implication; although East Asians are much more likely than European Americans to try to dampen positive emotions, they may also try to savor positive emotions (albeit somewhat weakly compared to European Americans). Previous cross-cultural studies on dialecticism have suggested that East Asians tend to perceive that seemingly inconsistent and opposing tendencies can exist within themselves (e.g., being both introvert and extrovert; Choi & Choi, 2002). Thus, it is possible that dampening and savoring may not be completely opposites among East Asians. Such a possibility and its implications need to be examined in the future research.

The present research focused on how people regulate emotions in response to a positive event. Future studies need to examine cultural differences and similarities in how people regulate emotions in response to a *negative* event. Previous studies which have examined emotional experiences in pleasant and unpleasant situations have found smaller cultural differences in unpleasant than in pleasant situations (Leu et al., 2010; Miyamoto et al., 2010). These studies suggest the possibility that cultural differences in emotion regulation strategies are also smaller for negative situations; both positive-maximizing and dialectical cultural scripts should motivate people to down-regulate negative emotions when in a negative situation. At the same time, previous research has also found that Easterners consider negative emotions to be more desirable and appropriate than Westerners (Eid & Diener, 2001). It is thus possible that Easterners perceive more utility in maintaining negative emotions and tend to down-regulate negative emotions less than Westerners do. If the latter is the case, cultural differences in emotion regulation strategies would be found in response to both positive and negative situations, though

mechanisms and motivations underlying cultural differences would differ depending on the situations.

In addition, we focused on positive events in which people succeeded in something important and felt good about themselves. Although it is not clear whether the same cultural differences in emotion regulation could be observed for other type of positive events, relevant cross-cultural studies on emotional experiences suggest that they may. Studies show that positive and negative emotions are less negatively correlated among Easterners than among Westerners not only in personal achievement contexts but also in social and romantic contexts (Leu et al., 2010; Shiota, et al., 2010). Although these studies did not directly examine emotion regulation strategies, they indicate that cultural differences in emotional experiences can be observed across different types of positive events. At the same time, future research should explore whether there are any particular positive events where Easterners may try to engage in hedonic emotion regulation, and where Westerners may try to engage in more “middle way” emotion regulation strategies.

There is debate as to whether savoring positive emotions requires conscious effort to scrutinize affective consequences of activities. Some researchers have suggested that when people are in a positive mood, they do not carefully consider affective consequences (e.g., Schaller & Cialdini, 1990). On the other hand, Wegener and Petty (1994) suggest that people need to carefully choose activities to savor their positive emotions when they are feeling positive because engagement in most activities will make them feel less good. This suggests that savoring positive emotions requires more effortful emotion regulation processes than does dampening positive emotions. If this is the case, Westerners may be engaging in more effortful emotion regulation than Easterners. The findings of planned activities in Study 4 provide some indirect

support to this possibility; European Americans are more likely than East Asians to prefer to engage in activities which help them to savor their positive emotions. Future research needs to examine whether Easterners are simply regulating positive emotions less than Westerners or if they are actively dampening positive emotions more through means other than choosing certain activities.

Conclusions

Not only does happiness rest in misery, but misery also hides in happiness. As reflected in the classic text of Taoism, *Tao te ching*, a dominant cultural script in the Eastern culture is to seek a middle way by experiencing a balance between positive and negative emotions. The present research found that such a dialectical belief guides Easterners to regulate less hedonically compared to Westerners. Although cultural differences in the experience of positive and negative emotions have been widely documented, how cultural scripts become reflected in emotional experiences is not well understood. The present findings suggest that, by engaging in culturally divergent emotion regulation strategies, individuals are actively shaping their own emotional experiences and thus playing an active role in sustaining and maintaining the cultural script.

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Footnotes

¹ One European American and 14 Japanese students responded that they have never dampened positive emotions and thus did not provide any reason for dampening positive emotions, $\chi^2(1, N = 186) = 8.34, p < .01$. Although this contradicts our hypothesis that Japanese should dampen positive emotions more than Americans do, it is hard to interpret this finding because it might have reflected participants' motivation to fill out the open-ended questions. In addition, Westerners are generally better at detailed recalling of episodic events than are Easterners (Wang, 2009).

² Among these participants, 112 were recruited in the spring term of 2010 and 54 were recruited in the fall term of 2010. Since there were no major differences between these two terms, we collapsed across the two groups.

