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Wanting to Maximize the Positive and Minimize the Negative: Implications for Mixed Affective Experience in American and Chinese Contexts

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Abstract

Previous studies have demonstrated that European Americans have fewer mixed affective experiences (i.e., are less likely to experience the bad with the good) compared to Chinese. In this paper, we argue that these cultural differences are due to "ideal affect," or how people ideally want to feel. Specifically, we predict that people from individualistic cultures want to maximize positive and minimize negative affect more than people from collectivistic cultures, and as a result, they are less likely to actually experience mixed emotions (reflected by a more negative within-person correlation between actual positive and negative affect). We find support for this prediction in two experience sampling studies conducted in the U.S. and China (Studies 1 and 2). In addition, we demonstrate that ideal affect is a distinct construct from dialectical view of the self, which has also been related to mixed affective experience (Study 3). Finally, in Study 4, we demonstrate that experimentally manipulating the desire to maximize the positive and minimize the negative alters participants' actual experience of mixed emotions during a pleasant (but not unpleasant or combined pleasant and unpleasant) television clip in the U.S. and Hong Kong. Together, these findings suggest that across cultures, how people want to feel shapes how they actually feel, particularly people's mixed affective experience.

Keywords

Ideal Affect; Culture; Chinese; Mixed Emotions; Dialecticism

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[3]Study 1 findings did not vary as a function of pleasantness ratings of the activity they were engaged in when they were signaled.

[22]In this study, participants (28 Americans, 23 Hong Kong Chinese) watched the same three television clips (pleasant, unpleasant, combined pleasant-unpleasant) as in Study 4, and rated their ideal affect during different moments while they were watching each clip. Across cultural groups, the desire to maximize the positive and minimize the negative was smaller in response to the unpleasant and combined clips (there were no differences between the conditions) compared to the pleasant clip, suggesting that actual experience does alter ideal affect to some degree. Interestingly, this effect varied by cultural group----although there was a main effect of clip, Americans always valued positive more than negative, whereas Hong Kong Chinese valued positive as much as negative in response to the combined clip, valued negative more than positive in response to the unpleasant clip, and valued positive more than negative in response to the pleasant clip (see Supplemental results).

> "I really try to feel happy everyday. I hate being sad or frustrated; it's so much harder to get through the day with those negative feelings."
>
> -European American student

> "… it is impossible to be happy forever. I think life is sometimes up and down. I want to have both balanced sadness and happiness."
>
> -Hong Kong Chinese student

Previous studies have demonstrated that people differ in the affective states that they value and ideally want to feel (their "ideal affect"), and that people's ideal affect differs from their "actual affect," or how they actually feel (Tsai, Knutson, & Fung, 2006; Koopmann-Holm & Tsai, 2014). Fewer studies, however, have examined how people's ideal affect shapes their actual affective experiences (Chim, Tsai, Hogan, & Fung, 2013; Eid & Diener, 2001; Mauss, Tamir, Anderson, & Savino, 2011; Miyamoto, Ma, & Petermann, 2014; Riediger, Schmiedek, Wagner, & Lindenberger, 2009; Scollon, Howard, Caldwell, & Ito, 2009; Tamir & Ford, 2012a). For instance, in the above quotes, the European American student wants to feel positive but not negative, whereas the Hong Kong Chinese student wants to feel a balance of both positive and negative emotions. Does *wanting* to experience positive and negative affect make individuals more likely to actually experience a mix of positive and negative affect? Is the European American student less likely to actually experience mixed positive and negative affect than the Hong Kong Chinese student? To answer these questions, we conducted four studies that employed survey, experience sampling, and experimental methods to examine how the desire to maximize positive states and minimize negative states affects people's actual experiences of positive and negative affect in the U.S. and China. We predicted that because European Americans want to maximize positive experiences and minimize negative experiences more than Chinese, European Americans are less likely to have mixed affective experiences (i.e., experience the bad with the good) than Chinese. Prior to discussing these studies, we present affect valuation theory, the framework motivating this research.

Affect Valuation Theory

According to affect valuation theory (Tsai et al., 2006; Tsai, 2007), how people ideally want to feel is distinct from how they actually feel. Whereas actual affect is a response or tendency to respond in a particular way, ideal affect is a goal or a state that people consciously or unconsciously pursue. Whereas actual affect tells a person about her current state ("How am I feeling?"), ideal affect tells a person how to interpret or evaluate that state ("Is this a good feeling? Is it right?"). Indeed, across a variety of studies, we have observed only modest correlations between reports of actual affect and ideal affect (Sims, Tsai, Koopmann-Holm, Thomas, & Goldstein, 2014; Sims & Tsai, 2014; Tsai, 2007; Tsai, Knutson, & Fung, 2006; Tsai, Louie, Chen, & Uchida, 2007; Tsai, Miao, & Seppala, 2007; Tsai, Miao, Seppala, Fung, & Yeung, 2007), and structural equation modeling has revealed that actual affect and ideal affect are distinct constructs (Tsai, et al., 2006; Koopmann-Holm et al., 2014).

Furthermore, affect valuation theory (AVT) predicts that although cultural factors shape both ideal and actual affect, they shape ideal affect more than actual affect. Because culture teaches people what is good, right, moral, and virtuous (Shweder, 2003), culture teaches people what *emotions and feelings* are good, right, moral, and virtuous. Thus, people value specific affective states not only because they like or enjoy the experience of those states, but also because they perceive them as useful, effective, and valuable. AVT also posits that while temperamental factors shape both ideal and actual affect, temperamental factors shape actual affect more than ideal affect (see Tsai, 2007). Across a variety of studies using different methods, we have gathered strong empirical support for these claims, and have shown that cultural differences in ideal affect produce cultural differences in consumer product preferences, conceptions of well-being, and evaluations of people (Sims & Tsai, 2014; Sims et al., 2014; Tsai, 2007; Tsai et al., 2006; Tsai, Louie, et al., 2007; Tsai, Miao, & Seppala, 2007; Tsai, Miao, Seppala, et al., 2007; Tsai, Chim, & Sims, in press).

However, several gaps in the literature remain. First, previous studies focus primarily on differences in the value placed on high vs. low arousal positive affective states (i.e., excitement vs. calm). Thus, the degree to which cultures differ in how much people want to feel positive relative to negative states remains largely unexplored. Second, because most research has focused on distinguishing ideal affect from actual affect, and demonstrating how ideal affect predicts behavior above and beyond actual affect (e.g., Sims, et al., & Goldstein, 2014; Tsai, Miao, et al., 2007), the *relationship* between people's ideal affect and their actual affect, or how people's ideal affect influences their actual affect has received relatively little attention. Of the handful of studies that have examined the links between ideal and actual affect (e.g., Chim, et al., 2013; Eid, et al., 2001; Riediger, et al., 2009; Scollon, et al., 2009; Mauss, et al., 2011; Miyamoto, et al., 2014; Tamir et al., 2012a), most have focused on state or trait positive and negative affective experiences separately. Here, we examine how people's ideal affect shapes their likelihood of actually experiencing mixed emotions over time (i.e., the within person association between momentary actual positive and negative affect).[1]

Cultural Differences in Wanting to Maximize the Positive and Minimize the Negative

Decades of research have documented cultural differences in individualism-collectivism, which result in cultural differences in conceptions of the self as independent vs. interdependent (e.g., Hofstede, 1984; Markus & Kiatyama, 1991; Morling & Lamoreaux, 2008; Oyserman, Coon, & Kemmelmeier, 2002; Triandis 1989). Most research has compared individualism in Western contexts such as the United States with collectivism in

[1]Scholars vary in the terms they use to describe “mixed” emotions or “mixed” affective experiences, including “ambivalence,” “co-occurrence of positive and negative affect,” “dialectical emotions,” “structure/bipolarity/relation of positive and negative affect,” “emotional complexity,” “affective synchrony,” and “poignancy.” Although not perfect, we settled on the term “mixed” for several reasons: (1) it is easy to understand (unlike “structure/bipolarity/relation of positive and negative affect”), (2) it avoids confusion with dialectical ways of thinking (unlike “dialectical emotions”), (3) it is not limited to the simultaneous experience of positive and negative affect in response to the same stimuli (unlike “co-occurrence” or “affective synchrony”), (4) it has no value connotation (unlike “ambivalence,” which sounds pejorative in American contexts, and “emotional complexity,” which is suggestive of emotional intelligence) and (5) it does not assume simultaneous experience of specific types of positive or negative emotions, such as happiness and sadness (unlike poignancy).

East Asian contexts such as China. One meta-analysis revealed that Chinese especially differ from European Americans in terms of individualism and collectivism, even compared to other East Asian groups (Oyserman, et al., 2002). Therefore, in this paper, we focus on U.S. forms of individualism (or independence) and Chinese forms of collectivism (or interdependence).

Whereas the United States emphasizes the needs of the individual over those of the group (i.e., are more "individualistic"), China emphasizes the needs of the group over those of the individual (i.e., are more "collectivistic"). As described by Oyserman and colleagues (2002), this difference likely derives from an amalgamation of factors including American-Chinese differences in political history and orientation, prominent religious beliefs, economic systems, and settlement histories. For instance, the founding fathers of United States were "voluntary settlers," or Protestants who responded to religious persecution and economic hardship by envisioning a better life in a far and unknown place. As several scholars have argued, these voluntary settlers may have created a culture in which being a good person means being self-reliant and autonomous; being influential (i.e., expressing one's desires, preferences, and beliefs and changing one's environment to be consistent with them); being ambitious, and competent; as well as feeling good about oneself and differentiating oneself from others in positive ways (i.e., construing the self as "independent;" Kitayama, Conway, Peitromonaco, Park, & Plaut, 2010; Kitayama, Ishii, Imada, Takemura, & Ramaswamy, 2006; Varnum, 2014; Heine, Lehman, Markus & Kitayama, 1999; Sedikides, Gaertner, & Vevea, 2005).

In contrast, China has a relatively less recent history of voluntary settlement than the United States, and therefore Chinese, especially those who lived in central cities in China, had to learn to adjust to and cope with whatever negative circumstances they faced. This may have propagated a culture in which being a good person means being dependent on and connected to others; being accommodating to others (i.e., being aware of others' expectations and adjusting one's desires, preferences, beliefs, and actions to be consistent with those expectations); respecting social norms and traditions; accepting one's status in the hierarchy, as well as feeling critical of oneself when one fails to meet social expectations and norms, and acting to correct one's behavior to be in line with those expectations and norms (i.e., having an "interdependent self;" Heine, Takata, & Lehman, 2000; Markus et al., 1991; Triandis 1989).

We predict that American-Chinese differences in the value placed on independence versus interdependence are related to American-Chinese differences in the desire to maximize positive and minimize negative states (see Figure 1). Although across cultural contexts, people want to feel more positive than negative, the more people value independence (vs. interdependence), the more motivated they should be to maximize positive feelings and minimize negative feelings. In part, this may be because of the differences in voluntary settlement described above: the founding fathers of the United States (and other developers of the frontier) responded to their negative circumstances in Europe by escaping the bad and pursuing the good in the American frontier. This may have cultivated a culture that values maximizing the good and minimizing the bad. In addition, because being a good independent self means differentiating oneself from others in positive ways, individuals

from these contexts want to stand out in a positive light, which also means wanting to feel good and not feel bad.

In contrast, the *less* people value independence vs. interdependence, the less motivated they should be to maximize the positive and minimize the negative. Although they may still want to feel positive more than negative overall, there should be a smaller difference in their desire for positive compared to negative states. In part, this may be because without a history of voluntary settlement and motivation to escape negative circumstances, individuals in these contexts may be more accepting of negative states. In addition, individuals who value interdependence over independence should want to fit into the group and stand out less. Feeling too much positive emotion may cause individuals to stand out, overshadow others, and engender jealousy, which would threaten group cohesion and interpersonal harmony. On the other hand, feeling more negative emotion may help individuals attune to others' when they are in need, which again, would facilitate interpersonal harmony and help individuals fit in with other members of the group (Miyamoto & Ma, 2011).

