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ENG, JOSHUA STEPHEN

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Emotion Regulation and Culture: The Effects of Cultural Models of Self on
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By

Joshua Stephen Eng

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Committee in charge:

Professor Oliver P. John, Chair

Professor Ozlem Ayduk

Professor Rodolfo Mendoza-Denton

Professor Cameron Anderson

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Abstract

Emotion Regulation and Culture: The Effects of Cultural Models of Self on

Western and East Asian Differences in Suppression and Reappraisal

by

Joshua Stephen Eng

Doctor of Philosophy in Psychology

University of California, Berkeley

Oliver P. John, Chair

How and why do Westerners and East Asians differ in their use of emotion regulation processes? In the present dissertation, I describe five studies that test whether differences in the self-models of Westerners and East Asians lead to culture-specific patterns of emotion regulation. In Study 1, I conduct comparisons between and within cultures to test whether differential exposure to Western and East Asian culture is associated with divergent use of two emotion regulation processes—*expressive suppression* and *cognitive reappraisal*. In Study 2, I use an experimental design to prime American versus East Asian cultural identity in bi-cultural East Asian Americans, testing whether there is a causal link between cultural self-models and emotion regulation. In Studies 3 and 4, I present evidence that these cultural differences in emotion regulation are not due to methodological artifacts associated with global self-reports. In particular, I show that similar culture effects emerge when emotion regulation in a specific self-disclosure context is rated by independent judges (Study 3), and when emotion regulation is rated by peers from an individual's real-life social network (Study 4). In Study 5, I test whether Western and East Asian cultural differences in emotion regulation can be explained by two specific cultural mechanisms, namely the interdependent and independent cultural models of self. Findings are consistent across all five studies and show that Westerners use less suppression (but not less reappraisal) than individuals of East Asian cultural origin. In terms of mechanism, these differences seem to be due to the strong emphasis on independence and authentic self-expression in Western cultures, rather than to the strong emphasis on interdependence and interpersonal harmony in East Asian cultures.

Emotion Regulation and Culture: The Effects of Cultural Models of Self on Western and East Asian Differences in Suppression and Reappraisal

An American researcher, Jack, has a great idea for a new project. To test this idea, he needs the help of a collaborator in East Asia. So Jack sets up a meeting with Keiko, a visiting scholar in Jack's department who is about to return to her home in Japan. As Jack explains his idea, he attempts to gauge Keiko's interest in the project and is disappointed—she expresses little enthusiasm for his project. Jack concludes that Keiko does not find the idea intriguing, so he does not bother to ask her to help with the research. Months later, Jack has yet to find an East Asian collaborator and is about to give up on the project. He complains about his situation to several colleagues, and one of them knows Keiko well. Much to Jack's surprise, this colleague tells him that Keiko had found Jack's research idea quite interesting and was disappointed that Jack had not asked for her help with his project.

As this scenario illustrates, globalization has made communication across cultural lines an increasingly common and necessary facet of everyday life. One potential barrier to effective cross-cultural communication is that misunderstandings may arise from cultural differences in the way people experience and express their emotions. Recent research (e.g., Gross, 2007) suggests that variation in emotional responding is often due to differential use of emotion regulation processes. It is argued here that individual differences in emotion regulation are likely to be learned and therefore subject to cultural influences during socialization. In the socialization of emotion regulation within a particular culture, the models of the self endorsed and taught by that culture should be particularly important; the notion of self should be tied closely to regulation because regulatory processes influence both how the individual self internally experiences emotion and how those emotions are expressed in social interactions (Srivastava, Tamir, McGonigal, John, & Gross, 2009). Therefore, understanding how and why cultures differ in their use of emotion regulation processes should be a critical concern for behavioral scientists, business leaders, and politicians alike.

Past work suggest that Western cultures (e.g., the USA, Canada, and Australia) and East Asian cultures (e.g., China, Japan, and Korea) should provide an especially interesting cultural contrast with regard to emotion regulation. In particular, common folk conceptions and ethnographic accounts have long asserted that these two cultural contexts differ in values concerning emotions and emotional control (e.g., Benedict, 1946; Bond, 1994). Additionally, more recent empirical studies have shown that Westerners and East Asians exhibit differential emotional responding (e.g., Tsai, Chentsova-Dutton, Freire-Bebeau, & Przymus, 2002; Tsai, Levenson, & McCoy, 2006). Surprisingly, however, few researchers have tested empirically whether Westerners and East Asians differ in their use of emotion regulatory processes, and if so, whether those differences are due to cultural processes.

In the present dissertation, I describe five studies that investigate how and why Western and East Asian cultures differ in their use of emotion regulation processes. In Study 1, I conduct comparisons between and within cultures to test whether differential exposure to Western and East Asian culture is associated with divergent use of two emotion regulation processes—*expressive suppression* and *cognitive reappraisal*. In Study 2, I investigate whether experimentally priming American versus East Asian cultural identity produces parallel emotion regulation effects. In Studies 3-4, I present evidence that Western and East Asian cultural differences in emotion regulation are not due to methodological artifacts associated with global self-reports. In particular, I show that similar culture effects emerge when examining emotion regulation in a specific context as rated by independent judges (Study 3), and when examining

emotion regulation as rated by peers from an individual's real-world social network (Study 4). In Study 5, I test whether Western and East Asian cultural variation in use of emotion regulation processes can be explained by two specific cultural mechanisms, namely the interdependent and independent cultural models of self.

Theoretical Background

How and why should Western and East Asian cultures differ in their use of emotion regulation processes? To answer to this question, I turn to theory and research from two distinct psychological approaches: (1) culture and the self and (2) emotion regulation. In the following sections, I first review these approaches. I then discuss their implications for cultural differences in the use of two emotion regulation processes, and review past research in support of specific hypotheses derived from those implications. I finish by summarizing how the present dissertation tests those hypotheses.

Cultural Models of Self

Culture refers to socially shared and transmitted systems of knowledge that are instantiated in and reinforced by everyday practices, institutions, and artifacts (Kroeber & Kluckhohn, 1952). One especially important way Western and East Asian cultural contexts differ is in their predominant *cultural model of self*—that is, the way they construe the fundamental nature of the self and its relationship to others (Heine, Lehman, Markus, & Kitayama, 1999; Kim & Sherman, 2007; Markus & Kitayama, 1991; Triandis, 1995). More specifically, East Asian cultural contexts tend to endorse an *interdependent model of self*, viewing the self as a relational entity, fundamentally connected to other people, and defined primarily by contextual factors, including interpersonal relationships and social roles. East Asians' greater interdependence, in turn, leads them to hold strong values for cooperation, conformity, and relationship harmony. Moreover, a key aspect of self-concept validation in East Asian cultural contexts involves identifying the unique demands of one's important social relationships and then adjusting one's behavior to accommodate those demands.

In contrast, Western cultural contexts are more likely to emphasize an *independent model of self*, viewing the self as a distinct entity, fundamentally separate from other people, and defined primarily by internal attributes, such as thoughts and emotions. As a result of their greater independence, Western cultures tend to hold strong values for agency, autonomy, and individuality. Furthermore, an especially important aspect of self-concept validation in Western cultural contexts involves identifying one's unique internal attributes and then authentically expressing them to self and others. Indeed, the drive for self-expression is so fundamentally critical in Western cultural contexts that stifling genuine self-expression can create a discrepancy between one's inner or "true" self and one's outer behavior that can arouse an acute sense of inauthenticity that is troubling to Westerners and puts them at risk for adjustment problems, such as anxiety and depression (Goldman & Kernis, 2006; Sheldon, Ryan, Rawsthorne, & Ilardi, 1997).

Two Emotion Regulation Processes: Suppression and Reappraisal

The emerging field of *emotion regulation* has demonstrated that individuals are not forced to passively experience and express their emotions; rather, people can control their emotions and they do so frequently, using a wide variety of different regulation processes (Gross, 2007). To help organize the many processes that people may use to manage and control their emotional lives, Gross (2002) proposed a model of emotion regulation that is based on the idea that the emotional response is a process that unfolds over time. This process starts with situational cues that, when attended to and interpreted in particular ways, give rise to a

constellation of loosely related experiential, behavioral, and physiological emotional response tendencies that, once activated, can be managed or controlled in various ways. Given that the emotional response develops over time, Gross's (2002) process model of emotion regulation differentiates regulatory processes in terms of when they have their primary impact in the emotion generation process.

Two commonly used and studied emotion regulation processes that are particularly relevant for the present research are *expressive suppression* and *cognitive reappraisal*. Suppression involves inhibiting the expressive, behavioral component of emotion (e.g., facial, gestural, or verbal) after an emotional response has already been generated. An example of this regulatory process would be a student "holding her tongue" when feeling furious with her instructor, even though the student would like nothing more than to angrily lash out at her instructor. In contrast, reappraisal is an internal regulatory process that involves cognitively changing one's subjective interpretation of situational cues before an emotional response has been activated, thereby altering the effect of the situation on subsequent emotion experience. An illustration of reappraisal would be a student telling himself that an upcoming exam represents an opportunity for him to show how strong he can be and how much he has learned rather than for him to be exposed as an intellectual fraud, thereby reducing his experience of anxiety.