³ In addition, we analyzed positive and negative emotion changes separately. We first regressed positive (or negative) emotion of the following day on positive (or negative) emotion of the day on which they received the grade, and saved the residuals to create positive (or negative) emotion change indices. Culture did not significantly predict the negative emotion change index, $B = 0.12$ ($SE = 0.08$), $p = .12, f^2 = 0.03$, but significantly predicted the positive emotion change index, $B = -0.26$ ($SE = 0.08$), $p = .002, f^2 = 0.13$: Asians reported feeling less positive emotions on the following day than European Americans did.

⁴ We further explored whether savoring and dampening emotion regulation strategies predicted positive and negative emotion changes separately. Savoring emotion regulation strategies predicted the positive emotion change index, $B = 0.14$ ($SE = 0.07$), $p = .04, f^2 = 0.05$, but did not predict the negative emotion change index, $B = 0.04$ ($SE = 0.06$), $p = .57, f^2 = 0.004$. On the other hand, dampening emotion regulation strategies predicted the negative emotion change index, $B =$

0.21 ($SE = 0.09$), $p = .02$, $f^2 = 0.08$, but did not predict the positive emotion change index, $B = 0.04$ ($SE = 0.10$), $p = .39$, $f^2 = 0.002$. These patterns point out the possibility that savoring and dampening are differentially associated with changes in positive and negative emotions.

⁵ Again, we conducted the same analysis separately for positive and negative emotion changes. When both culture and dialectical beliefs were entered simultaneously into the model to predict either positive or negative emotion change index, dialectical beliefs did not significantly predict positive emotion change, $B = -0.12$ ($SE = 0.08$), $p = .14$, $f^2 = 0.03$, but significantly predicted negative emotion change, $B = 0.29$ ($SE = 0.07$), $p < .001$, $f^2 = 0.21$. These analyses suggest that dialectical beliefs do not mediate cultural differences in *positive* emotion change, even though dialectical beliefs mediate cultural differences in *overall* emotion change, which is based on both positive and negative emotion changes. Because dialectical beliefs involve attention to negative consequences of a positive event, dialectical beliefs might indirectly lead to decreased positive emotions by guiding attention to negative events and increasing negative emotions, which might in turn lead to decreased positive emotions. In line with this possibility, there is a strong negative correlation between positive emotion change and negative emotion change ($r = -.41$, $p < .001$).

⁶ Even in the present research, emotion regulation might have influenced immediate emotional reactions to a positive event. Supporting this possibility, in Study 1, European Americans reported experiencing positive emotions more strongly than Asians did, whereas there was no cultural difference for negative emotions. However, the culture x valence interaction was not significant in Studies 3 and 4. It is likely that, compared to cultural differences in emotion regulation that were found across all three studies, cultural differences in immediate emotional reactions depend on types of success events, which differed across studies.

Table 1

Frequencies and percentages of participants who mentioned each of the reasons for dampening positive emotions in Study 2.

| | European Americans | Japanese | χ^2 (1) | <i>p</i> -value |
|------------------------|--------------------|------------|--------------|-----------------|
| Social concerns | 54 (70.13) | 57 (60.64) | 1.67 | .19 |
| Dialectical beliefs | 4 (5.19) | 22 (23.40) | 10.89 | <.001 |
| Self-effacing tendency | 10 (12.99) | 19 (20.21) | 1.57 | .21 |
| Self-improvement | 11 (14.29) | 7 (7.45) | 2.10 | .15 |
| Interpersonal tactics | 10 (12.99) | 3 (3.19) | 5.78 | .02 |

Note. Numbers are frequencies. Percentages are shown in parentheses.

Table 2

Mean number of activities listed by participants who succeeded in Study 4.

| | European Americans | Asians | <i>t</i> (81) | <i>p</i> -value |
|--------------------|--------------------|-------------|---------------|-----------------|
| Savoring | 0.87 (0.96) | 0.32 (0.48) | 2.58 | .01 |
| Motivation | 0.67 (0.83) | 1.05 (0.95) | 1.74 | .09 |
| Obligation/routine | 1.03 (1.03) | 0.77 (0.87) | 1.05 | .30 |
| Physiological need | 0.28 (0.52) | 0.41 (0.50) | 1.02 | .31 |

Note. Standard deviations are shown in parentheses.

Figure Captions

Figure 1. Dialectical belief mediating cultural differences in emotion regulation in Study 3.

Regression coefficients are standardized. Emotional reactions are controlled for. * $p < .05$, ** $p < .01$.

Figure 2. Dialectical belief mediating cultural differences in emotion change in Study 4.

Regression coefficients are standardized. * $p < .05$, ** $p < .01$. Higher values on the overall emotion change index indicate higher positive relative to negative emotion on the subsequent day, controlling for their emotions right after they received their grade.