Although scholars have proposed that being more independent vs. interdependent leads people to want to maximize the positive more and minimize the negative less (Heine, Kityama, & Lehman, 2001; Joshanloo & Weijers, 2014; Kityama et al., 2000; Lee & Seligman, 1997; Leu et al. 2010; Markus, Uchida, Omoregie, Townsend, & Kitayama, 2006; Uchida, Norasakkunkit, & Kitayama, 2004; Uchida & Kitayama, 2009), no studies have directly tested this hypothesis by examining the link between independent and interdependent values and how people ideally want to feel.

Cultural Differences in Mixed Affective Experience

> If it makes you happy, it can't be that bad.
>
> If it makes you happy, then why hell are you so sad?
>
> -Sheryl Crow, “If it makes you happy”

> When everyone's happy, I weep.
>
> I laugh for no reason
>
> It's seeing you stay that makes me laugh
>
> Knowing you will never belong to me, tears fall
>
> -Mang Chuen Chang, “Profound and sweet”

We predict that cultural differences in the desire to maximize the positive and minimize the negative not only exist, but also influence people's actual experience of positive relative to negative affect, or mixed affective states. In the literature, “mixed” emotions have been measured in a variety of ways. We focus on the relationship (i.e., within-person association) between positive and negative affective experience, and therefore, when we use the term “mixed,” we are referring to the tendency for people to experience positive and negative states at the same time, over a period of time. Individuals with a more negative within-person association between actual positive and negative affect (i.e., the more positive an individual feels, the less negative they feel), are less inclined to have “mixed” emotional

experiences. Specifically, we predicted that the more people want to feel positive relative to negative affect, the less likely they would be to experience mixed emotions over time (i.e., the more negatively correlated their positive and negative affective experience would be).

Indeed, a significant body of research has documented cultural differences in mixed affective experience (Aaker, Drolet, & Griffin, 2008; Bagozzi, Wong, & Yi, 1999; Hong & Lee, 2010; Hui, Fok, & Bond, 2009; Kim, Seo, Yu, and Neuendorf, 2014; Kitayama, Markus, & Kurokawa, 2000; Leu et al., 2010; Miyamoto, Uchida, & Ellsworth, 2010; Miyamoto & Ryff, 2010; Perunovic, Heller & Rafaeli, 2007; Schimmack, Oishi, & Diener, 2002; Schimmack, 2009; Scollon, Diener, Oishi, & Biswas-Diener, 2005; Shiota, Campos, Gonzaga, Keltner, & Peng, 2010; Spencer-Rodgers, Peng, & Wang, 2010; Williams & Aaker, 2002; see Spencer-Rodgers, Williams, & Peng, 2010 for review). Survey studies reveal that global reports of positive and negative affect are typically negatively correlated among American samples (i.e., the more positive individuals feel, the less negative they feel) but are typically unrelated or even positively correlated among East Asian samples (i.e., the more positive they feel, the more negative they feel) (Bagozzi, et al., 1999; Kitayama, et al., 2000; Scollon et al., 2005; Shiota, et al., 2010). Similarly, experience and situation sampling studies reveal that although momentary reports of positive and negative affective experience are typically negatively correlated across cultures (Hui, et al., 2009; Leu, et al., 2010; Perunovic, et al., 2007; Schimmack, et al., 2002; Scollon et al., 2005; Yik, 2007), the magnitude of this negative association is consistently greater for North American compared to East Asian samples (Leu et al., 2010; Perunovic, et al., 2007; Schimmack et al., 2002; Scollon et al., 2005; Schimmack, 2009). For instance, in one experience sampling study of European and East Asian (mostly Chinese) Canadian undergraduates, the average within-person correlation between reports of positive and negative affective experience was -.25 for European Canadians and -.12 for East Asian Canadians. These cultural differences were not due to cultural differences in response style (i.e., cultural differences in how people respond to rating scales in general; e.g., Chen, Lee, & Stevenson, 1995). Although different East Asian samples were included in the studies described above, the vast majority comprised Chinese (Bagozzi, et al., 1999; Hong & Lee, 2010; Hui, et al., 2009; Leu, et al., 2010; Spencer-Rodgers, Peng, & Wang, 2010; Williams & Aaker, 2002; Yik, 2007). To build on the previous literature, we focused on Chinese samples in the present work.

This literature, however, is limited in several ways. First, most of the findings are based on college student samples, and therefore, it is unclear whether cultural differences generalize to older, community samples. Second, previous studies have either compared different ethnic groups (e.g., European Americans vs. Chinese Americans) or different national groups (Americans vs. Chinese), but few have done both (e.g., European Americans vs. Chinese Americans vs. Hong Kong Chinese vs. Beijing Chinese), which is important for understanding variation within cultural contexts. Finally, although scholars have proposed that cultural differences in wanting to maximize positive and minimize negative affect more shape affective experience (e.g., Heine, et al., 2001; Kityama et al., 2000; Lee & Wu, 2008; Leu et al. 2010; Markus, et al., 2006; Schimmack, et al., 2002; Spencer-Rodgers, Peng, et al., 2010; Spencer-Rodgers, Peng, Wang, & Hou, 2004; Uchida, et al., 2004; Uchida et al., 2009), no studies have directly tested this hypothesis (although see Miyamoto, et al., 2014 for an examination of how the utility of negative emotion shapes affective experience).

Cultural differences in mixed emotions have been primarily associated with dialectical view of the self or Asian dialectic philosophies (e.g., Buddhism). “Dialecticism” refers to a general tolerance for and expectation of contradiction, change, and balance (Peng & Nisbett, 1999); a “dialectical view of the self” refers to perceiving contradiction, change, and balance in one's own characteristics and behavior. Having a dialectical view of the self has been directly linked to mixed affective experience (Hui, et al., 2009; Kim, et al., 2014; PSpencer-Rodgers, Peng, et al., 2010). For instance, using situation sampling, in which participants report how they recalled feeling during a pleasant or unpleasant event, participants with a more dialectical view of the self reported a greater mix of both positive and negative affect during pleasant events than did those with a less dialectical view of the self (Hui, et al., 2009). Further, when American and Chinese participants were primed with a dialectical view of the self (i.e., were asked to think and write about personal experiences comprised of contradictory circumstances), they evaluated their experiences as a mix of both positive and negative affect more than those in the control condition (PSpencer-Rodgers, Peng, et al., 2010).

In these studies, a dialectical view of self was only weakly if at all related to independent-interdependent self-construal, which was not found to be associated with mixed affective experience (Hui et al., 2009). Schimmack, Oishi, & Diener (2002) observed in a 38-nation study that Asian dialectical philosophy (as assessed via prevalence of Buddhism, Hinduism, Confucianism) was moderately correlated with individualism-collectivism. However, whereas Asian dialectical philosophy predicted the magnitude of the correlation between the frequency of positive and negative affect at the national level (i.e., nations with greater prevalence of Buddhism, Hinduism, and Confucianism had less negative correlations between positive and negative affect or more mixed affective experience), individualism-collectivism did not. In contrast, using situation sampling, Miyamoto and colleagues (2010) found that differences in the co-occurrence of positive and negative affect between Japanese and Americans during self-success situations was partially mediated by self-agency (i.e., Japanese felt more responsible for others and therefore, felt more mixed during self-success situations).

Thus, despite previously theorized links between mixed emotions and individualism-collectivism/independence-interdependence, the evidence is inconclusive, and it remains unclear how independence-interdependence may influence mixed emotions in American and Chinese contexts. This may be because many measures of independence-interdependence only assess self-construal rather than broader values. Furthermore, it may be that the value placed on being independent vs. interdependent distally influences mixed emotions by shaping ideal affect, which may have a more proximal influence on mixed emotions. Here we hypothesize that the value placed on independence (vs. interdependence) shapes ideal affect; ideal affect shapes mixed affective experience, and the influence of ideal affect on mixed affective experience is largely distinct from that of dialectical view of self (see Figure 1).

We propose that ideal affect has a direct influence on mixed affective experience that is distinct from that of dialectical view of self in part because of the differences between dialectical view of self and ideal affect. While a dialectical view of the self refers to

cognitive processes, ideal affect refers to emotional processes. While a dialectical view of the self refers to how someone perceives themselves actually to be (i.e., their thoughts, behaviors), ideal affect refers to how someone ideally wants to be (i.e., their values, goals), and therefore, has a *motivational* component that a dialectical view of self, as assessed, does not. Finally, while a dialectical view of self refers to acceptance of contradiction and balance within the self more generally, ideal affect refers to people's beliefs about specific feelings (in this case, positive and negative affect). In Studies 3-4, we compared ideal affect to dialectical view of self because this is the aspect of dialecticism that has been examined most in the literature, with a direct established link to mixed emotions.

The Role of Ideal Affect in Cultural Differences in Mixed Affective Experience

There are several ways in which people's ideal affect may alter their actual affect. First, affect valuation theory predicts that people consciously or unconsciously choose to engage in situations, interact with people, and use products based on the likelihood that those situations, people, and products will help them feel how they want to feel (Koopmann-Holm et al., 2014; Sims, Tsai, et al., 2014; Sims, et al., in press; Tsai, 2007; Tsai, et al., in press; Tsai, Miao, Seppala, et al., 2007). Thus, the more people want to feel positive and the less they want to feel negative states, the more they may engage in situations that elicit only positive states and the less they may engage in situations that elicit negative ones. For example, college students who want to maximize their positive states and minimize their negative states more may select courses based on how much fun (and how little stress) they will have in the class. Conversely, students who want to maximize feeling positive and minimize feeling negative less may take more challenging courses that may be less fun and produce more stress. As a result, the more people want to maximize positive and minimize negative states, the more likely they may be to actually experience positive without negative states (e.g., fun without stress).

Second, people may focus on specific aspects of a situation that are consistent with how they ideally want to feel. Thus, the more people want to feel positive and the less they want feel negative, the more they may focus on the positive and avoid focusing on the negative in response to a particular event. For example, when earning an A on an exam, the more individuals want to maximize positive and minimize negative states, the more likely they may be to focus on their own accomplishments, which would augment their positive affect and diminish their negative affect, and the less likely they may be to consider how badly those who did poorly feel, which would increase their negative affect while they are experiencing positive affect. Indeed, emotional goals have been linked to attention towards positive versus negative emotional stimuli (Grossmann, Ellsworth, & Hong, 2012; Isaacowitz, 2006). For example, Russian university students who tended to value negative experiences (e.g., brooding) actually spent more time viewing negative than positive images on a computer screen (Grossmann et al., 2012).

A third possibility is that people modulate their affective experiences to be in line with how they ideally want to feel. People who want to maximize positive and minimize negative affect may be more likely to savor positive states and dampen negative states (resulting in

more positive without negative affect) after they occur (cf. Miyamoto & Ma, 2011). For instance, people placed in confrontational situations were found to amplify feelings of anger more and happiness less than people placed in collaborative situations (Tamir & Ford, 2012b), presumably because people value anger more in confrontational situations than in collaborative ones. People who do not value negative affect may also be more likely to engage in hedonic mood regulation when they experience failure. Indeed, Miyamoto and colleagues (2014) observed that after receiving a bad grade, European Americans wanted to up-regulate their positive mood and down-regulate their negative mood more than Asian Americans, which was explained by differences in the valuation of negative affect.

Although we do not examine these possible mechanisms in the present studies, they provide the basis for our prediction that how people ideally want to feel, specifically their desire to maximize the positive and minimize the negative, influences their actual experience of positive relative to negative affect, or mixed emotions.