Implications for Western and East Asian Cultural Differences in Emotion Regulation

How and why might Western and East Asian cultures differ in their use of suppression and reappraisal? Common folk conceptions and ethnographic accounts (e.g., Benedict, 1946; Bond, 1994) suggest that East Asians are more likely than Westerners to stress emotional control and moderation in general, which implies that cultural differences would emerge in the use of both emotion regulation processes. However, psychological theory and research on cultural models of self and on emotion regulation suggest a more nuanced prediction. In particular, East Asian cultural contexts emphasize adjusting the self and behavior in the service of relationship harmony. Thus, failure to use suppression when the expression of an emotion may be detrimental for one's important relationships should interfere with the validation of the interdependent model of self. Additionally, suppression reduces the expression, but not the experience, of an emotion, so it creates a discrepancy between the individual's inner experience of emotion and outer emotion-expressive behavior. As a result, any use of this emotion regulation process should be likely to lead to feelings of inauthenticity and to interfere with self-concept validation in cultures that stress the independent model of self. Due to the implications of using suppression for the validation of the interdependent self, the independent self, or both models of self, then, individuals from Western cultures should be less likely than individuals from East Asian cultures to use suppression as an emotion regulation process.

In contrast, reappraisal is an internal regulatory process that primarily targets one's cognitive interpretation of an emotional situation. Moreover, because reappraisal occurs early in the emotion generation process—that is, before response tendencies have even been activated—it influences all components of the subsequent emotional response in a similar fashion (e.g., if reappraisal is used to downregulate the experience of anxiety, it will also downregulate the expression of anxiety as a downstream consequence). Thus, using reappraisal does not create the same discrepancy between inner emotion experience and outer expressive behavior that occurs when using suppression. Therefore, reappraisal should not be relevant either for the interdependent goal of maintaining relationship harmony or for the independent goal of expressing the authentic self. By extension, neither of these two cultural models of self should

impact reappraisal, and Western and East Asian cultures should not differ in their use of this emotion regulation process.

Prior laboratory studies on cultural differences in online emotional responding support the hypothesis that Western and East Asian cultural models of self lead to differences in use of suppression but not of reappraisal. For example, Tsai and colleagues examined European American and East Asian differences in emotional responding when reliving past emotional episodes (Tsai et al., 2002) and when having an emotional conversation with a romantic partner (Tsai, Levenson, & McCoy, 2006). These studies found that European Americans exhibited more emotional behavior than East Asians, suggesting lesser use of suppression by European Americans; in contrast, European Americans and East Asians showed no differences in online emotional experience, suggesting that these two cultural groups did not differ in their use of reappraisal. In addition to these between-groups cultural differences, however, Tsai and colleagues found that cultural factors, such as norms and values, were more strongly associated with variation in emotional expression as compared with variation in emotional experience, providing further evidence to suggest that cultural knowledge, such as cultural models of self, has an especially marked impact on regulatory processes that primarily target the behavioral component of emotion, such as suppression.

More direct evidence to support my hypotheses about Western and East Asian cultural differences in emotion regulation comes from a pioneering study by Matsumoto et al. (2008). These researchers examined scores on the Emotion Regulation Questionnaire (Gross & John, 2003), a self-report measure of suppression and reappraisal use, in 23 different countries. Matsumoto et al. (2008) did not focus on Western and East Asian cultural differences per se. However, they found that individuals from Western nations, such as the USA, Canada, and Australia, reported less use of suppression than did individuals from East Asian nations, such as China, Japan, and Korea. In contrast, they found no evidence for Western and East Asian nation-level differences in reappraisal.

The Present Research

The nation-level differences reported by Matsumoto et al. (2008) provided an invaluable first step toward understanding Western and East Asian cultural differences in emotion regulation. Nonetheless, national-group differences are a necessary though not sufficient condition to demonstrate the influence of cultural factors, such as cultural models of self, because national-group differences may also be due to a variety of confounding factors associated with national-group membership, including genetic makeup, sampling procedures, or even translation issues (Allik & McCrae, 2004). Thus, the overarching goal of the present dissertation was to extend Matsumoto et al.'s (2008) cross-national findings by demonstrating the effect of Western and East Asian cultural models of self using five distinct yet complementary empirical approaches.

In Study 1, I examined the effect of exposure to Western and East Asian cultural models on use of suppression and reappraisal, using comparisons involving preexisting groups. In particular, as in past work (e.g., Matsumoto et al., 2008), I first tested for emotion regulation differences between national and ethnic groups that differed in Western and East Asian cultural exposure. Then, extending prior studies, I tested for emotion regulation differences within a single group of individuals who shared a common ethnic background but differed in Western and East Asian acculturation experiences. In Study 2, I moved beyond the quasi-experimental design used in Study 1 and in all other past research on cultural differences in emotion regulation, by experimentally manipulating Western and East Asian cultural models. More specifically, I used

priming to experimentally shift the accessibility and salience of the American and East Asian cultural identities of bi-cultural East Asian Americans, and then examined the effect of the priming manipulation on use of suppression and reappraisal. In Study 3, I began to address a key limitation of all past studies of cultural differences in emotion regulation: they all have measured emotion regulation using only global self-report instruments, so any previously observed cultural differences may have been due to methodological artifacts (e.g., Oishi, 2002). Thus, instead of studying global use of emotion regulation processes, I examined cultural differences in the use of suppression and reappraisal in a specific relational context—during a self-disclosure task in which participants introduced and described themselves to an imagined future roommate. Moving beyond self-report methodology, I measured suppression and reappraisal in this specific context using ratings by independent judges. In Study 4, I sought to provide further evidence for the effects of Western and East Asian cultural models on emotion regulation by documenting them with a third independent data source, namely reports from peers belonging to individuals' real-world social networks. Finally, because Studies 1-4 provided strong but nonetheless indirect evidence that culture-specific models of self underlie Western and East Asian group differences in emotion regulation, in Study 5, I tested whether interdependence, independence, or both self-models would mediate those emotion regulation differences.

Study 1: The Effects of Western and East Asian Cultural Exposure on Use of Suppression and Reappraisal

The national-level differences demonstrated by Matsumoto et al. (2008) suggest that culture-specific models of self lead individuals who are enculturated in Western versus East Asian cultural contexts to differentially regulate their emotions, and that cultural models exert their influence primarily on the use of regulatory processes, such as suppression, that create a discrepancy between inner emotion experience and outer emotional behavior. Nonetheless, national-level differences may result from cultural factors as well as numerous confounding factors associated with national-group membership, such as genetic background, sampling procedures, or even translation differences (Allik & McCrae, 2004). Additionally, although the dichotomization of nations as interdependent versus independent proved a useful and productive heuristic in early cross-cultural work, more recent research has recognized that cultural variation also exists within nations, for example among different ethnic groups (Freidlmeier, Corapci, & Cole, 2011). Indeed, cultural variation can even occur within single individuals as they move through different cultural contexts (e.g., immigrants; Tamis-LeMonda et al., 2008) or through situations that emphasize and make salient divergent cultural models (Hong, Morris, Chiu, & Benet-Martinez, 2000).

Thus, the goal of Study 1 was to extend the study of cultural differences in emotion regulation beyond simple national-group differences. To do so, I first tested for *between-groups differences* in suppression and reappraisal, focusing both on national groups that varied in exposure to Western and East Asian culture—namely, American and Japanese participants—and on ethnic groups within a single nation that varied in exposure to Western and East Asian culture—namely, European American and East Asian American (i.e., of East Asian descent but living in the USA) participants. If the national-level findings of Matsumoto et al. (2008) were due to innate group differences, such as genes, East Asian Americans should not differ in their emotion regulation tendencies compared to East Asians in Japan; moreover, both East Asian groups should differ in similar ways from European Americans. However, if, as I argue, divergent self-models are the primary explanatory factor, national and ethnic-group differences in emotion regulation should be consistent with a cultural exposure hypothesis. In particular,

greater exposure to Western culture—and its strong emphasis on independence and authentic self-expression—versus East Asian culture—and its strong emphasis on interdependence and relationship harmony—should be associated with less use of suppression: European Americans should use suppression less frequently than East Asian Americans, who, in turn, should use suppression less frequently than East Asians in Japan. Furthermore, if, as I propose, culture-specific models of self mainly impact use of emotion regulation processes that create a discrepancy between inner emotion experience and outer emotional behavior, there should be small, if any, between-group differences in reappraisal, because reappraisal is an internally focused regulatory process, it primarily targets one’s construal of an emotional situation, and it changes all component of the emotional response in a commensurate manner.

Nonetheless, because it is still possible that East Asian Americans differ from East Asians in Japan for reasons other than divergent cultural exposure (e.g. genetic differences associated with immigration), I conducted a second, more stringent test of the cultural exposure hypothesis. In particular, I tested for *within-group differences* in reappraisal and suppression, focusing on a subsample of East Asian American participants who had immigrated to the USA. These individuals differed in the number of years they had lived in the USA, providing me with a more differentiated measure of Western and East Asian cultural exposure. Consistent with between-group comparisons, I predicted that the longer these East Asian Americans had lived in the USA—and thus the greater their exposure to Western culture and its strong emphasis on independence and authentic self-expression—the less they would use suppression; in contrast, I predicted that there would be no within-group differences in use of reappraisal.

Method

Participants

Participants (72% female; $M_{\text{age}} = 20$ years) were 173 European Americans, 195 East Asian Americans, and 164 East Asians who were born and living in Japan; 74 of the East Asian American participants were born in East Asia and had lived in the USA for 11 years ($SD = 5.7$) on average.

Measures

Use of suppression and of reappraisal were measured with the 10-item Emotion Regulation Questionnaire (ERQ; Gross & John, 2003), a brief and efficient research instrument that has been widely used in studies on individual differences in emotion regulation. The ERQ has been translated into more than 20 languages, and validation studies have shown evidence for consistent reliability, factor structure, and convergent and discriminant validity across multiple samples and nations (e.g., Abler & Kessler, 2009; Balzarotti, John, & Gross, 2010; Gross & John, 2003; John & Gross, 2004; Matsumoto et al., 2008). The ERQ defines a general reappraisal factor and a general suppression factor. The two scales tend to correlate close to zero, suggesting that they measure independent regulatory processes that individuals use to varying degrees. The ERQ items were carefully constructed to clearly describe the intended emotion regulation process and to avoid mentioning any confounding implications for affect, well-being, or social functioning; thus, the scales do not relate to measures of social desirability or intellectual functioning. An example suppression item is “I control my emotions by *not expressing them*”; an example reappraisal item is “I control my emotions by *changing the way I’m thinking about the situation I’m in*”. Participants rated their agreement with each item on scale from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*). The European American and East Asian American participants completed the standard, English version of the ERQ; alphas were .73 for suppression and .71 for

reappraisal. The Japanese participants completed a Japanese version of the ERQ; alphas were .67 for suppression and .69 for reappraisal.

Results

Between-Groups Differences in Suppression and Reappraisal

To test the hypothesis that greater exposure to Western versus East Asian culture, and presumably their divergent cultural models of self, would predict less frequent use of suppression, I conducted a univariate analysis of variance (ANOVA) with cultural group (European American vs. East Asian American vs. East Asian in Japan) as a between-groups factor and suppression as the dependent variable. As expected and shown in Figure 1 (bottom line), between-groups cultural differences varied as a function of exposure to Western versus East Asian culture (bottom line), $F(2, 531) = 18.55, p < .01, \eta^2 = .07$. Indeed, European Americans used suppression less frequently than East Asian Americans, $t(366) = 3.54, p < .01, d = .37$, who in turn used suppression less frequently than East Asians in Japan, $t(357) = 2.68, p < .01, d = .28$. In contrast, but also as predicted, there were no cultural group differences in reappraisal (top line), $F(2, 531) = 1.32, ns$.

Within-Group Differences in Suppression and Reappraisal

How did within-group cultural differences compare with between-groups effects? Consistent with the mean-level national-group and ethnic-group differences reported above, the longer East Asian Americans had lived in the USA, the less likely they were to use suppression as an emotion regulation process, $r = -.23, p < .05$; however, as predicted, the number of years that East Asian Americans had lived in the USA was not related to their use of reappraisal, $r = -.06, ns$.

Discussion

Study 1 findings were consistent with the hypothesis that greater exposure to the model of self prevalent in Western cultural contexts—which emphasizes the importance of authentically expressing one’s unique internal attributes, such as emotions—versus the model of self prevalent in East Asian cultural contexts—which emphasizes the importance of adjusting one’s behavior to maintain harmony in one’s important social relationships—is associated with less frequent use of suppression, an emotion regulation process that reduces emotional behavior while leaving emotion experience intact. Consistent with the hypothesis that culture-specific models of self should mainly impact processes that create a discrepancy between inner emotion experience and outer emotional behavior, there were no cultural group differences in the use of reappraisal, an internal regulatory process that involves reinterpreting the meaning of an emotional situation in early in the emotion-generative process and therefore does not create an inner-outer emotional discrepancy. Importantly, parallel findings emerged both between and within groups that differed in Western versus East Asian cultural exposure, suggesting that the observed effects were due indeed to cultural factors, such as cultural models of self, rather than to confounding factors associated with national and ethnic group membership, such as genetic background.

Study 2: The Effect of Priming American and East Asian Identity on Use of Suppression and Reappraisal

Study 1 found evidence among preexisting groups to support the hypothesis that culture-specific models of self lead to differential use of emotion regulation processes, especially for regulatory processes that create an incongruence between inner emotional experience and outer emotional behavior. Nonetheless, the correlational design of Study 1 limits the ability to make strong causal claims based on these results. In Study 2, I sought to provide a stronger

demonstration of causality by testing whether experimentally manipulating Western and East Asian cultural models would have effects on emotion regulation that were theoretically consistent with the national and ethnic-group differences observed in Study 1. To do so, I capitalized on the fact that cultural knowledge, including models of self and their associated values and norms, follow the same rules of acquisition and use as other forms of knowledge. In particular, recent work (e.g., Hong et al., 2000; Peng & Knowles, 2003; Wong & Hong, 2005) suggests that (1) individuals can acquire multiple, even conflicting versions of the same cultural knowledge structure; (2) only the most cognitively accessible and salient version of a specific cultural knowledge structure will guide an individual's thought and behavior at any given moment; and (3) the accessibility and salience of a cultural knowledge structure can be temporarily increased by the presentation of a semantically-related stimulus, an increasingly common experimental technique known as *cultural priming*.

Given that cultural knowledge operates in this manner, I reasoned that it should be possible to prime Western and East Asian cultural models of self, and thus experimentally manipulate the degree to which they can exert an influence on emotion regulation. If priming were to result in differential use of emotion regulation processes, it would demonstrate a causal link between culture-specific models of self and emotion regulation. In the present study, I primed Western and East Asian cultural models using a task originally devised by Peng and Knowles (2003). In particular, I asked bi-cultural East Asian Americans—that is, individuals who identified with both American and East Asian culture, and thus were especially likely to have acquired the divergent cultural models associated with these two cultural contexts—to reflect on their identity either as Americans or as East Asians. I then examined how the priming manipulation affected reported use of suppression and reappraisal.

I theorized that the primes would increase the cognitive accessibility and salience of related networks of cultural knowledge, including the models of self associated with Western and East Asian cultural contexts. I further hypothesized that this greater temporary cognitive accessibility and salience should affect subsequent emotion regulation in a manner consistent the primed cultural model. Consistent with Study 1 findings involving naturally occurring cultural groups—who should differ in the chronic accessibility of these divergent cultural models—I expected that East Asian American participants primed with their American identity—which should increase the accessibility and salience of values and norms emphasizing independence and authentic self-expression—would report less suppression use than would participants primed with their Asian identity—which should increase the accessibility and salience of values and norms emphasizing interdependence and relationship harmony. Because I propose that culture-specific models of self should primarily impact the use of regulatory processes that create a discrepancy between inner emotion experience and outer emotional behavior, I expected that the priming manipulation would not affect reports of reappraisal.

Method

Participants

Participants were 61 East Asian Americans (76% female; $M_{\text{age}} = 21$ years).

Materials

Cultural identity primes. Following Peng and Knowles (2003), American and East Asian cultural identity were primed by first asking participants to take a moment to recall a personal experience in which their American or East Asian identity was particularly apparent to them. Participants were then asked to spend several minutes reflecting upon and writing about several aspects of this experience: when and how old they were when the experience occurred;

what happened during the experience; and why the experience made their American or East Asian identity apparent to them.

Participants' written responses suggested the primes activated the intended cultural identity. As the following abbreviated example illustrates, participants who received the American prime wrote about situations involving their American identity:

I was 19 years old...when I was watching the World Cup...I cheered loudly and was proud of being American...I believe my experience made my American identity apparent because I was proud of the American team making it far and making great achievements.

In contrast, participants who received the East Asian prime wrote about situations involving their East Asian identity.

When I was 20 years old...I co-directed a Khmer Student coalition conference. It gave me a chance to find my roots... [and be] immersed in the history...it opened my eyes...[and] I learned to love my culture and appreciate my parents more.

Emotion regulation. Use of suppression and of reappraisal were measured using the ERQ. Alphas were .71 for suppression and .79 for reappraisal.

Procedure

Participants were run individually using a web-based survey program. To reduce demand effects, participants were first asked to complete approximately 20-minutes worth of filler questionnaires that were unrelated to the true purpose of the study. The survey program then randomly assigned participants to receive either the American or the East Asian identity prime. After participants had completed the priming task, they were asked to complete the measures of suppression and reappraisal.

Results and Discussion

Did Study 2 provide experimental evidence in support of the causal impact of Western and East Asian cultural models of self on use of emotion regulation processes? As expected and shown in Figure 2, East Asian American participants who received the American identity prime—which was theorized to activate the self-model prevalent in Western cultural contexts and its associated values and norms emphasizing independence and authentic self-expression—reported less suppression use than did participants who received the East Asian identity prime—which was theorized to activate the self-model prevalent in East Asian cultural contexts and its associated values and norms emphasizing interdependence and relationship harmony— $t(59) = 2.43, p < .05, d = .66$. Consistent with the idea that the causal impact of culture-specific models of self holds primarily for regulatory processes that create a discrepancy between inner emotional experience and outer emotion behavior, there were no priming effects on use of reappraisal, $t(59) = 1.28, ns$.

Study 3: The Effects of Western and East Asian Cultural Models on Judge Ratings of Context-Specific Emotion Regulation

Studies 1 and 2 provided converging naturalistic and experimental evidence to support the hypothesis that culture-specific models of self lead to Western and East Asian group differences in use of emotion regulation processes, particularly for processes that alter outer emotion expressive behavior without producing parallel changes in internal emotion experience. Nonetheless, these two studies, as well as all previous studies of cultural differences in emotion regulation, shared an important limitation—namely, that they were based on a single measure of suppression and reappraisal, the ERQ. The ERQ is a commonly used and well validated self-report measure of emotion regulation processes. However, relying solely on this research instrument leaves open the possibility that the observed cultural effects do not reflect actual

differences in real-world emotion regulation behavior. Why might that be the case? Most obviously, self-reports can be distorted by memory and judgmental biases (e.g., Oishi, 2002). Additionally, however, the ERQ measures use of suppression and of reappraisal in a relatively context-free, global fashion, a potential issue given that emotion regulation takes place most often in close relationship contexts (Gross, Richards, & John, 2006).