The Present Studies

To test our hypotheses, we conducted four studies that collectively address the limitations described above. In the first two studies, we used survey and experience sampling methods in a sample of Chinese American and European American community adults (Study 1) and in a sample of European American, Chinese American, Beijing Chinese, and Hong Kong Chinese college students (Study 2) to examine: (1) whether cultural differences in the desire to maximize the positive and minimize the negative exist, and if so, whether they are mediated by cultural differences in valuing independence vs. interdependence, and (2) whether cultural differences in mixed affective experience exist (as indexed by the within-person association between actual positive and negative affect), and if so, whether they were mediated by cultural differences in the desire to maximize positive and minimize negative affect. To our knowledge, these are the first cross-cultural studies to: (1) assess both momentary actual and ideal affect using experience sampling methodology, (2) include a community adult sample (Study 1), and (3) compare two distinct groups within each culture (i.e., European Americans and Chinese Americans in the US with Hong Kong and Beijing Chinese in China) (Study 2). In the third study, we conducted a survey study to examine whether the desire to maximize positive and minimize negative affect was related to dialectical view of the self in American and Hong Kong Chinese samples. In Study 4, we experimentally manipulated the desire to maximize positive and minimize negative affect in a sample of American and Hong Kong Chinese college students to examine its influence on mixed affective experience under controlled conditions (in the lab) and in response to standardized stimuli (i.e., emotional television clips).

Study 1: Does Ideal Affect Mediate Mixed Affective Experience Among European American and Chinese American Community Adults?

Hypotheses

We predicted that: (1) European Americans would value positive relative to negative affect (i.e., want to maximize the positive and minimize the negative) to a greater degree than Chinese Americans, (2) cultural differences in ideal affect would be mediated by cultural

differences in independent (vs. interdependent) values, (3) European Americans would be less likely to experience mixed emotions than Chinese Americans, and (4) cultural differences in mixed emotions would be mediated by the degree to which people valued positive more than negative affect.

Study 1 Method

Participants—One hundred and thirty-seven adults (age M = 49.5 years, SD = 17.6 years; range = 20-79 years; 69 European Americans, 68 Chinese Americans; 50% female) from the San Francisco Bay Area were recruited from a larger community sample that had previously participated in a study of "emotions in daily life" (Tsai, Sims, Fung, & Jiang, 2014). There were no cultural group differences in age, $t(135) = -0.35$, $p = 0.730$, or the percentage of participants who were female, χ^2 (1, N = 137) = 0.01, $p = 0.932$. Eight participants refused to participate in the study due to its time-intensive nature. Participants received $100 for participating in the study.

Given tremendous variability within cultural groups, we recruited participants using specific cultural criteria to ensure that participants were sufficiently oriented to American and/or Chinese culture, as in our previous work (Tsai, Ying, & Lee, 2000). *European Americans* were required to: (a) be currently living in the U.S., (b) have been born and raised in the U.S., (c) have parents who were born and raised in the U.S., and (d) have ancestors from Western and Northern Europe. *Chinese Americans* were required to: (a) be currently living in the U.S., (b) have been primarily raised in a Chinese country or the U.S., and (c) have parents who were born and raised in China, Hong Kong, or Taiwan. To ensure that we recruited European Americans and Chinese Americans who differed in their cultural orientation, participants completed the General Ethnicity Questionnaire (described below). European Americans were more oriented to American culture (M = 3.75, SD = 0.50) than Chinese Americans (M = 3.24, SD = 0.57), $t(133) = 5.48$, $p < 0.001$, and Chinese Americans were more oriented to Chinese than American culture (Chinese GEQ M = 3.54, SD = 0.54), D= 0.26, SE = 0.12, $t(65) = 2.17$, $p < 0.05$.

In addition, 1/3 of participants were required to be high school-educated (i.e., did not have more than a high school degree), and 2/3 were required to be college educated (i.e., to have at least a college degree) stratified by culture to minimize the possibility that any cultural differences were due to differences in SES (Snibbe & Markus, 2005). Participants were also screened for major psychopathology with the PRIME-MD (Spitzer, Williams, & Linzer, 1995) and for cognitive impairment with the Mini-Mental Status Examination (Folstein, Folstein, & McHugh, 1975). Individuals who reported any psychiatric symptoms or showed any evidence of cognitive impairment were excluded from participating in the study.

Instruments—Measures were translated into Chinese and back-translated into English using methods established by Brislin (1980), as in our previous work.

[2]With one exception, the other SVS subscales (i.e., mastery vs. harmony, mastery vs. hierarchy, intellectual autonomy vs. embeddedness) did not mediate cultural differences in valuing positive relative to negative affect. We did not consider affective autonomy because of some conceptual overlap between this scale and ideal positive affect. Egalitarianism vs. embeddedness did have a similar effect on ideal affect as did mastery vs. embeddedness; Because we did not have any a priori hypotheses about egalitarianism, however, we are reluctant to interpret the findings.

Cultural Orientation: As part of a larger survey study conducted approximately two months before, all participants completed the General Ethnicity Questionnaire-American version (GEQ-A). As described by Tsai and colleagues (2000), participants rated 38 items pertaining to their social affiliation, activities, attitudes, exposure, food, and language use and proficiency (e.g., "When I was growing up, I was exposed to American culture"). In addition, to ensure that Chinese American participants were moderately oriented to Chinese culture, they completed the Chinese version of the General Ethnicity Questionnaire (GEQ-C), which asked participants to rate items that were similar to those of the GEQ-A, but used Chinese culture as the reference culture (e.g., "When I was growing up, I was exposed to Chinese culture"). Overall orientation to Chinese culture and orientation to American culture scores were created by calculating the average response to the GEQ-C and GEQ-A (after reverse-scoring relevant items), respectively. Internal consistency estimates were good for both the GEQ-A (European American $\alpha = .87$; Chinese American $\alpha = .86$) and GEQ-C (Chinese American $\alpha = .86$).

Valuing Independence vs. Interdependence: To assess endorsement of independent vs. independent values, participants completed the Schwartz Values Survey (SVS; Schwartz, 1992). Participants rated the importance of 57 values using a scale from -1 = "opposite of what I value" to 7= "extremely important." Based on previous research assessing mastery and control as an aspect of American independence (Kitayama, Karasawa, Curhan, Ryff, & Markus, 2010), we calculated an independent value score using seven items from the SVS mastery subscales. These items reflected the desire to prioritize one's own goals over those of the group and to alter one's circumstances to be consistent with one's feelings, desires, and preferences: influential (having an impact on people and events), independent (self-reliant, self-sufficient), ambitious (hard-working, aspiring), choosing own goals (selecting own purpose), capable (competent, effective, efficient), successful (achieving goals), and self-respect (belief in one's own worth) (European American $\alpha = .74$, Chinese American $\alpha = .77$). Based on other research assessing social embeddedness as an aspect of East Asian interdependence (Owe, et al., 2013), we calculated an interdependent value score using eight items from the SVS embeddedness subscale. These items reflected the desire to prioritize the goals of the group over one's own goals and to alter one's feelings, desires, and preferences to be consistent with those of the group: politeness (courtesy, good manners), reciprocation of favors (avoidance of indebtedness), respect for tradition (preservation of time-honoured customs), self-discipline (self-restraint, resistance to temptation), obedient (dutiful, meeting obligations), devout (holding to religious faith & belief), family security (safety for loved ones), and accepting my portion in life (submitting to life's circumstances) (European American $\alpha = .71$, Chinese American $\alpha = .72$). To assess the value placed on independence relative to independence and to control for individual differences in scale use, we calculated the within-person difference between independent and interdependent value scores.

Momentary Ideal and Actual Affect: We used experience sampling to assess momentary ideal and actual affect. Participants were asked to carry a Palm Pilot with them for seven days. We adapted the Experience Sampling Program (Barrett & Barrett, 2005) for the purposes of our study. The program signaled participants five randomly selected times a day

(within a 12-hour window specified by the participant). Participants were told that they could ignore the signals if they did not want to be disturbed.

For each sampling occasion, participants were asked to rate on a 5-point scale, ranging from 1 = *Not at all* to 5 = *Extremely*, how they felt at the moment prior to being signaled to assess momentary actual affect (e.g. "How happy are you?"). Participants were then asked to rate how much they ideally wanted to feel those same states at that moment, using the same 5-point rating scale used to assess momentary ideal affect (e.g. "How happy would you ideally like to feel?"). We chose affective states based on the Affect Valuation Index (AVI; Tsai, et al., 2006). Because it would be too cumbersome and intrusive to ask participants to rate all 54 items (27 actual, 27 ideal) from the AVI at each moment they were paged, we asked participants to rate nine items (sampling the octants of the affective circumplex: anxious, angry, activated, enthusiastic, happy, calm, quiet, bored, sad) for momentary actual affect, and the same nine items for momentary ideal affect. Thus, during each sampling occasion, participants made 18 ratings. Because we were interested in positive and negative states only, we excluded from our analyses "quiet" and "activated," which indexed low and high arousal, respectively.

Participants also rated how pleasant or unpleasant was the activity in which they were engaged at the time they were signaled, using a seven point scale ranging from 1 = *Extremely Unpleasant* to 7 = *Extremely Pleasant*. Across cultural groups, participants reported engaging in an unpleasant activity (ratings less than 4) only 10% (*SD* = 10.7, range = 0 – 53%) of the time. This is consistent with findings from other experience sampling studies (e.g., Scollon et al., 2005). Thus, the vast majority of ratings were made during neutral and pleasant activities.

As in our previous work, we were interested in between person differences in ideal affect. Therefore, we calculated mean levels of momentary ideal positive and negative affect across sampling occasions for each participant. During the sampling period, we first calculated the mean for each item (e.g., momentary ideal enthusiastic) across all sampling occasions for the week and then aggregated the means for the three ideal positive items (calm, enthusiastic, happy) and the means for the four ideal negative items (anxious, bored, angry, sad), respectively. We calculated the same aggregates for momentary actual positive affect and momentary actual negative affect. Internal consistencies[4] were moderate to high across cultures (Ideal Positive: European American α = .88, Chinese American α = .84; Ideal Negative: European American α = .82, Chinese American α = .91; Actual Positive: European American α = .79, Chinese American α = .65; Actual Negative: European American α = .87, Chinese American α = .76). We then calculated a difference score between ideal positive and ideal negative affect for each participant to estimate the relative value placed on positive relative to negative affect. We also calculated a difference score between actual positive and negative affect to assess whether there were cultural differences in the actual experience of positive relative to negative affect.[5]

[4]Because ideal negative was highly skewed, we calculated ordinal coefficient alphas based on a two-step polychoric correlation matrix. We used this approach for reliability estimates of all affect aggregates across studies.

Procedure—As described above, participants were asked to carry a Palm Pilot with them for seven days. Our procedures were based on Carstensen et al.'s (2000) experience sampling study of adults across the life span. Each time participants were signaled, they were asked to complete the measures of momentary actual and ideal affect as well as other questions that were not the focus of the present study. On average, participants responded to 30.55 (SD = 4.37) out of 35 signals.[6] Chinese Americans were given the option of completing the questionnaires in Chinese or English. Twenty-seven Chinese Americans (40%) completed the survey instruments in Chinese.[7]

Study 1 Results

We first assessed the effect of culture on the degree to which people valued positive more than negative affect (i.e., wanted to maximize the positive and minimize the negative) and whether this effect was mediated by independent vs. interdependent values. Then, we assessed whether there were cultural differences in mixed affective experience (i.e., the within-person association between momentary actual positive and negative affect). Finally, we examined whether momentary ideal affect mediated cultural differences in mixed affective experience. In all of our analyses, we controlled for age, gender, and level of education.