To help address these concerns, in Study 3, I sought to provide evidence for the effects of Western and East Asian cultural models on emotion regulation at a different level of analysis and with an alternate data source—namely, on use of suppression and of reappraisal during a self-disclosure task with a future close relationship partner, as rated by independent judges. In particular, I asked European American and East Asian American participants to write a brief letter introducing and describing themselves to a future roommate. To assess emotion regulation in this specific relational context, I then had independent judges read each participant's written self-disclosure and rate the degree to which that participant had used suppression and reappraisal during the self-disclosure task. Emotional self-disclosure is an important building block for the development of close relationships (Laurenceau, Feldman-Barrett, & Pietromonaco, 1998). However, consistent with the global self-report findings of Studies 1 and 2, I expected that participants' tendencies to suppress their emotions in this specific relational context would vary as a function of their exposure to Western versus East Asian cultural models of self, such that European Americans would be less likely than East Asian Americans to use this emotion regulation process. In contrast, I expected that there would be no differences in context-specific reappraisal.

Method

Participants

Participants (75% female; $M_{\text{age}} = 21$ years) were 45 European Americans and 59 East Asian Americans.

Materials

Self-disclosure task. The self-disclosure task was completed online. Participants were first asked to take a moment to “imagine you are about to move in with a new roommate whom you have not yet met and with whom you'll be living for the coming academic year,” and to consider the question, “How would you describe your personality, your feelings, and your favorite activities to this person?” Participants were then told to spend 10 minutes writing a letter to “your future roommate,” introducing and describing “yourself in your own words.” To help ensure participants would respond naturally and spontaneously, they were told, “write as quickly as the ideas come to you,” and, “correct spelling and grammar are not important.” Finally, to increase the likelihood participants would engage in authentic self-disclosure, the instructions also emphasized that participants' goal should be to “describe your personality so that your future roommate could read this description and get to know who you *really* are.” Participants' self-disclosures were on average 220 words in length ($SD = 103$).

Context-specific emotion regulation. Context-specific use of suppression and of reappraisal—that is, the extent to which participants used suppression and reappraisal during the self-disclosure task—were rated by three independent judges from the same university as the participants. Judges were blind to the design, hypotheses, and purpose of the study. To help prevent the judges from deducing these aspects of the study, judges completed ratings of suppression and reappraisal not only for the European American and East Asian American participants on which primary analyses were based, but also for additional participants from a

variety of other ethnic backgrounds (e.g., African Americans, Latinos/Hispanics, Middle Easterners, and South Asians).

Judges rated context-specific use of suppression and of reappraisal for each self-disclosure. After carefully reading a self-disclosure response written by a particular participant, judges rated their impression of that participant on a number of characteristics, including suppression and reappraisal, each measured with a prototypical item adapted from the ERQ for use in a third-person format (cf. Gross & John, 2003). The ERQ suppression item was “I control my emotions by not expressing them,” which past studies suggest is the core item of the ERQ Suppression scale (Gross & John, 2003). This item was reworded slightly to read, “This person controls their emotions by not expressing them.” Similarly, the core ERQ Reappraisal scale item, “I control my emotions by changing the way I think about the situation I’m in,” was reworded to read, “This person controls their emotions by changing the way they think about the situation they’re in.”

Judges rated their agreement with these two items on a scale from 1 (*Strongly Disagree*) to 15 (*Strongly Agree*). To index interjudge agreement, I computed coefficient alpha reliability treating the three judges as individual observations. Alpha for context-specific suppression was .81. As expected (Gross & John, 2003), context-specific reappraisal was harder to judge with excellent agreement; alpha for this measure was .69.

Preliminary Analyses

To help rule out the possibility that the judges’ ratings had been biased by ethnicity information potentially included in the written self-disclosures, I coded (0 = No, 1 = Yes) whether each self-disclosure included any explicit ethnicity information (e.g., “I come from a traditional Chinese family”). Reassuringly, self-disclosures from only three participants fell into this category. More important, the inclusion of explicit ethnicity information was not related to cultural background ($r = .04$, with 0 = East Asian American, 1 = European American), or to judge-rated suppression ($r = .13$) or reappraisal ($r = -.10$) in the self-disclosure task. Furthermore, I repeated all analyses excluding data from these three participants, and all findings remained the same.

I also considered the length of the self-disclosures as potential confounding factor; for example, East Asian Americans may have written shorter responses to the self-disclosure instructions. To rule out that confound, I computed the total number of words in each self-disclosure and correlated that word count index with cultural background and with the two context-specific emotion regulation measures. Word count was not related to cultural background ($r = .00$), context-specific suppression ($r = .12$), or context-specific reappraisal ($r = .04$), suggesting that differences in word length could not be responsible for any observed cultural differences in suppression or reappraisal in the self-disclosure task.

Results and Discussion

Were cultural differences in independent judge ratings of emotion regulation in a specific context where emotion is of particular importance, namely in a self-disclosure situation early in the acquaintanceship process, consistent with previous studies of cultural differences based on global self-report measures of emotion regulation? Indeed, as shown in Figure 3, when introducing and describing themselves to a future roommate, European Americans were less likely to use suppression than were East Asian Americans, $t(102) = 2.07, p < .05, d = .40$. In contrast, and also as expected, there were no cultural differences in context-specific use of reappraisal, $t(102) = 1.11, ns$. To summarize, then, the pattern of cultural differences found in Studies 1 and 2 also emerged in a specific relational context and was evident to independent

judges who had access only to the written self-disclosures of the participants. These findings provide the first nonself-report evidence to support the hypothesis that Western and East Asian cultural models differentially impact use of emotion regulation processes, suggesting that the pattern of cultural differences observed in the present research is not likely the result of self-report artifacts.

Study 4: The Effects of Western and East Asian Cultural Models on Peer Ratings of Suppression

Study 3 provided the first evidence based on a data source other than global self-reports to suggest that culture-specific models of self lead to Western and East Asian cultural differences in use of emotion regulation processes, particularly processes that create a discrepancy between inner emotion experience and outer emotional behavior, such as suppression. Nonetheless, the specific relational context examined in Study 3—an interaction with a future roommate—was not based on a real relationship. Moreover, it only sampled participants' emotion regulatory behavior in one particular situation.

I attempted to address these concerns in Study 4, focusing on cultural differences just in use of suppression. More specifically, I tapped a second nonself-report data source to assess participants' typical use of suppression across time and a wide range of contexts—reports from well-acquainted peers. Emotion regulation typically takes place in social situations (Gross, Richards, & John, 2006), so our interactions with others naturally give rise to information about their habitual emotion regulatory behavior. Therefore, peers who see an individual across time and a wide range of circumstances can provide an independent assessment of the individual's use of emotion regulation processes across time and situations (Gross & John, 2003). Of course, even the most intimate associate does not have access to all the situations in which someone regulates their emotions (e.g., when the individual is alone). Nevertheless, enough of an individual's emotional responding takes place in interpersonal settings that close acquaintances should have an adequate behavioral sample to judge that person's habitual tendencies to use suppression.

Method

Participants

Target participants (63% female; $M_{\text{age}} = 18$ years) were 95 European Americans and 58 East Asian Americans. The targets nominated 2-4 peers who knew them well, and provided each peer's email address. Peers were then contacted by email; to reassure peers that their responses would not be seen by target participants, peers were promised complete anonymity, and no identifying or background information about the peers themselves was collected. In total, peer reports were available from 392 peers. There were no cultural group differences in the number of peers who described each target participant ($M = 2.6$ peers), length of acquaintance between target and peer ($M = 2.6$ years), or peer ratings of relationship closeness or liking toward target participants.

Measures

Self-reports and peer reports of suppression were measured using the ERQ Suppression scale. Self-reports followed the standard ERQ format; alpha was .67. Peer-report items were worded in the third person (e.g., "X controls his/her emotions by not expressing them") and used the same 7-point agreement scale as self-reports. Peer ratings for each participant target were averaged at the item level, allowing me to compute the alpha reliability of the averaged peer ratings; this alpha was .82, suggesting that peers were able to reliably use the peer-report version of the ERQ Suppression scale.

Results and Discussion

Were peer-reported cultural differences in suppression consistent with the global self-report findings of Studies 1 and 2, and the context-specific judge-rating findings of Study 3? To test this possibility, I conducted a mixed-model ANOVA with cultural group as a between-participants factor and data source (self vs. peer) as a within-participant factor. The ANOVA revealed the expected main effect of cultural group, $F(1, 151) = 4.56, p < .05, \eta^2 = .03$. As Figure 4 shows, European Americans again used suppression less frequently than East Asian Americans. More important, however, there was no interaction of cultural group with data source, $F(1, 151) = 0.36, ns$, indicating that the cultural difference replicated in peer reports. Thus, Study 4 provided evidence from a third independent data source to support the hypothesis that Western and East Asian cultural models differentially impact use of emotion regulation processes.

Study 5: Testing Two Specific Mechanisms— Interdependent and Independent Cultural Models of Self

Studies 1-4 provided compelling evidence across multiple empirical approaches and data sources to support the hypothesis that culture-specific models lead to Western and East Asian group differences in use of emotion regulation processes, particularly processes that focus primarily on emotion expressive behavior, such as suppression. Nonetheless, all of these studies shared a key limitation, namely that they did not explicitly test, nor can their findings speak to, the cultural mechanisms that may explain these emotion regulation effects. For example, even though Studies 1-4 suggest strongly suggest that the divergent models of self prevalent in Western and East Asian cultural contexts resulted in the observed suppression differences, the empirical designs used in those studies cannot disentangle whether those differences in emotion regulation were driven primarily by the model of self prevalent in Western culture, the model of self prevalent in East Asian culture, or by both cultural models of self.