Hypothesis 1: Cultural Differences in Ideal Affect—To examine the effect of culture on ideal affect, we conducted an analysis of covariance (ANCOVA) in which we entered culture (European Americans, Chinese Americans) as the between-subjects factor and the mean difference between momentary ideal positive and negative affect as the dependent variable. We included age as a covariate to control for age differences in ideal affect (Tsai, Sims, et al., 2013; Scheibe, English, Tsai, & Carstensen, 2012).

Consistent with Hypothesis 1, analyses revealed a significant effect of culture on ideal affect, F (1, 132) = 32.16, p < .001, η_p^2 = .196. European Americans valued positive more than negative affect ($M_{Ideal\ Pos\text{-}Neg}$ = 2.59, SE =.09) to a greater degree than did Chinese Americans ($M_{Ideal\ Pos\text{-}Neg}$ = 1.90, SE =.09; see Figure 2, top).[8] We found no main effect of culture on actual affect, F (1, 132) = 1.81, p = .181, η_p^2 = .014. Across cultural groups, individuals experienced positive affect more than negative affect (European Americans $M_{Actual\ Pos\text{-}Neg}$ = 1.45, SE =.08; Chinese Americans $M_{Actual\ Pos\text{-}Neg}$ = 1.30, SE =.08).

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[5]As in our previous work, we examined specific positive and negative affective states (i.e., high arousal positive [HAP], low arousal positive [LAP], high arousal negative [HAN], low arousal negative [LAN]). Because the associations between different types of positive and negative affective states (i.e., HAP-HAN, HAP-LAN, LAP-HAN, LAP-LAN) yielded a similar pattern of results as those for general positive and negative states (results are available upon request) in Studies 1 and 2, we collapsed across different positive states and across different negative states because correlations between these general aggregates were more reliable.

[6]Chinese Americans (M = 29.78, SE = .52) responded to more pages than European Americans (M = 31.32, SE = .52). However, number of pages was not a significant covariate in our analyses and did not alter findings.

[7]We found a significant effect of language on ideal affect, F (1, 63) = 21.18, p < .001, in which the difference between ideal positive and negative affect was smaller for Chinese Americans completing the survey in Chinese (M = 1.31, SE = .15) than those completing it in English (M = 2.27, SE = .12). While there was not a significant total effect of language on mixed emotional experience, B = 0.17, SE = .12, t (62) = 1.29, p = .171, there was a significant indirect effect of language on mixed emotions through ideal affect, Sobel's z = 2.67, p = .008. However, ethnic differences in mixed affective experience remained when controlling for language. Due to the uneven distribution of Chinese vs. English language surveys, language was excluded from the main analyses.

[8]In all of the analyses, we use the difference score between ideal positive and ideal negative as our dependent variable for parsimony; however, findings are the same when we examined mean levels of momentary ideal positive affect and mean levels of momentary ideal negative affect as separate variables. See Supplementary Materials for results.

Hypothesis 2: Cultural Differences in Ideal Affect Mediated By Independent vs. Interdependent Values—To examine whether valuing independence more than interdependence mediated the effect of culture on ideal affect, we conducted mediation analyses using Hayes' (2014) SPSS macro, model 4. Three Chinese Americans and one European American did not complete the SVS and therefore were excluded from the following analyses. We estimated the indirect effect of culture (European Americans = 0, Chinese Americans = 1) on ideal affect through valuing independence vs. interdependence and bias-corrected standard errors based on 1,000 bootstrapped resamples. We included as covariates the mean difference between momentary actual positive and negative affect to ensure findings were not due to overlap with actual affect, age, gender, and education.

In line with the results above, there was a significant effect of culture on the mean difference between momentary ideal positive and negative affect, $B = -0.60$, $SE = .12$, $t = -5.06$, $p < .001$. There was also a significant effect of culture on the value placed on independence vs. interdependence, $B = -0.62$, $SE = .17$, $t = -3.57$, $p < .001$, such that European Americans valued independence vs. interdependence ($M = 1.05$, $SE = .12$) to a greater degree than did Chinese Americans, who valued them similarly ($M = 0.42$, $SE = .13$). Above and beyond the effect of culture, the more people valued independence over interdependence, the more they wanted to feel positive over negative affect, $B = 0.11$, $SE = .06$, $t = 1.81$, $p = .073$.[9] Moreover, the effect of culture was significantly reduced when including independent vs. interdependent values in the model, $B = -0.53$, $SE = .12$, $t = -4.32$, $p < .001$, and the indirect effect of culture on ideal affect through valuing independence vs. interdependence was significantly greater than zero (indirect effect = -.067, $SE = .043$, *95% CI* [-.180, -.002]). Thus, cultural differences in how much people want to maximize the positive and minimize the negative are due at least in part to how much they value independence vs. interdependence.

Hypothesis 3: Cultural Differences in Mixed Affective Experience—We conducted multilevel modeling using HLM 7.01 software (Raudenbush, Bryk, Cheong, Congdon, & du Toit, 2011) in order to estimate simultaneously the within-person association between actual positive affect and negative affect and the between-person effect of culture on this association, and to adjust for within-person error variance. At level 1, we regressed momentary actual positive affect onto momentary actual negative affect (group-centered; i.e., centered ratings around each person's mean). We used actual positive affect as the dependent variable because it was more normally distributed than negative affect. At level 2, we entered culture and all covariates[10] (participants' age, education, gender) grand-centered (i.e., centered around the sample mean). Group-centering actual negative affect at level 1 sets each person's mean actual negative affect to be equal to 0 across the sample, so we also included participants' mean actual negative affect across sampling occasions at level

[9]As indicated by Hayes (2009), individual paths in a mediation model are not required to be statistically significant in order to estimate the indirect effect of an independent variable on a dependent variable through a mediator variable.

[10]Consistent with previous research, HLM analyses revealed that the negative association between positive and negative affect was significantly attenuated with increasing age, $B = 0.005$, $SE = .002$, $t(131) = 2.20$, $p = .030$, among women (vs. men), $B = .22$, $SE = .07$, $t(131) = 2.99$, $p = .003$, and among those with only a high school education (vs. those with a college education), $B = .15$, $SE = .08$, $t(131) = 1.81$, $p = .073$. Sobel's test also indicated a significant indirect effect through ideal affect for age ($z = 2.42$, $p = .016$), but not gender ($z = 1.60$, $p = .109$) or education ($z = 1.40$, $p = .160$).

2 to estimate the intercept (mean actual positive affect) and slope (association between momentary positive and negative affect) while partialling out between person differences in actual negative affect, as suggested by Hofmann & Gavin (1998). This allowed us to examine the effect of culture on the within-person association between momentary actual positive affect and actual negative affect above and beyond individuals' mean levels of positive and negative affect. We used this same approach for all multilevel analyses across studies. There were no significant interactions between culture and each of the covariates and thus these terms were not included in the final model. The level 1 and level 2 equations for the final model are shown below.[11]

Level-1 Model—Momentary *Actual Positive Affect*$_{ij}$ = β_{0j} + β_{1j}*(Momentary *Actual Negative Affect*) + r_{ij}

Level-2 Model—β_{0j} = γ_{00} + γ_{01}*(Age_j) + γ_{02}*($Gender_j$) + γ_{03}*($Education_j$) + γ_{04}*(*Overall Mean Actual Negative Affect*$_j$) + γ_{05}*($Chinese\ American_j$) + u_{0j}

β_{1j} = γ_{10} + γ_{11}*(Age_j) + γ_{12}*($Gender_j$) + γ_{13}*($Education_j$) + γ_{14}*(*Overall Mean Actual Negative Affect*$_j$) + γ_{15}*($Chinese\ American_j$) + u_{1j}

Across the entire sample, the within-person association between actual positive affect and actual negative affect was negative and significantly different from zero, B = -0.50, SE = .04, t(131) = -12.93, p < .001. However, as predicted by Hypothesis 2 and consistent with previous work, there was a significant effect of culture on the strength of this association, B = 0.46, SE = .07, t(131) = 6.29, p < .001. Specifically, Chinese Americans showed a less negative association between actual positive and actual negative affect (M = -0.27, SE = .06) than did European Americans (M = -0.72, SE = .05, Figure 2, bottom).

Hypothesis 4: Cultural Differences in Mixed Affective Experience Mediated By Ideal Affect—We then included ideal affect at level 2 and found that the greater the difference between ideal positive and negative affect (i.e., the more participants wanted to feel positive relative to negative affect), the lower the likelihood of experiencing mixed emotions, B = -0.19, SE = .05, t(130) = -4.10, p < .001. This relationship was consistent across cultures. Moreover, when we included ideal affect in the model, the effect of culture was reduced, B = 0.32, SE = .08, t(130) = 4.12, p < .001. Sobel's test indicated a significant indirect effect of culture through ideal affect, z = 3.32, p < .001. Thus, in support of Hypothesis 3, ideal affect accounted for a significant portion of cultural variation in mixed affective experience.

We also examined whether valuing independence vs. interdependence at the between person level was associated with mixed affective experience at the daily level. To do so, we created a model regressing positive affect onto negative affect at level 1, and culture, age, education, mean actual negative affect, and the value placed on independence vs. interdependence (grand-mean centered) at level 2. Consistent with previous research, valuing independence

[11]For the final model across cultures, the random intercept effect was 0.18 (SD = 0.43), χ^2(131) = 3189.55, p < .001, and the random slope effect was 0.13 (SD = 0.35), χ^2(131) = 557.58, p < .001.

vs. interdependence was not directly associated with mixed affective experience, $B = 0.04$, $SE = .04$, $t\ (126) = 0.89$, $p = .376$. Thus, while valuing independence vs. interdependence was associated with ideal affect, it was not directly associated with mixed affective experience.

Study 1 Discussion

In support of Hypotheses 1 and 2, we observed cultural differences in the extent to which people valued positive more than negative affect, and these differences were mediated by cultural differences in independent vs. interdependent values. In support of Hypotheses 3 and 4, cultural differences emerged in the relationship between momentary actual positive and negative affect, and were partially mediated by momentary ideal affect. The more people wanted to maximize the positive and minimize the negative, the less mixed were their affective experiences. Valuing independence vs. interdependence, however, was not directly related to mixed affective experience.

These findings are the first to show that cultural differences in ideal affect shape the relationship between momentary reports of positive and negative affect in a sample of community adults across the life span. However, this study was limited to a sample living in the United States. Thus, in Study 2, we assessed whether these findings emerged when comparing college student samples living in the U.S. and China.

Study 2: Does Ideal Affect Mediate Mixed Affective Experience Among American and Chinese College Students?

In Study 2, we compared two cultural groups living in the United States (European Americans and Chinese Americans) to two cultural groups residing in China (Hong Kong Chinese and Beijing Chinese). We chose these latter two groups because there are two competing predictions about how they might differ. One prediction is that because Hong Kong was under British rule for half a century, Hong Kong Chinese may value independence vs. interdependence more than Beijing Chinese, and therefore, should have less mixed affective experience than Beijing Chinese. An alternative prediction is that Beijing Chinese value independence vs. interdependence more than Hong Kong Chinese, and therefore, should have less mixed affective experiences compared to Hong Kong Chinese. Indeed, Oyserman et al. (2002) observed that Beijing Chinese were more similar to European Americans in individualism than were Hong Kong Chinese. Similarly, Talhelm et al. (2014) observed that Chinese in Beijing were relatively more independent vs. interdependent than Chinese in other areas due to a higher historical prevalence of wheat farming (which purportedly cultivates independence) as opposed to rice farming (which purportedly cultivates interdependence). And yet a third possibility is that because both groups are Chinese, they do not differ in their ideal affect or their mixed affective experience. To minimize variability in terms of age and occupation within each group, we focused on college students.