In Study 5, I took an initial step toward addressing this concern by testing the mediating effect of the interdependent model of self—which is more characteristic of East Asian than Western cultural contexts—and the independent model of self—which is more characteristic of Western than East Asian cultural contexts. Even though these two conceptions of self are often treated as opposite ends of a single dimension, research has shown that they are orthogonal and coexist to varying degrees within individuals (Singelis, 1994). Therefore, it is possible that interdependence and independence *both* mediate the cultural difference in suppression, or that one model of self has a *unique* explanatory effect.

How might each model of self separately lead to Western and East Asian cultural differences in suppression? The interdependent self is defined and validated primarily through important social relationships, so one of the imperatives in interdependent cultures is to maintain harmony in relationships. By extension, greater East Asian versus Western cultural exposure may lead to *more frequent* suppression because East Asian cultures are more concerned that emotion expression will interfere with *relationship harmony*. In contrast, the independent self is defined and validated primarily through internal attributes, such as emotions, so one of the imperatives in independent cultures is to authentically express these inner self-aspects. It is possible, then, that greater Western versus East Asian cultural exposure leads to *less frequent* suppression because Western cultures are more likely to view suppression as a threat to *authentic self-expression*.

How likely is each of these of these two hypotheses? On the surface, it seems plausible that East Asian culture's greater interdependent emphasis on relationship harmony could explain

the cultural difference in suppression. However, because greater interdependence is theorized to lead to increased sensitivity to specific situational demands, the effect of interdependence on suppression should be contextually variable. That is, greater interdependence should tend to lead to more suppression when doing so may facilitate harmony in one's important social relationships; less suppression when use of this emotion regulation process may interfere with harmony in important relationships; and have no effect on suppression when suppressing emotions has minimal implications for harmony in important social relationships. Thus, I posit that interdependence should not relate to global use of suppression. Given that a mediator and outcome variable must be associated in order for mediation to occur (Baron & Kenny, 1986), it follows, then, that interdependence should not mediate the Western versus East Asian cultural difference in use of global suppression.

In contrast, because the conceptualization of authentic self-expression valued in independent cultures essentially involves expressing one's true inner attributes regardless of situational constraints, I propose that greater independence should relate to less frequent global use of suppression, and thus should uniquely mediate the Western and East Asian cultural difference in use of this emotion regulation process.

Similar to Study 1, I tested these mediation hypotheses by adopting two distinct yet complementary empirical approaches. First, I used a between-groups operationalization of Western versus East Asian cultural exposure, namely cultural group membership, testing whether mean-level differences in European Americans and East Asian Americans' use of suppression would be mediated by variation in interdependence, independence, or both cultural models of self. To confirm between-group mediation findings, I then conducted a parallel analysis using a within-group operationalization of Western versus East Asian cultural exposure—the number of years that a subsample of East Asian Americans (i.e., immigrants to the USA) had lived in the USA. In particular, I tested whether the Study 1 finding that foreign-born East Asian Americans tend to use suppression less the longer they live in the USA would be explained by acculturation differences in interdependence, independence, or both cultural models of self. For the theoretical reasoning stated above, I predicted that independence, and not interdependence, would uniquely explain Western versus East Asian cultural differences in global suppression, and that the same pattern of mediation effects would emerge across both between-group and within-group mediation analyses.

Method

Participants

Participants (62% female; $M_{\text{age}} = 19$ years) were 156 European Americans and 185 East Asian Americans. The East Asian American subsample included 64 foreign-born individuals who had lived in the USA for an average of 8 years but differed considerably in how long they had been exposed to American culture ($SD = 5$).

Measures

Outcome variable: Suppression. Suppression was measured with the ERQ Suppression scale; alpha was .74.

Mediators: Interdependent and independent cultural models of self. The interdependent model of self and the independent model of self were measured with the Self-Constraint Scale (SCS; Singelis, 1994). The SCS consists of 12 interdependence items (e.g., "It is important for me to maintain harmony within the group") and 12 independence items (e.g., "My personal identity independent of others is very important to me"). Participants rated their

agreement with each item on a scale from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Alphas were .72 for interdependence and .68 for independence.

Results and Discussion

Between-Groups Mediation Effects

Do interdependence and independence *both* explain the between-groups Western-East Asian cultural difference in suppression? Or, as I argue, does one self-conception, namely the independent cultural model of self, have a *unique* explanatory effect? To test these hypotheses, I used a recently developed bootstrapping procedure that has the ability to evaluate the indirect effects of multiple mediators simultaneously and thereby ascertain their unique mediating effects (Preacher & Hayes, 2008). In particular, I used 1000 resamples and 95% bias corrected and accelerated confidence intervals (i.e., testing whether specific indirect effects were significantly different from zero at $p < .05$, two-tailed) to evaluate the indirect effects of Western versus East Asian cultural group membership (1 = East Asian American, 2 = European American) on suppression through both interdependence and independence, all in a single model.

The results of the mediation analysis are shown Figure 5. Consistent with Studies 1-4, European Americans were less likely than East Asian Americans to use suppression. Additionally, in line with past research on culture and the self (e.g., Markus & Kitayama, 1991), European Americans scored lower on interdependence and higher on independence than did East Asian Americans. As expected, however, whereas greater independence was associated with less use of suppression, interdependence was not, suggesting that only independence could explain the between-groups cultural difference in use of this emotion regulation process.

Consistent with this pattern of simple effects, the indirect effect of Western versus East Asian cultural group membership on suppression through interdependence was not significant (bootstrap point estimate = -.0052, 95% CI [-.0497, .0446]). However, the indirect effect through independence was significant (bootstrap point estimate = -.1316, 95% CI [-.2250, -.0572]), indicating independence indeed was a unique mediator. Finally, because the direct effect of cultural group membership on suppression was reduced to nonsignificance after taking into account the indirect effect of independence, findings showed that independence fully mediated this link.

Within-Group Mediation Effects

To test the robustness of the observed between-group mediation effects, I conducted a parallel within-group bootstrap analysis, this time operationalizing Western versus East Asian cultural exposure as the number of years that the subsample of foreign-born East Asian Americans had lived in the USA. As expected and Figure 6 shows, results closely replicated between-groups mediation findings. As in Study 1, the longer East Asian Americans had lived in the USA, the less likely they were to suppress their emotions. Additionally, the longer East Asian Americans had lived in the USA, the higher they scored on independence and the marginally lower they scored on interdependence. However, just as I found in the larger sample of European Americans and all East Asian Americans, greater interdependence was not associated with suppression, whereas greater independence was associated with less use of suppression. Again this pattern suggests that only independence could explain why this subsample of East Asian Americans used suppression less the longer they lived in the USA.

Consistent with this pattern of simple effects, the indirect effect of years lived in the USA on suppression through interdependence was not significant (bootstrap point estimate = -.0054, 95% CI [-.0246, .0016]), whereas the indirect effect through independence was (bootstrap point estimate = -.0127, 95% CI [-.0372, -.0012]), indicating indeed that independence was a unique

mediator. Finally, because the direct effect of years lived in the USA on suppression was no longer significant after taking into account the indirect effect of independence, the analysis showed that independence fully mediated this link.

In sum, two distinct but complementary tests of the mediating effects of the interdependent and independent cultural models of self revealed the predicted pattern of mediation. Findings were consistent with the interpretation that although greater exposure to Western versus East Asian culture leads to both lower levels of interdependence and higher levels of independence, it is only greater exposure to the independent model of self—which strongly emphasizes the authentic expression of one’s unique internal attributes, such as emotions—that in turn produces cultural differences in use of suppression.

General Discussion

Overall Summary

How and why do Western and East Asian cultures differ in their use of emotion regulation processes? Despite ethnographic portrayals of broad regulatory differences between these two cultural contexts, the five studies in the present dissertation suggest a more nuanced picture of Western and East Asian variation in emotion regulation. Studies 1 and 2 provided converging naturalistic and experimental evidence to suggest that greater exposure to and accessibility of Western versus East Asian cultural knowledge is causally linked to less use of suppression, but not reappraisal, as an emotion regulation process. Studies 3 and 4 suggested that this pattern of culture effects on emotion regulation was not simply a methodological artifact, documenting similar findings across multiple levels of analysis (e.g., global and context-specific use of emotion regulation processes) and multiple independent data sources (e.g., self-reports, ratings by independent judges, and reports from well-acquainted peers from individuals’ real-world social networks). Study 5 offered empirical support for one possible mechanism that may explain why people are less likely to suppress their emotions if they are enculturated in Western versus East Asian cultural contexts.

The consistency in findings across the five studies provides particularly compelling evidence for the hypothesis that Western and East Asian differences in cultural models of self lead to culture-specific patterns of emotion regulation, with cultural variation emerging most markedly for regulatory processes, such as suppression, that produce changes in outer emotional behavior without producing parallel shifts in inner emotion experience. In particular, because Western cultures are more likely than East Asian cultures to endorse a construal of the self as an independent entity that is defined by internal attributes, including emotions, Western cultures are also more likely to value the authentic expression of these unique internal aspects of self, and to discourage the use of behaviors that might interfere with this cultural imperative. Because the use of suppression prevents emotions from gaining full autonomy, this regulatory process interferes with the independent goal of open and authentic self-expression, and thus represents a potential barrier to the validation of the independent self. Therefore, suppression use is more common among individuals who more strongly endorse the independent model of self, such as European Americans and other Westerners, as compared to individuals who less strongly endorse this self-model, such as East Asians and East Asian Americans.