Study 2 Hypotheses

We predicted that: (1) European Americans would value positive affect more than negative affect to a greater extent than Chinese Americans, who would value positive affect more than negative affect to a greater extent than Hong Kong Chinese and Beijing Chinese, (2) cultural differences in ideal affect would be mediated by valuing independence vs. interdependence, (3) European Americans would be less likely to experience mixed emotions than Chinese Americans, and Chinese Americans would be less likely to experience mixed emotions than Hong Kong and Beijing Chinese, and (4) cultural differences in mixed emotions would be mediated by cultural differences in ideal affect. We were agnostic as to how Hong Kong Chinese would differ from Beijing Chinese given the possible outcomes described above.

Study 2 Method

Participants—A total of 352 university students (71 European American, 89 Chinese American, 96 Hong Kong Chinese, and 96 Beijing Chinese; 51% female; age range: 18 to 25 years old [M = 20.11, SD = 1.42]) were recruited for a study on "emotions in daily life." There were no group differences in gender, χ^2 (2, N = 352) = 0.58, p = .901. The sample ranged in age from 18 to 25 years old (M = 20.11, SD = 1.42). There was a significant difference between groups in age, F (3, 348) = 3.71, $p < 0.05$, with Hong Kong Chinese being slightly older (M = 20.46, SD = 1.15) than both Beijing Chinese (M = 19.85, SD = 1.07) and Chinese Americans (M = 19.92, SD = 1.60). European Americans did not differ in age (M = 20.21, SD = 1.78) from any group. Participants were recruited from top and middle tier universities in the San Francisco Bay Area in the United States, Hong Kong, China, and Beijing, China. European American, Chinese American, and Hong Kong Chinese participants were recruited via class announcements, advertisements, fliers, and personal contacts. Beijing participants were recruited through school counselors (who regularly met with students about academic and personal issues). Participants were paid 100 U.S. dollars or the Chinese equivalent as compensation for their participation in the study.

We used the same specific cultural criteria for European Americans and Chinese Americans as in Study 1 to ensure that participants were sufficiently oriented to American and/or Chinese cultures. In addition, Hong Kong Chinese and Beijing Chinese were included in the study if they and their parents were born and raised in China, Hong Kong, or Taiwan. Further, at the time of the study, Hong Kong Chinese were required to live in Hong Kong, and Beijing Chinese were required to live in Beijing.

To ensure that the groups differed from each other in terms of their cultural orientation, all participants completed the American GEQ, and Chinese Americans, Hong Kong Chinese, and Beijing Chinese completed the Chinese GEQ. As expected, a one-way analysis of variance (ANOVA) showed a significant main effect of cultural group for orientation to American culture, F (3, 350) = 117.93, $p < .001$, $\eta_p^2 = .503$. Post-hoc pairwise comparisons revealed that all groups significantly differed from one another, $p < .001$: European Americans were the most oriented to American culture (M = 3.78, SE = .05), followed by Chinese Americans (M = 3.35, SE = .04), Hong Kong Chinese (M = 3.14, SE = .04), and Beijing Chinese (M = 2.61, SE = .04). We also found a significant main effect of cultural

group for orientation to Chinese culture, F (2, 277) = 69.49, $p < .001$, η_p^2 =.334. Beijing Chinese were the most oriented to Chinese culture (M = 4.31, SD = 0.38) compared to Chinese Americans and Hong Kong Chinese, $p < .001$. Pairwise comparisons revealed that Chinese Americans were more oriented to Chinese culture (M = 3.76, SE = .05) than Hong Kong Chinese (M = 3.62, SE = .04), p = .038.[12] A two-way mixed ANOVA with cultural group as the between subjects factor and GEQ as the within subjects factor showed that while Chinese Americans, Hong Kong Chinese, and Beijing Chinese all identified with Chinese culture more than American culture, F (1, 277) = 507.12, $p < .001$, η_p^2 = .647, there was also a significant interaction with cultural group, F (2, 277) = 120.71, $p < .001$, η_p^2 = .466. Beijing Chinese were more oriented to Chinese than American culture to a greater degree than were Chinese Americans and Hong Kong Chinese, who did not differ from each other.

Instruments—As in Study 1, to ensure comparability of measures across cultural groups, we translated and back-translated all questionnaire items as suggested by Brislin (1980).

Cultural Orientation: As in Study 1, as part of a larger survey study conducted approximately two months before the experience sampling study, all participants completed the American and Chinese GEQs. Internal consistency estimates were good for both the GEQ-A (European American α = .89; Chinese American α = .73; Hong Kong Chinese α = .92; Beijing Chinese α = .79) and GEQ-C (Chinese American α = 81; Hong Kong Chinese α = .90; Beijing Chinese α = .83).

Valuing Independence vs. Interdependence: As in Study 1, participants completed the SVS (Schwartz, 1992). We used the same aggregates to assess independent values (European American α = .69, Chinese American α = .79, Hong Kong Chinese α = .67, Beijing Chinese α = .81) and interdependent values (European American α = .72, Chinese American α = .66, Hong Kong Chinese α = .69, Beijing Chinese α = .67) as in Study 1. Finally, as in Study 1, we calculated the difference between the mean of independent values and the mean of interdependent values to determine how much individuals valued independence over interdependence.

Momentary Ideal and Actual Affect: The assessment of affect was identical to that of Study 1, with two exceptions. First, we added three more positive emotions (pleasant, excited and relaxed) for purposes unrelated to the scope of the current study. However, because findings were the same for the 6-item composite as with the 3-item composite used in Study 1, we focused on the 3-item composite to maintain consistency with Study 1. Second, participants were signaled one more time (i.e., 6 times instead of 5 times) each day for one week. We added one more signal because we were concerned that we might encounter more problems with the technology in Hong Kong and Beijing, and wanted to ensure that we had a sufficient number of data points for each participant for data analysis.

[12]This may be because Chinese Americans were raised in households that were "frozen in time," i.e., that preserved traditional Chinese ideas and practices more than their more contemporary Hong Kong Chinese counterparts.

As in Study 1, participants also indicated how pleasant or unpleasant was the activity in which they were engaged at the time they were signaled using the same five point scale. On average, people reported engaging in an unpleasant activity (rating less than 4) only 13% of the time. European Americans reported engaging in an unpleasant activity the most (20%, *SE* = .01) and did not significantly differ from Chinese Americans (16%, *SE* = .01), $p = .075$; however, both were significantly higher than Hong Kong Chinese (13%, *SE* = .01) and Beijing Chinese, *ps* < .05, (10%, *SE* = .01), who did not differ from each other, $p = .096$. Regardless, across cultural groups, the vast majority of participants provided ratings during neutral or pleasant activities, as in Study 1.[13]

Also as in Study 1, to calculate how much people wanted to feel positive and wanted to feel negative, we first calculated the mean for each item (e.g., momentary ideal enthusiastic) across sampling occasions for the week. To derive an overall measure of momentary ideal positive affect and an overall measure of momentary ideal negative affect, we then aggregated the means for the same three ideal positive items (calm, enthusiastic, happy) and the means for the four negative items (anxious, bored, angry, sad) as in Study 1. We created similar aggregates for actual positive affect and actual negative affect. Internal consistencies were high across cultures (Ideal Positive: European American α = .71, Chinese American α = .89, Hong Kong Chinese α = .89, Beijing Chinese α = .90; Ideal Negative: European American α = .87, Chinese American α = .91, Hong Kong Chinese α = .94, Beijing Chinese α = .94; Actual Positive: European American α = .84, Chinese American α = .83, Hong Kong Chinese α = .78, Beijing Chinese α = .79; Actual Negative: European American α = .77, Chinese American α = .83, Hong Kong Chinese α = .88, Beijing Chinese α = .86). For each participant, we then calculated the difference between momentary ideal positive and negative affect, and the difference between momentary actual positive and negative affect.

Procedure—The procedure was the same as in Study 1.[14] European Americans and Chinese Americans completed all measures in English. Hong Kong and Beijing Chinese completed all questionnaires in Chinese.

Study 2 Results

We conducted similar analyses as in Study 1; in all analyses, we controlled for age, gender, and tier of university.

Hypothesis 1: Cultural Differences in Ideal Affect—To examine whether there were cultural differences in the value placed on positive relative to negative affect, we conducted a univariate ANOVA in which we entered Culture (European Americans, Chinese

[13]Study 2 findings also did not vary as a function of pleasantness ratings of the activity they were engaged in when they were signaled.

[14]Several participants responded to more than the planned 42 signals during the study typically because they missed a number of signals during a day, and we asked them to keep the device for one more day. However, to maintain consistency across all participants, we only included the first 42 sampling occasions. Findings were similar when including all sampling occasions. On average, participants responded to 38.97 (SD = 2.50) out of 42 signals. There were no significant differences between European Americans and Chinese Americans, or between Hong Kong Chinese and Beijing Chinese in the number of signals to which participants responded. However, both American groups responded to fewer signals (*M* = 38.09, *SE* = .22) than did both Chinese groups (*M* = 39.72, *SE* = .13), $t(352) = -6.27$, $p < .001$ (equal variances not assumed). However, including number of signals as a covariate did not alter findings.

Americans, Hong Kong Chinese, Beijing Chinese) as the between-subjects factor and ideal affect as the dependent variable.

As illustrated in Figure 3 (top), all cultural groups valued positive affect more than negative affect: however, consistent with Hypothesis 1, there was a significant effect of culture, F (3, 347) = 66.28, p < .001, η_p^2 = .364. European Americans wanted to feel positive more than negative affect ($M_{Ideal\ Pos\text{-}Neg}$ = 2.55, SE =.08) more than Chinese Americans ($M_{Ideal\ Pos\text{-}Neg}$ = 2.32, SE =.07), F (1, 157) = 4.20, p = .042, η_p^2 = .026, who wanted to feel positive more than negative affect more than Hong Kong Chinese ($M_{Ideal\ Pos\text{-}Neg}$ = 1.35, SE =.07), F (1, 180) = 81.79, p < .001, η_p^2 = .312, and Beijing Chinese ($M_{Ideal\ Pos\text{-}Neg}$ = 1.46, SE =.07), F (1, 180) = 69.02, p < .001, η_p^2 = .277. Beijing Chinese wanted to feel positive more than negative affect more than Hong Kong Chinese but this difference was not significant, F (1, 187) = 1.60, p = .208, η_p^2 = .008.[15]

As with Study 1, there was not a significant main effect of culture on the difference between actual positive and negative affect (European Americans $M_{Actual\ Pos\text{-}Neg}$ = 1.08, SE =.08, Chinese Americans $M_{Actual\ Pos\text{-}Neg}$ = 1.10, SE =.07, Hong Kong Chinese $M_{Actual\ Pos\text{-}Neg}$ = 0.88, SE =.07, Beijing Chinese $M_{Actual\ Pos\text{-}Neg}$ = 1.04, SE =.07), F (3, 347) = 2.10, p = .100, η_p^2 = .018).

Overall, these findings supported Hypothesis 1: European Americans wanted to feel positive more than negative (i.e., maximize the positive and minimize the negative) to a greater degree than Chinese Americans, who wanted to feel positive more than negative to a greater degree than Hong Kong and Beijing Chinese. However, Hong Kong and Beijing Chinese did not differ from each other in their ideal affect. Furthermore, the cultural groups did not differ in their actual affect.

Hypothesis 2: Cultural Differences in Ideal Affect Mediated By Independent (vs. Interdependent Values—As in Study 1, we conducted mediation analyses using Hayes' (2014) SPSS macro, model 4. Two Chinese Americans and four Hong Kong Chinese did not complete the SVS and therefore were not included in the following analyses. We estimated the indirect effect of culture on ideal affect through independent vs. interdependent values and bias-corrected standard errors based on 1,000 bootstrapped resamples. We included the mean difference between momentary actual positive and negative affect, age, gender, and tier as covariates.

First, we estimated the indirect effect comparing European Americans (coded as 0) and Chinese Americans (coded as 1). As above, there was a significant effect of culture on the mean difference between momentary ideal positive and negative affect, B = -0.23, SE = .10, t = -2.34, p = .021. There was also a significant effect of culture on independent vs. interdependent values, B = -0.50, SE = .17, t = -2.85, p = .005, such that European Americans valued independence vs. interdependence (M = 1.37, SE = .13) to a greater degree than Chinese Americans (M = 0.87, SE = .12). Above and beyond the effect of

[15]As in Study 1, we focused on the difference score for parsimony, but additional analyses that treated mean levels of ideal positive and ideal negative affect separately yielded the same results. See Supplemental Materials.

culture, the more people valued independence over interdependence, the more they wanted to feel positive over negative affect, $B = 0.09$, $SE = .05$, $t = 1.97$, $p = .051$. Moreover, the effect of culture was significantly reduced when we included independent vs. interdependent values in the model, $B = -0.19$, $SE = .10$, $t = -1.86$, $p = .065$, and the indirect effect of culture on ideal affect through independent vs. interdependent values was significantly greater than zero (indirect effect = -.044, $SE = .025$, *95% CI* [-.116, -.008]). Thus, European Americans wanted to maximize the positive and minimize the negative more than Chinese Americans because they valued independence vs. interdependence more.

Next, we estimated the indirect effect comparing Americans (coded as 0) and Chinese (coded as 1).[16] Consistent with the above results, there was a significant effect of culture on the mean difference between momentary ideal positive and negative affect, $B = -0.97$, $SE = .07$, $t = -14.34$, $p < .001$. There was also a significant effect of culture on valuing independence vs. interdependence, $B = -0.45$, $SE = .12$, $t = -3.76$, $p < .001$, such that Americans valued independence vs. interdependence ($M = 1.09$, $SE = .09$) to a greater degree than Chinese ($M = 0.64$, $SE = .08$). Above and beyond the effect of culture, the more people valued independence vs. interdependence, the more they wanted to feel positive over negative affect, $B = 0.11$, $SE = .03$, $t = 3.72$, $p < .001$. Moreover, the effect of culture was significantly reduced when including independent vs. interdependent values in the model, $B = -0.92$, $SE = .07$, $t = -13.57$, $p < .001$, and the indirect effect of culture on ideal affect through independent (vs. interdependent) values was significantly different from zero (indirect effect = -.050, $SE = .018$, *95% CI* [-.096, -.022]). Thus, consistent with Hypothesis 2, Americans want to maximize the positive and minimize the negative more than Chinese in part because they value independence (vs. interdependence) more.

Hypothesis 3: Cultural Differences in Mixed Affective Experience—As in Study 1, to test Hypothesis 2, we conducted multilevel modeling using HLM 7.01 software (Raudenbush, et al., 2011). At level 1, we regressed momentary actual positive affect onto momentary actual negative affect (group-centered). At level 2, we entered all covariates[17] (participants' age, gender, and university tier) grand-centered. We dummy coded culture to create four vectors representing each culture (e.g., we created a Chinese American vector such that Chinese American participants were coded as 1, and all other participants were coded as 0). We then ran three level 2 models in which one vector was excluded so that the excluded vector represented the reference group for that model. As described in Study 1, because we group-centered momentary actual negative affect at level 1, we also entered mean actual negative affect across sampling occasions at level 2 to control for between-person differences in actual negative affect. There were no interactions between culture and

[16]To ensure national differences were not being driven by European Americans, we also estimated indirect effects for models in which we compared European Americans to Chinese and Chinese Americans to Chinese. The indirect effect of culture on ideal affect through valuing independence (vs. interdependence) was significant for both European American vs. Chinese (indirect effect = -.070, $SE = .039$, *95% CI* [-.174, -.014]) and Chinese American vs. Chinese (indirect effect = -.075, $SE = .029$, *95% CI* [-.147, -.032]) comparisons.

[17]Analyses revealed that the within-person association between momentary actual positive and negative affect was not moderated by gender, $B = 0.05$, $SE = .04$, $t(344) = 1.09$, $p = .277$. However, the association was significantly less negative among students attending middle-tier universities ($M = -0.49$, $SE = 0.06$) than top-tier universities ($M = -0.59$, $SE = 0.06$), $B = 0.19$, $SE = .04$, $t(344) = 4.27$, $p < .001$, and among younger (vs. older) students, $B = -0.036$, $SE = .017$, $t(344) = -2.07$, $p = .039$. Sobel's test indicated a significant indirect effect of tier through ideal affect, $z = 3.44$, $p < .001$, but no indirect effect of age through ideal affect, $z = 0.50$, $p = .618$.

the covariates and therefore these interaction terms were not included in the final models. There was a significant interaction between culture and tier of university.[18] However, including culture × tier interaction terms in the final model did not alter findings and thus were excluded from the final model for parsimony. An example of the level 1 and level 2 equations for the final model with European Americans as the reference group are shown below.[19]

Level-1 Model—Momentary *Actual Positive Affect*$_{ij}$ = β_{0j} + β_{1j}*(Momentary *Actual Negative Affect*) + r_{ij}

Level-2 Model—$\beta_{0j} = \gamma_{00} + \gamma_{01}*(Age_j) + \gamma_{02}*(Gender_j) + \gamma_{03}*(Tier_j) + \gamma_{04}*(Overall\ Mean\ Actual\ Negative\ Affect_j) + \gamma_{05}*(Chinese\ American_j) + \gamma_{06}*(Hong\ Kong\ Chinese_j) + \gamma_{07}*(Beijing\ Chinese_j) + u_{0j}$

$\beta_{1j} = \gamma_{10} + \gamma_{11}*(Age_j) + \gamma_{12}*(Gender_j) + \gamma_{13}*(Tier_j) + \gamma_{14}*(Mean\ Actual\ Negative\ Affect_j) + \gamma_{15}*(Chinese\ American_j) + \gamma_{16}*(Hong\ Kong\ Chinese_j) + \gamma_{17}*(Beijing\ Chinese_j) + u_{1j}$

Across the entire sample, the within-person association between momentary actual positive and momentary actual negative affect was negative and significantly different from zero, B = -0.26, SE = .02, t(344) = -11.77, p < .001. However, as predicted, the strength of this association varied by culture. While European Americans did not differ in mixed affective experience (M = -0.50, SE = .06) compared to Chinese Americans (M = -0.46, SE = .05), B = 0.04, SE = .07, t(344) = 0.61, p = .542, they were less likely to experience mixed emotions than Hong Kong Chinese (M = -0.01, SE = .04), B = 0.49, SE = .07, t(344) = 7.54, p < .001, and Beijing Chinese (M = -0.14, SE = .04), B = 0.36, SE = .07, t(344) = 5.11, p < .001. Chinese Americans were less likely to experience mixed emotions than both Hong Kong Chinese, B = 0.45, SE = .06, t(344) = 7.59, p < .001, and Beijing Chinese, B = 0.32, SE = .06, t(344) = 5.04, p < .001. Finally, Hong Kong Chinese were more likely to experience mixed emotions than Beijing Chinese, B = -0.13, SE = .05, t(344) = -2.42, p = .016, which was consistent with the “farming” hypothesis. Notably, as illustrated in Figure 3 (bottom), whereas the association between actual positive and negative affect significantly differed from zero for European Americans, Chinese Americans, and Beijing Chinese, it was only marginally significant for Hong Kong Chinese, p = .09.

Hypothesis 4: Cultural Differences in Mixed Affective Experience Mediated By Ideal Affect—We then included overall ideal affect at level 2 and found that consistent with Hypothesis 4, above and beyond culture, the more participants wanted to maximize the positive and minimize the negative, the less mixed were their affective experiences (i.e., the more negatively correlated the within-person association between momentary actual positive and negative affect), B = -0.25, SE = .03, t(343) = -7.22, p < .001. This effect was consistent across the four groups.

[18]The effect of tier was significant for Hong Kong Chinese, B = 0.21, SE = .07, t(341) = 3.05, p = .002, and Chinese Americans, B = 0.32, SE = .10, t(341) = 3.20, p = .001, but not for European Americans, B = 0.18, SE = .11, t(341) = 1.59, p = .112, or Beijing Chinese, B = 0.06, SE = .08, t(341) = 0.77, p = .442.

[19]For the final model across cultures, the random intercept effect was 0.22 (SD = 0.47), χ^2(346) = 9818.36, p < .001, and the random slope effect was 0.14 (SD = 0.38), χ^2(346) = 2511.33, p < .001.

The effect of culture was significantly reduced when European Americans were compared with Hong Kong Chinese, $B = 0.20$, $SE = .07$, $t(343) = 3.03$, $p = .003$, and with Beijing Chinese, $B = 0.09$, $SE = .07$, $t(343) = 1.20$, $p = .230$. Moreover, Sobel's tests revealed significant indirect effects of culture through ideal affect for European American vs. Hong Kong Chinese, $z = 6.07$, $p < .001$, and European American vs. Beijing Chinese, Sobel's $z = 5.88$, $p < .001$, comparisons. The effect of culture was also reduced when Chinese Americans were compared with Hong Kong Chinese, $B = 0.22$, $SE = .06$, $t(343) = 3.96$, $p < .001$, and with Beijing Chinese, $B = 0.11$, $SE = .06$, $t(343) = 1.77$, $p = .078$. Sobel's test also revealed significant indirect effects of culture through ideal affect for Chinese American vs. Hong Kong Chinese, $z = 5.76$, $p < .001$ and Chinese American vs. Beijing Chinese, $z = 5.52$, $p < .001$, comparisons. Because Hong Kong Chinese and Beijing Chinese did not differ in their ideal affect, there was no indirect effect of culture on the association between positive and negative affect through ideal affect, $z = 1.05$, $p = .294$.

Although European Americans and Chinese Americans did not significantly differ in the association between positive and negative affect, they did differ in their ideal affect. Thus, based on recommendations by Hayes (2009), we estimated the indirect effect of European American vs. Chinese American culture through ideal affect and found the model further reduced the effect of culture, $B = -0.02$, $SE = .07$, $t(343) = -0.30$, $p = .763$. Sobel's test indicated a significant indirect effect for ideal affect, $z = 1.99$, $p = .046$. Thus, consistent with Hypothesis 3, there was an indirect effect of culture on mixed affective experience through ideal affect.

As in Study 1, we also examined whether valuing independence (vs. interdependence) at the between-person level was associated with mixed affective experience at the daily level with a model regressing positive affect onto negative affect at level 1, and culture, age, tier, mean actual negative affect, and the value placed on independence (vs. interdependence) at level 2. Analyses revealed that valuing independence (vs. interdependence) was not directly associated with mixed affective experience, $B = -0.008$, $SE = .020$, $t(337) = -0.40$, $p = .692$. Thus, consistent with Study 1, valuing independence-interdependence was associated with ideal affect, but did not directly shape mixed affective experience.

Study 2 Discussion

These findings, like those of Study 1, supported our predictions that cultural differences in mixed affective experience (i.e., the within-person association between momentary actual positive and negative affect) are due to cultural differences in ideal affect (i.e., the desire to maximize positive over negative affect). Interestingly, Beijing Chinese had a more negative within-person correlation (suggesting less mixed affective experience) than Hong Kong Chinese. Although not statistically significant, Beijing Chinese did report wanting to maximize positive and minimize negative more than Hong Kong Chinese. This finding is consistent with work suggesting that relative to Americans, Chinese living in Beijing are more individualistic than those living in Hong Kong (Oyserman et al., 2002), perhaps because of a higher historical prevalence of wheat (vs. rice) farming in surrounding regions (Talhelm et al., 2014).

Additionally, in contrast to Study 1, while European Americans differed from Chinese Americans in their ideal affect, they did not significantly differ in their mixed affective experience. It is possible that because the Chinese Americans in Study 2 were more oriented to American culture than those in Study 1 and were attending the same universities as their European American peers, they were in more American than Chinese situations when they were reporting their momentary actual affect (cf. Perunovic, et al., 2007). Further work is needed, however, to test this possibility.