In contrast, reappraisal is an intrapersonal, cognitive emotion regulation process that focuses on changing one’s interpretation of an emotional situation before emotional response tendencies have been fully activated. Because reappraisal exerts its primary influence at this early stage in the emotion-generation process, this regulation process changes all the components of a subsequent emotional response in a similar fashion—for example, if reappraisal is used to

downregulate the subjective experience of anger, the behavioral expression of anger will also be downregulated as a downstream consequence—and thus does not create a discrepancy between inner experience and outer behavior. Therefore, reappraisal is relatively less consequential than suppression for the realization and validation of the self in either interdependent or independent cultural contexts. Because these two cultural models of self do not impact use of reappraisal, Western and East Asian cultures do not differ in use of this emotion regulation process.

Implications

The present research has important implications for the basic and applied studies of emotion, emotion regulation, and culture. First, findings from all five studies suggest that previously documented Western and East Asian cultural differences in emotional expression (e.g., Tsai et al., 2002; Tsai, Levenson, & McCoy, 2006) may be due not to inherent (e.g., genetic) differences between these groups. Rather, this cultural variation in emotional responding may reflect use of basic emotion regulatory processes—implying that the emotional response process may be a human universal.

One key result that emerged in Studies 1 and 5 was that the longer East Asian immigrants had lived in the USA—and had presumably been exposed to Western cultural model of self—the less frequently they used suppression. This within-group difference in emotion regulation both replicated and extended initial work that focused solely on between-group cultural differences in suppression (e.g., Matsumoto et al., 2007), suggesting that Western and East Asian differences in use of suppression is due to cultural learning and socialization processes rather than methodological artifacts or inherent differences between these cultural groups. More important, however, this result has important implications for how we understand the basic nature of individual differences in use of suppression as an emotion regulation process, namely that they are not fixed like personality traits but rather socially acquired tendencies that are learned and sensitive to individual development. That individual differences in suppression are learned, in turn, suggests the possibility that people suffering from emotion dysfunction (e.g., depression) associated with suppression can be *taught* to use more adaptive regulation strategies in order to more effectively manage their emotional lives. It also gives rise to a number of interesting developmental questions. For example, at what age do individual differences in suppression begin to emerge? Additionally, as with language learning, is there a “critical period” in which individual differences in suppression are particularly sensitive to learning beyond which changing one’s habitual tendencies to use suppression becomes much more difficult or even impossible?

The current studies also present one potential answer to an unresolved question in the burgeoning field of emotion regulation—namely, *why* individuals vary in their use of emotion regulation processes, even though some regulatory processes tend to be associated with generally negative outcomes (e.g., suppression), whereas other processes tend to be associated with generally positive outcomes (e.g., reappraisal). In particular, it appears that the precise cultural context into which people are enculturated and socialized plays a critical role in shaping the specific emotion regulatory goals (e.g., to authentically express emotions whenever possible) that those individuals develop and hold. The degree to which people use particular emotion regulation processes, then, is influenced by the extent to which regulation processes are consistent with those culturally influenced goals.

This research may also have broader societal implications. For instance, given the increasingly frequent interaction between individuals from Western and East Asian cultural contexts (especially the USA and China), improved understanding of how these cultures differ in

their use of emotion-regulatory processes should lead to fewer cultural misunderstandings and miscommunications surrounding emotions. This knowledge should be particularly beneficial for negotiations involving business, political, and military leaders—which often give rise to decisions that have wide ranging consequences for entire organizations and nations—in which individuals may need to gauge others internal states and reactions. These benefits should also be applicable to more everyday settings in contemporary American society. For example, the American educational system tends to reward students who assert themselves, actively engage in class activities, and express positive self-esteem, and to devalue students who are reserved, timid, or shy (Kim, 2002). However, the present dissertation suggests that values for the open expression of emotions such as interest, enthusiasm, and pride, may be specific to Western cultural contexts, thus putting students from East Asian cultural backgrounds at a disadvantage relative to their more mainstream American counterparts. The knowledge gained from the present research might therefore be used to develop methods of educational instruction in which public self-expression is not the primary criterion by which success is based, thus providing a learning environment that is likely to lead all students to feel comfortable rather than inadequate. Other important domains in which this knowledge might be profitably applied include the relationships of multicultural couples, cross-generational interactions in immigrant families, and clinical relationships involving physicians and patients from different cultural backgrounds. In all of these cases, I hope that the present findings might lead to a greater appreciation and tolerance for the wide variation in behavior and ways of being that exist across the human species.

Limitations and Future Directions

Valence and specific-emotion effects on Western and East Asian cultural differences in suppression. To improve understanding of how Western and East Asian cultures differ in their emotion regulation tendencies, and how cultural learning influences emotion regulation tendencies more broadly, the present studies focused primarily on cultural differences in the global use of suppression and reappraisal—that is, the tendency to use these regulatory processes to control emotions *in general*. This seemed a reasonable initial step given the complexity of the processes involved. However, as the context-specific emotion regulation findings of Study 3 suggest, focusing on emotion regulation solely at this broad level of abstraction ignores potentially important differences that may only be evident at more differentiated levels of abstraction.

Therefore, one important topic that future research should investigate is whether cultural difference in suppression vary depending on whether this regulatory process is used to regulate *negative emotion* or *positive emotion*. Why might the valence distinction be important? Research suggests that negative and positive emotion processes are relatively distinct and operate in unique fashion. For example, individual differences in mood are captured by the two major dimensions of Negative and Positive Affectivity (Tellegen, 1985; Watson & Tellegen, 1985), which are paralleled by two of the major facets of emotional expressivity, Negative and Positive Expressivity (Gross & John, 1997; 1998). More relevant to the present research, prior work on culture and values for emotion has found that negative emotions are generally considered undesirable, and that Western and East Asian cultures do not differ in this regard (Tsai, 2007); however, Western cultures are much more likely than East Asian cultures to place strong value and emphasis on positive emotions (Heine et al., 1999). Thus, it seems plausible that Western and East Asian cultural difference in suppression are quite substantial for positive emotions but less so, if at all, for negative emotions.

However, even testing for effects of emotion valence may not provide a complete account of how and why Western and East Asian cultures differ in use of suppression as an emotion regulation process. For example, a strict focus on the suppression of negative versus positive emotion may obscure potentially important differences among specific emotions within the same valence category. Past studies have shown that even though Western cultures value positive emotions in general more than East Asian cultures, this difference in emotion values is especially pronounced for positive emotions that highlight the *positive uniqueness* of the self (Eid & Diener, 2001; Heine et al., 1999). Thus, it seems quite possible that Western and East Asian cultural difference in suppression may vary even across emotions within the positive valence category, such that Westerners may be especially less likely than East Asians to suppress positive emotions that clearly signal individual achievement and personal success, such as pride (Tracy & Robins, 2004), as compared to more basic positive emotions, such as joy.

Indeed, there may even be important cultural variation in the way single positive emotions are suppressed across different contexts. For example, even though pride *in general* may be suppressed more in Western versus East Asian cultural contexts, this cultural difference may vary in size across *contextually-specific* forms of pride, such as *individual pride* (i.e., pride arising from one's personal accomplishments) and *collective pride* (i.e., pride arising from accomplishments by a larger collective to which one belongs, such as one's work group or family). Given Western culture's greater independent emphasis on positive uniqueness and authentic self-expression, individual pride should be a less frequent target of suppression by Westerners than East Asians. In contrast, East Asian culture's greater emphasis on interdependence and interconnectedness among group members should lead the Western and East Asian difference in the suppression of pride to be less pronounced, or possibly even reversed, for collective pride.

Western and East Asian cultural differences in use of other regulatory processes. Beyond focusing primarily on Western and East Asian cultural differences in global tendencies to regulate emotions, another limitation of the present research was its focus on the use of only two specific emotion regulation processes, suppression and reappraisal. Gross (2002) posits that there are at least five broad families of emotion regulatory processes. Therefore, an important task for future research will be to test whether important cultural differences emerge for other types of regulatory processes as well. For instance, a growing body of research has shown that East Asian thinking tends to emphasize the dialectical beliefs that the world is inherently contradictory and in constant flux (Spencer-Rodgers, Williams, & Peng, 2010). As a result, East Asians are more likely than Westerners to expect contradiction and change, predicting, for instance, that good events will be followed by bad events and vice versa (Ji, Peng, & Nisbett, 2001). This tendency toward greater dialectical thinking raises the possibility that East Asians may be more likely than Westerners to use forms of *attentional deployment*, a family of regulatory processes that involve shifting one's attention to different aspects of a situation to change its emotional impact (Gross, 2002). In particular, East Asians' dialectical reasoning style may lead them to focus their attention on opposing or contradictory aspects of emotional situations, for example, focusing on positive aspects of negative events, and focusing on negative aspects of positive events. Given Western culture's emphasis on positivity (Heine et al., 1999), Westerners may also be expected to focus on positive aspects of negative events. However, this emphasis on positivity should lead Westerners to focus only on the positive aspects, and not on the negative possible negative aspects, of positive events, resulting in a Western and East Asian cultural difference for positive situations. Assuming that use of attentional deployment would

lead to corresponding changes in emotion experience, such a pattern of cultural differences in the use of this regulatory process might explain why positive-emotion experience and negative-emotion experience tend to be negatively correlated in Western cultures, but positively correlated or not related at all in East Asian cultures (Perunovic, Heller, & Rafaeli, 2007; Schimmack, Oishi, & Diener, 2002). This pattern would also be consistent with recent work showing that Western and East Asian cultural differences in the experience of opposing emotions occur primarily in positive situations (Leu et al., 2010; Miyamoto, Uchida, & Ellsworth, 2010).