Together, using experience sampling methods, Studies 1 and 2 consistently demonstrate the significant role that ideal affect plays in shaping actual affect across cultures. One possible interpretation is that ideal affect is simply a proxy for dialectical view of the self, which has been identified as a source of cultural differences in mixed affective experience (e.g., Spencer-Rodgers, et al., 2010). However, we predicted that ideal affect would shape how people experience positive and negative affect independent of dialectical view of self because of the differences between the two constructs described above. To begin to test this idea, in the next study, we examined the relationship between ideal affect and dialectical view of the self.

Study 3: Are Ideal Affect and Dialectical View of Self Separate Constructs?

To examine the relationship between ideal affect and dialectical view of the self, we compared American and Hong Kong Chinese college students' responses to measures of global ideal affect (how much people wanted to feel positive and negative states over the course of a typical week) and dialectical view of self. We used global measures of ideal and actual affect and of dialectical view of self because the latter is typically measured at the global level. We compared Americans with Hong Kong Chinese because Hong Kong Chinese were the group that experienced the most mixed emotions in Study 2.

Hypotheses

We hypothesized that: (1) Americans would report valuing positive more than negative affect to a greater degree than Hong Kong Chinese, (2) Americans would view the self as less dialectical than Hong Kong Chinese, but (3) despite these cultural differences, valuing positive relative to negative affect would be weakly if at all correlated with dialectical view of self.

Study 3 Methods

Participants—Ninety-nine American undergraduates from Stanford University (69% female; mean age = 18.83, *SE* = .10; 42% White, 21% Asian, 8% Black, 9% Hispanic, 1% Native American, 19% Multi-ethnic), and 95 Hong Kong Chinese undergraduates from the Chinese University of Hong Kong (57% female; mean age = 20.87, *SE* = .10) completed measures of ideal affect and dialectical view of self. Americans and Hong Kong Chinese marginally differed in gender distribution, χ^2 (1, N = 194) = 2.91, p = .088, and significantly differed in age, t (192) = 13.05, p < .001. Respondents received introductory psychology course credit for participation.

Instruments

Global Ideal and Actual Affect: Using the Affect Valuation Index (Tsai, Knutson & Fung, 2006), participants indicated on a 5-point rating scale (1 = *Not at all* to 5 = *All the time*) how often they actually felt and how often they would ideally like to feel 37 different affective states that varied in terms of arousal and valence *over the course of a typical week*. We created positive (enthusiastic, excited, elated, happy, content, satisfied, calm, relaxed, and peaceful) and negative (nervous, hostile, fearful, dull, idle, sluggish, sad, lonely, unhappy) aggregates for ideal and actual affect. The internal consistency estimates for these composites were high (Americans: Ideal Positive α = .91, Ideal Negative α = .88, Actual Positive α = .92, Actual Negative α = .89; Hong Kong Chinese: Ideal Positive α = .83, Ideal Negative α = .91, Actual Positive α = .86, Actual Negative α = .79).

Dialectical Self Scale (Spencer-Rodgers et al., 2010): In this study, we used the dialectical self scale because it has been previously associated with mixed emotions (Hui et al., 2009; Kim et al., 2014; Spencer-Rodgers, et al., 2010). Participants reported the degree to which they agreed with 32 items that assessed one's tolerance of contradiction (e.g., “I sometimes believe two things that contradict each other”), expectation of cognitive change (e.g., “I often find that my beliefs and attitudes will change under different contexts”), and expectation of behavioral change (e.g., “I often change the way I am, depending on who I am with”). Internal consistency was high for Americans (α = .84) and Hong Kong Chinese (α = .77).

Study 3 Results

First, we examined whether we could replicate the cultural differences in ideal affect observed in Studies 1 and 2 at the global level, as well as the cultural differences in dialectical view of self observed in previous studies (Spencer-Rodgers, Boucher, Mori, Wang, & Peng, 2009; Spencer-Rodgers, Peng, et al., 2010; Spencer-Rodgers, et al., 2004). We conducted between-subjects ANOVAs with culture (American, Chinese) as the independent variable, and the difference between global ideal positive and negative affect, the difference between global actual positive and negative affect, and mean rating on the dialectical self scale as the dependent variables. Then, we examined whether the difference between ideal positive and negative affect was related to dialectical view of self. We entered age and gender as covariates in all analyses. Means, standard deviations, and partial correlations between dependent variables by culture are reported in Table 1.

Hypotheses 1 & 2: Cultural Differences in Ideal Affect and Dialectical View of Self—In support of Hypothesis 1, we found a significant effect of culture on ideal affect, F (1, 190) = 45.59, p <.001, η_p^2 = .193. As shown in Table 1, and consistent with findings from Studies 1 and 2, while both cultural groups valued positive affect more than negative affect, the difference between global ideal positive and negative affect was greater for Americans than Hong Kong Chinese. Because Levene's test indicated unequal variances between cultural groups for the difference between global ideal positive and negative affect, F (1, 192) = 78.06, p < .001, we also conducted a non-parametric Mann-Whitney U test, which confirmed the ANOVA results, p < .001.

Unlike Studies 1 and 2, we found a significant main effect of culture on the difference between global actual positive and negative affect, F (1, 190) = 5.69, p = .018, η_p^2 = .029. Americans experienced positive affect more than negative affect to a greater degree than did Hong Kong Chinese. However, when we controlled for these cultural differences in global actual affect, cultural differences in global ideal affect remained significant, F (1, 189) = 38.85, p < .001, η_p^2 = .170.

Consistent with Hypothesis 2 and previous research, Americans viewed themselves as less dialectical than did Hong Kong Chinese, F (1, 190) = 10.67, p = .001, η_p^2 = .053.

In sum, we replicated previously observed cultural differences in ideal affect and dialectical view of self. Next we examined the relationship between global ideal affect and dialectical view of self.

Hypothesis 3: Are Ideal Affect and Dialectical View of Self Separate Constructs?—To test Hypothesis 3, we calculated partial correlations among ratings of dialectical self, the difference between global ideal positive and negative affect, and the difference between global actual positive and actual negative affect. As predicted and shown in Table 1, dialectical view of self was not significantly correlated with the difference between global ideal positive and negative affect. These findings held for both American (r = .08) and Chinese (r =.12) samples.

Study 3 Discussion

In Study 3, although we replicated cultural differences in dialectical view of self and in ideal positive and negative affect, we found that ideal affect and dialectical view of self were not correlated with each other, suggesting that they are separate constructs.

Taken together, Studies 1-3 suggest that ideal affect mediates cultural differences in mixed affective experience, and that the effect of ideal affect may be distinct from that of dialectical view of self. These studies, however, were limited in a number of ways. First, all were correlational, and therefore, we cannot infer causality. While we have hypothesized that ideal affect influences the relationship between positive and negative affective experience, we have no direct evidence that this is the case. Second, in previous reports, cultural differences in mixed affective experience were most pronounced during pleasant (vs. unpleasant or pleasant and unpleasant) events (Hui et al., 2009; Kim et al., 2014; Leu et al., 2010; Miyamoto et al., 2010). In both of our experience-sampling studies, approximately 90% of the events were neutral or pleasant events, and therefore, we could not directly examine whether the effects of ideal affect on the relationship between positive and negative actual affect differed during events that were pleasant, unpleasant, or a combination of the two. Third, in the first three studies, we did not control for the type of situations people encountered in their daily life, and therefore, it is unknown if ideal affect mediates cultural differences in mixed affective experiences when participants are experiencing the same situation. Fourth, in Studies 1 and 2, it is possible that because participants were rating ideal and actual affect in the same manner (i.e., rating the same emotion terms) at the same time, the ratings of actual affect influenced the ratings of ideal affect, and vice versa. Finally, in Study 3, while we found that ideal affect was not related to dialectical view of self, we did

not compare the effects of the two constructs on mixed affective experience (i.e., the within-person association between positive and negative affect at the momentary level). We addressed all of these limitations in Study 4.

Study 4: Does Ideal Affect Influence Mixed Affective Experience?

In Study 4, we experimentally manipulated the degree to which people wanted to feel positive more than negative states to assess the influence of ideal affect on mixed affective experience. To increase participants' desire to maximize positive and minimize negative, we asked them to focus on their positive feelings but not their negative feelings (the "Enhance Difference" between ideal positive and negative affect condition). To decrease participants' desire to maximize positive and minimize negative, we asked them to focus on their negative feelings but not their positive feelings (the "Reduce Difference" between ideal positive and negative" condition). Because across cultures, people generally want to feel positive more than negative, we did not expect or want participants to value negative more than positive in the latter condition. Instead, we predicted that motivating participants to focus their attention towards the negative and away from the positive would result in participants valuing positive over negative to a lesser degree than those who were motivated to focus their attention towards the positive and away from the negative. After the manipulation, participants completed the momentary AVI and the dialectical self scale. Then, in an ostensibly "second unrelated study," participants watched three television clips (pleasant, unpleasant, and combined pleasant-unpleasant) and reported at multiple times during each clip the extent to which they actually felt positive and negative states.

Hypotheses

We hypothesized that: (1) participants in the Enhance Difference condition would be less likely to experience mixed emotions than those in the Reduce Difference condition, especially during a pleasant (vs. unpleasant and combined pleasant-unpleasant) television clip, as suggested by previous literature, and (2) the effect of condition on mixed affective experience would be mediated by ideal affect, independent of dialectical view of the self.

Study 4 Methods

Participants—We recruited university students to participate in "two" studies, one on the physiological correlates of emotion and another that involved piloting television clips. Fifty American (71% female; 41% White, 31% Asian, 8% Black, 14% Hispanic, 2% Native American, 4% Multi-ethnic) and 50 Hong Kong Chinese (72% female) students were paid either US$10 or HK$50 for their participation. There were no significant differences between cultures in number of female versus male participants across conditions, χ^2 (1, N = 100) = 0.004, p = .950. Six Hong Kong Chinese did not complete the study measures and two reported being suspicious of the instructor's claim about malfunctioning equipment and thus, were excluded from analyses.

Instruments

Momentary Ideal and Actual Affect: We assessed ideal and actual affect using the momentary AVI (e.g., "How much do you want to feel <affective state> *right now*?") to

ensure that our manipulation was effective in altering ideal affect. Participants rated the same emotion terms as in Study 3, and we calculated the same 9-item positive and negative aggregates. Internal consistencies were high across cultures (U.S.: ideal positive α = .85, ideal negative α = .78, actual positive α = .89, actual negative α = .83; H.K.: ideal positive α = .85, ideal negative α = .91, actual positive α = .89, actual negative α = .84).

Dialectical Self Scale: As with Study 3, participants rated 32 items assessing different aspects of dialectical self. We calculated the mean across all 32 items for an overall rating of dialectical self. Internal consistency was moderately high across cultures (U.S. α = .82; H.K. α = .73).

Momentary Actual Affect: While watching each television clip, participants were probed at six separate occasions, at approximately 30-second intervals. To minimize the possibility of demand and disruption when viewing the clips, participants rated general positive and negative feelings rather than the specific terms used in the AVI. Each probe asked participants to rate "How positive are you feeling right now?" and "How negative are you feeling right now?" on a five point scale ranging from 1 = *Not at all* and 5 = *Extremely*. The order in which participants rated actual positive and negative affect was counterbalanced.

Stimuli—All participants were first shown a one-minute practice test clip to familiarize them with the actual affect rating probes described above. Half of participants were randomly assigned to view a pleasant test clip and the other half to view an unpleasant test clip. During the test clip, participants rated how positive and how negative they felt half way through the clip and then again right at the end of the clip. Participants then watched a pleasant, unpleasant, combined pleasant-unpleasant, and a filler (i.e., based on pilot testing, this clip's content was emotional but ambiguous in terms of valence) television clip. We counterbalanced the presentation order of the television clips. To capture participants' momentary actual affect, participants were briefly interrupted while watching the clips by six 14-second probes during which participants were asked to rate how positive and negative they were feeling (average clip length including affect rating probes = 4 minutes, 25 seconds).