Mechanisms underlying Western and East Asian cultural differences in suppression. The experimental findings of Study 2 and mediation analyses in Study 5 suggest that the precise cultural mechanism that underlies the Western and East Asian difference in suppression is the independent cultural model of self and its emphasis on the authentic expression of one's unique internal attributes. Nonetheless, neither study directly manipulated or assessed values or norms concerning authentic self-expression. Additionally, independence is a broad, multifaceted construct: some views of independence emphasize self-expression, self-actualization, and personal uniqueness, whereas other views emphasize self-reliance, self-defense, and personal integrity (Snibbe & Markus, 2005). Thus, findings from the present dissertation cannot determine with absolute certainty whether values for authentic self-expression or some other facet of independence is responsible for the cultural difference in suppression. Future work might address this concern by experimentally manipulating values for authentic positive self-expression versus self-reliance, and examining the effect of these manipulations on emotion regulation. For instance, participants could be exposed to cultural products, such as magazine ads, that emphasize positive uniqueness or self-reliance. Alternatively, researchers could have participants read ostensible research articles suggesting that authentic self-expression or self-reliance is associated with better life outcomes. Using experimental approach such as these ought to prove especially useful in elucidating the specific cultural processes involved in shaping emotion regulation.

Consequences of Western and East Asian cultural difference in suppression. Past work suggests that not only do individuals vary widely in the particular processes that they use to manage and regulate their emotional lives, but these individual differences in emotion regulation crucially influence a wide variety of important adjustment outcomes, such as the experience of positive emotions, depression, and interpersonal closeness. Thus, in addition to further investigating *how* and *why* Western and East Asian cultures differ in use of emotion regulation processes, future work should examine the *consequences* of cultural differences in emotion regulation. For example, one well documented finding in the cultural psychology literature is that East Asians report lower self-esteem than Westerners (e.g., Heine et al., 1999). Nonetheless, the precise mechanism that underlies this self-esteem is not well understood. In light of the present findings, one possibility is that Western versus East Asian cultural difference in self-esteem may be explained, at least in part, by cultural differences in emotion regulatory processes. Specifically, past work has shown that greater habitual use of suppression is associated with less habitual experience of positive emotion (Gross & John, 2003). By extension, East Asians' greater tendency to use suppression in their everyday lives may, in turn, result in less positive-emotion experience. Because the experience of positive emotions, such as pride, is theorized to be the driving force behind high self-esteem (Brown & Marshall, 2001), East Asians' greater tendency to use suppression may indirectly cause them to experience lower self-esteem than Westerners.

Investigating emotion regulation differences among other cultures. To investigate cultural differences in emotion regulation, the present research focused on one particular cultural contrast, namely Western and East Asian cultural differences. This approach seemed a logical first step, as a great deal of prior research exists to suggest that there would be marked differences in emotion regulation across these two cultural contexts (e.g., Kim & Sherman, 2007; Markus & Kitayama, 1991). Nonetheless, future research should follow the example of recent studies in cultural psychology by investigating emotion regulation differences beyond just Western and East Asian cultural contexts. Such an expansion could include other national or ethnic groups, such as West Africans, who are more likely to claim more enemies than friends than are North Americans (Adams, 2005), and are thus possibly also less likely to regulate negative interpersonally focused emotions, such as anger or contempt. Alternatively, future studies could examine whether use of emotion regulation processes is shaped by differences in cultural factors associated with socioeconomic status (SES; e.g., Snibbe & Markus, 2005). For example, given that lower-SES individuals in the USA are less likely than higher-SES individuals to emphasize the value of expressing and expanding the influence of the self, differences in use of suppression between these two SES-based groups may mirror the differences observed between Western and East Asian cultures in the present research. By focusing on cultural contrasts involving cultural groups that vary on select cultural processes, future work can begin to delineate the various ways through which one's cultural context influences one's tendencies to regulate emotion.

Conclusion

Social interaction across cultural lines has become an increasingly necessary feature of our globalized world, and this trend is not likely to reverse anytime in the foreseeable future. In light of this fact, understanding how and why individuals of different cultural background differ in the ways they communicate, especially in terms of emotions, represents a pressing and practical concern. The present dissertation represents an initial step toward achieving this goal, demonstrating that differences between Westerners and East Asians are more nuanced than common folk conceptions and ethnographic accounts suggest: (1) they hold primarily for regulatory processes that create a discrepancy between inner emotion experience and outer emotional behavior (such as suppression); and (2) they are due primarily to the strong emphasis on independence and authentic self-expression in Western culture, rather than to the strong emphasis on interdependence and interpersonal harmony in East Asian cultures.

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Figures

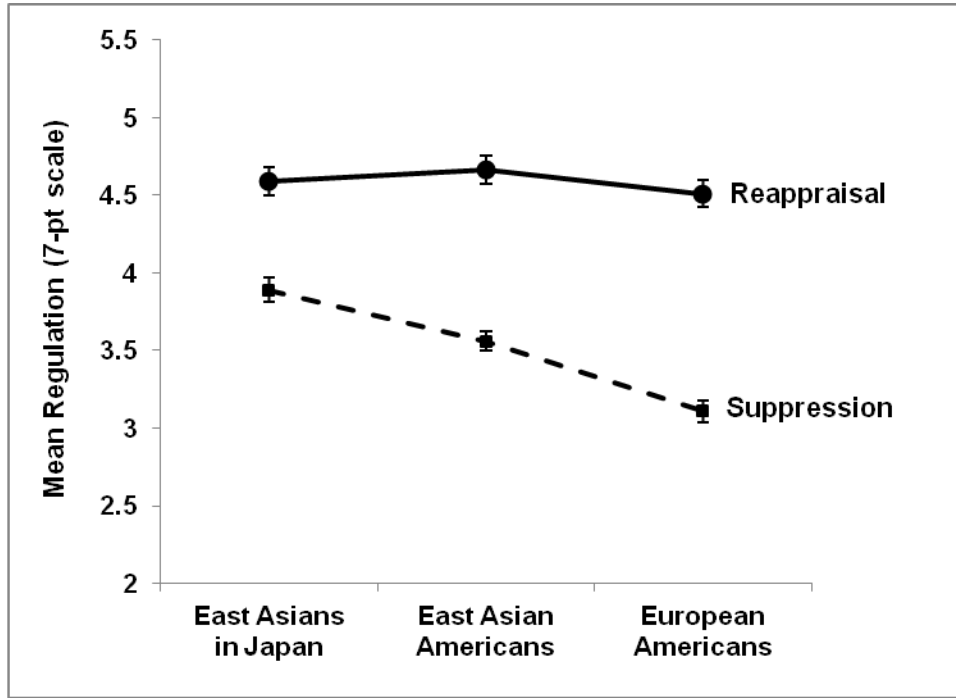


Figure 1. Study 1: Mean ERQ suppression and reappraisal shown for European Americans, East Asian Americans, and East Asians living in Japan.

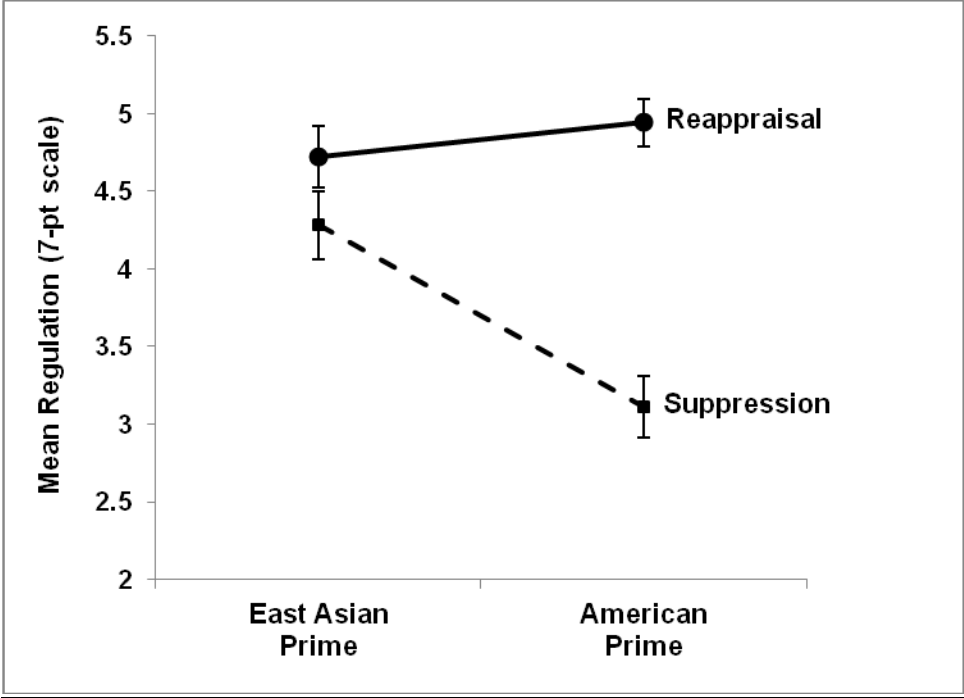


Figure 2. Study 2: Mean ERQ suppression and reappraisal shown for bi-cultural East Asian Americans whose East Asian identity or U.S. American identity has been primed.

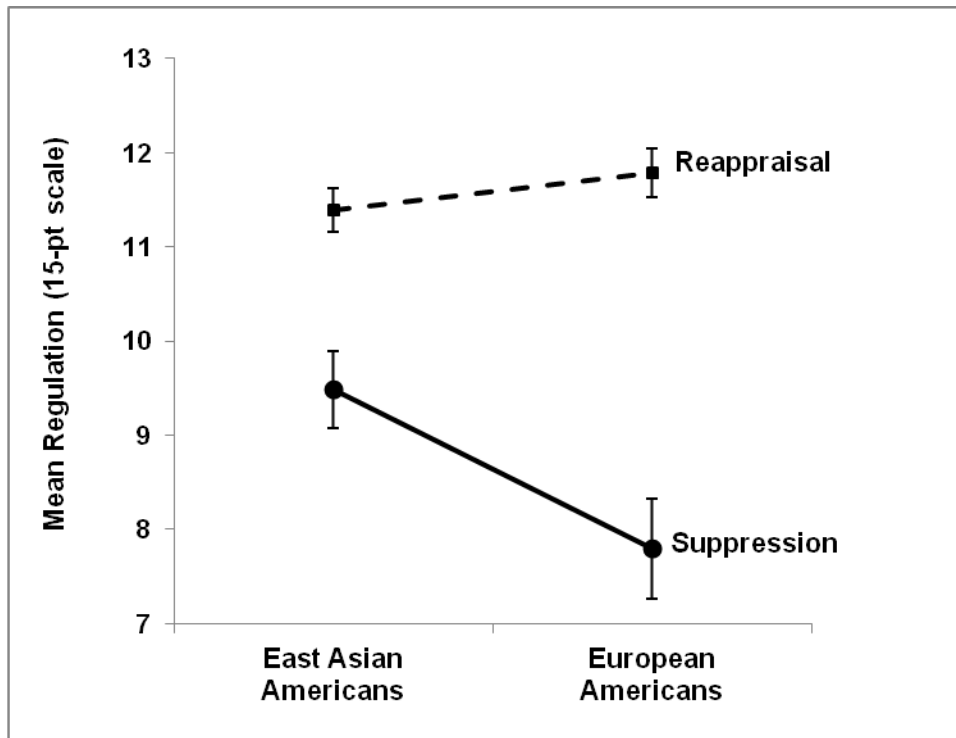


Figure 3. Study 3: Mean judge ratings of context-specific suppression and reappraisal for European Americans and East Asian Americans in a self-disclosure situation.

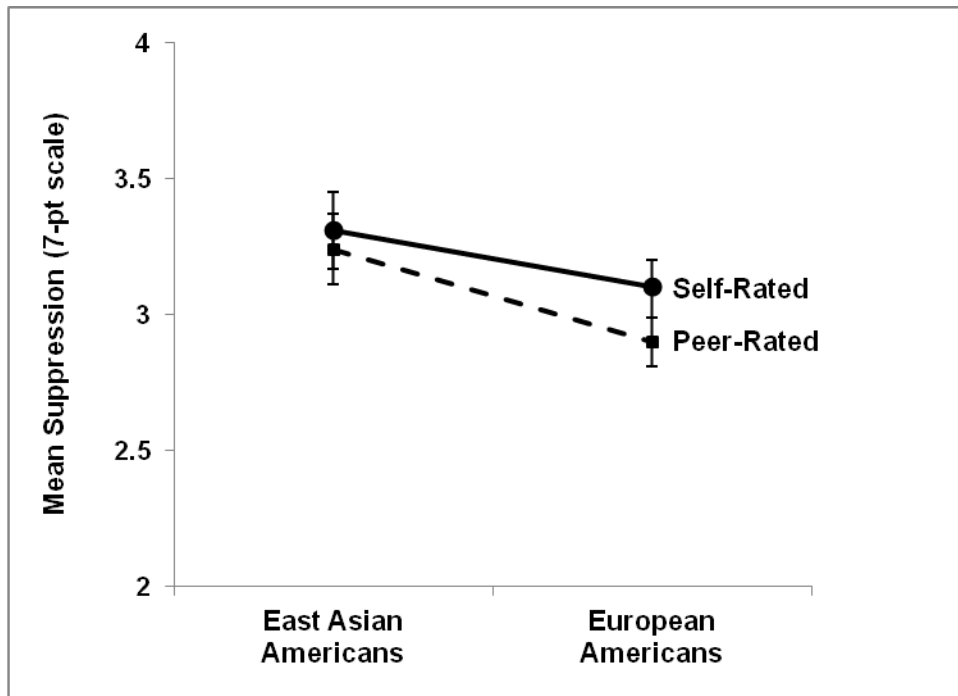


Figure 4. Study 4: Mean self-reported and peer-rated ERQ suppression shown for European Americans and East Asian Americans.

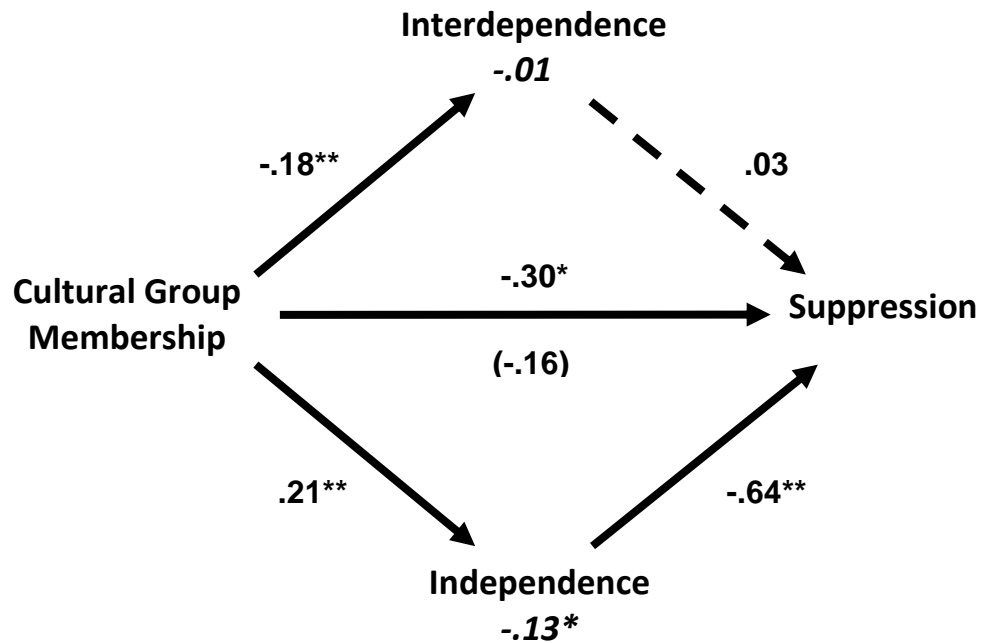


Figure 5. Study 5: Effects of cultural group membership (1 = East Asian American, 2 = European American) on suppression through interdependence and independence. Following Preacher and Hayes (2007), numbers represent unstandardized regression coefficients. Indirect effects (based on 1000 bootstrapped samples) are set in italics. Dashed lines indicate effects that were not significant. $**p < .01$. $*p < .05$.

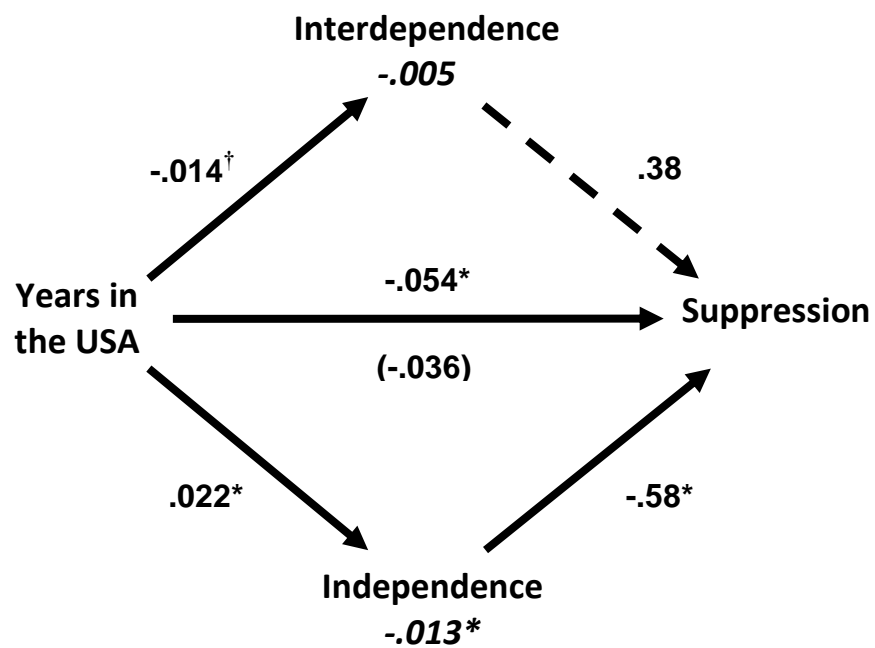


Figure 6. Study 5: Effects of years in the USA on suppression through interdependence and independence. Following Preacher and Hayes (2007), numbers represent unstandardized regression coefficients. Indirect effects (based on 1000 bootstrapped samples) are set in italics. Dashed lines indicate effects that were not significant. $**p < .01$. $*p < .05$. $^\dagger p < .10$.