Television clips were excerpts from the American version of the international television series the "X-factor" in which two contestants were auditioning simultaneously and judged on their performances. Participants were asked to put themselves in the contestants' shoes and refrain from judging their singing ability. The "pleasant" clip consisted of two contestants who got along well, performed well, and pleased the judges. The "unpleasant" clip consisted of two contestants who disagreed with each other, performed poorly, and disappointed the judges. The clip that was both "pleasant and unpleasant" consisted of one contestant who performed well and another contestant who performed poorly (e.g., forgot the lyrics during the audition). The filler clip consisted of two contestants who were overly emotional (e.g., crying), and it was unclear whether they performed well or poorly based on responses by judges and contestants. Clips were all in English; Hong Kong Chinese students were able to understand the clips because they communicate in both languages in university settings and are frequently exposed to American television programs.

Pre-testing among 50 different college students (25 American and 25 Hong Kong Chinese) confirmed that across cultures, the pleasant clip elicited more positive affect (M = 3.55, SE = .10) than negative affect (M = 1.62, SE = .07), F (2, 47) = 229.67, $p < .001$, $\eta_p^2 = .827$, and the unpleasant clip elicited more negative affect (M = 3.07, SE = .12) than positive affect (M = 2.01, SE = .08), F (2, 47) = 43.99, $p < .001$, $\eta_p^2 = .478$. The combined pleasant-unpleasant clip elicited the same level of positive (M = 2.51, SE = .08) and negative affect (M = 2.51, SE = .10), F (2, 47) = 0.00, p = .100, $\eta_p^2 = .000$.

Procedure—Participants arrived at the lab for a one-hour session consisting of "two separate studies" and were randomly assigned to one of two conditions: Enhance Difference (n = 50) or Reduce Difference (n = 50), which was equally distributed by culture (25 Americans and 25 Hong Kong Chinese in each condition). In both conditions, participants were told that in the "first study," we would be measuring their galvanic skin response while they viewed emotional images on a television screen. After the "first study," they would then participate in a "second study," in which they would help us pilot test some television clips for future research. We used this approach in order to minimize experimental demand. In the Enhance Difference condition, participants were told that we were interested in their "response when feeling pleasant" and that we wanted them to "focus only on the good feelings" and to "try to ignore any bad feelings" they experienced while viewing the images. In the Reduce Difference condition, we told participants we were interested in their "response when feeling unpleasant" and that we wanted them to "focus only on the bad feelings" and to "try to ignore any good feelings" they experienced while viewing the images. Because people across cultures value feeling positive more than negative, we expected that this instruction would reduce the difference between ideal positive and ideal negative but would not reverse the direction of the difference (i.e., make participants want to feel more negative than positive).

We then attached electrode leads to each participant's middle finger of their dominant hand, reminded them of the instructions, and asked them to complete a survey while we checked our equipment to ensure it was recording properly. In the first part of the survey, participants were asked to write about "a personally meaningful experience in which it was valuable/useful/important/desirable" for them to either focus on feeling good/ignore feeling bad (in the Enhance Difference condition) or focus on feeling bad/ignore feeling good (in the Reduce Difference condition). Next, participants completed the momentary AVI and the Dialectical Self Scale. Once participants completed the survey, the experimenter returned to the room, notified the participants that the equipment was not working properly and needed to be recalibrated. The experimenter told participants that they would just proceed to the "second study" and that they would return to the "first study" once the equipment was up and running. The experimenter then removed the electrode lead from the participant's finger and read the instructions for the "second study." The electrodes were used to increase participant's belief that the "first study" was actually going to take place and as a physical reminder in the room that they would resume the "first study" after completing the "second study."

For the "second study," participants were told that they would view several television clips and would be asked to rate how they were feeling multiple times throughout the clips.

Participants were asked to imagine themselves in the shoes of the people in the clips and to rate how positive and negative they were feeling when prompted. Participants engaged in the clip viewing task described above, and then provided overall ratings of each television clip at the end of the task.[20] Throughout the "second study," the survey from the "first study" showing the participants' response to writing about a personally meaningful experience was left in plain sight to maintain awareness of the "first" study's" instructions (written in bold). Participants were then debriefed about the purpose of the study. None of the participants guessed the study's true purpose.

Study 4 Results

Manipulation Checks—We conducted an ANOVA in which the difference between momentary ideal positive and negative affect was treated as the dependent variable, and condition (Enhance Difference, Reduce Difference) and culture were treated as between-subjects factors. There was a significant main effect of condition, F (1, 96) = 12.88, p = .001, η_p^2 = 0.118. Specifically, there was a greater difference between ideal positive and negative affect in the Enhance Difference condition ($M_{Ideal\ Pos\text{-}Neg}$ = 2.72, SE =.10) than in the Reduce Difference condition ($M_{Ideal\ Pos\text{-}Neg}$ = 2.22, SE = .10). See Figure 4 (top). There was also a significant main effect of culture, F (1, 96) = 61.16, p < .001, η_p^2 = .389, such that Americans reported a greater difference between ideal positive and negative affect ($M_{Ideal\ Pos\text{-}Neg}$ = 3.02, SE =.10) than Hong Kong Chinese ($M_{Ideal\ Pos\text{-}Neg}$ = 1.92, SE = .10). Because Levene's test indicated unequal variance between subjects, F (3, 96) = 6.37, p < .001, we also conducted a non-parametric Mann-Whitney U test, which confirmed the ANOVA results. There was no significant culture × condition interaction, F (1, 96) = 0.30, p = .583, η_p^2 = .003, on ideal affect.

To ensure that we manipulated ideal affect above and beyond actual affect, we conducted a between-subjects ANOVA on the difference between momentary actual positive and negative affect. The effect of condition on actual affect was also significant, F (1, 96) = 4.17, p = .044, η_p^2 = .042. Participants in the Enhance Difference condition reported feeling more positive than negative ($M_{Actual\ Pos\text{-}Neg}$ = 1.12, SE = .13) to a greater degree than those in the Reduce Difference condition ($M_{Actual\ Pos\text{-}Neg}$ = 0.74, SE = .13). However, the effect of condition on ideal affect was three times greater than the effect of condition on actual affect, and when controlling for differences in actual affect, this effect remained significant. Furthermore, when controlling for ideal affect, the effect of condition on actual affect was no longer significant. There was no significant effect of culture, F (1, 96) = 3.49, p = .065, η_p^2 = .035, and no significant culture × condition interaction, F (1, 96) = 1.89, p = .173, η_p^2 = .019, on actual affect.

[20]After watching all of the television clips, participants rated how engaged they felt and how familiar they were with each clip using a 5-point scale (1 = *Not at all* to 5 = *Extremely*). Across the clips, there were no differences between conditions in overall ratings of engagement, F (1, 94) = 1.85, p = .177, or familiarity, F (1, 94) = 0.001, p = .977. These findings held across cultures (i.e. there were no culture × condition interactions). However, there was a significant main effect of culture for engagement, F (1, 94) = 13.26, p < .001, and familiarity, F (1, 94) = 39.21, p < .001. Across cultures, people reported feeling at least a little engaged watching the clips, but Americans felt more engaged (M = 3.44, SE = .11) than Chinese (M = 2.91, SE = .11) on average. Across cultures, people were mostly unfamiliar with the clips, but Chinese felt the clips were more familiar (M = 2.08, SE = .11) than Americans (M = 1.11, SE = .11). However, results did not change when including these ratings as covariates in our analyses.

Finally, to assess if we manipulated how dialectical participants viewed themselves, we conducted a univariate ANOVA with the mean rating of dialectical view of self as the dependent variable. One American participant did not complete the DSS. Overall, there was no effect of condition on dialectical view of self, F (1, 95) = 0.87, p = .354, η_p^2 = .009. Participants in the Enhance Difference condition viewed the self as dialectical (M_{DSS} = 4.13, SE = .07) to the same extent as those in the Reduce Difference condition (M_{DSS}= 4.04, SE = .07). Contrary to Study 3, there was no significant effect of culture on dialectical self, American M_{DSS} = 4.04, SE = .07, Chinese M_{DSS}= 4.14, SE = .07, F (1, 95) = 0.91, p = .342, η_p^2 = .010. There was also no significant culture × condition interaction, F (1, 95) = 0.13, p = .715, η_p^2 = .001. Moreover, when estimating the effects of condition and culture on ideal affect, dialectical self was not a significant covariate, p = .881. Thus, we were successful in altering momentary ideal affect independent of dialectical view of self.

Hypothesis 1: Effect of Condition on Mixed Affective Experience—To test our hypotheses, we conducted multilevel modeling using HLM 7.01 software to determine whether there were significant differences in mixed emotions (by estimating the within-person association between momentary actual positive and negative affect) by condition for each clip (Pleasant, Unpleasant, Combined Pleasant-Unpleasant). At level 1, we regressed momentary actual positive affect onto momentary actual negative affect (group-centered). We also dummy coded clip type to create four vectors representing each clip (e.g., the pleasant clip was coded as 1 and all other clips were coded as 0). To estimate the association between positive and negative affect for each clip, we then ran three separate models in which the excluded vector represented the reference group for that model (e.g., to examine the effect within the pleasant clip, we included vectors for the unpleasant, combined, and filler clips and excluded the vector for the pleasant clip). At level 2, we entered grand-mean centered culture (American, Hong Kong Chinese), condition (Enhance Difference, Reduce Difference), a culture × condition interaction term, and mean actual negative affect to control for between-person differences in negative affect for all probes across all clips. For all models, there were no significant interactions between culture and condition suggesting that the effects of condition were similar across cultures. Thus, we excluded the interaction term from the final model for parsimony. The final model for the pleasant clip is shown below.[21]

Level-1 Model—$Positive\ Affect_{ij} = \beta_{0j} + \beta_{1j}*(Negative\ Affect_{ij}) + \beta_{2j}*(Unpleasant\ Clip_{ij}) + \beta_{3j}*(Combined\ Clip_j) + \beta_{4j}*(Filler\ Clip_j) + \beta_{5j}*(Negative\ Affect \times Unpleasant\ Clip_{ij}) + \beta_{6j}*(Negative\ Affect \times Combined\ Clip_j) + \beta_{7j}*(Negative\ Affect \times Filler\ Clip_j) + r_{ij}$

Level-2 Model—$\beta_{0j} = \gamma_{00} + \gamma_{01}*(Mean\ Negative\ Affect\ across\ Clips_j) + \gamma_{02}*(Condition_j) + \gamma_{03}*(Culture_j) + u_{0j}$

$\beta_{1j} = \gamma_{10} + \gamma_{11}*(Mean\ Negative\ Affect\ across\ Clips_j) + \gamma_{12}*(Condition_j) + \gamma_{13}*(Culture_j) + u_{1j}$

[21]For the final model across film clips, the random intercept effect was 0.30 (SD = 0.55), χ^2(96) = 1414.53, p < .001, and the random slope effect was 0.02 (SD = 0.14), χ^2(96) = 224.00, p < .001.

$$\beta_{2j} = \gamma_{20} + \gamma_{21}*(\textit{Mean Negative Affect across Clips}_j) + \gamma_{22}*(\textit{Condition}_j) + \gamma_{23}*(\textit{Culture}_j) + u_{2j}$$

$$\beta_{3j} = \gamma_{30} + \gamma_{31}*(\textit{Mean Negative Affect across Clips}_j) + \gamma_{32}*(\textit{Condition}_j) + \gamma_{33}*(\textit{Culture}_j) + u_{3j}$$

$$\beta_{4j} = \gamma_{40} + \gamma_{41}*(\textit{Mean Negative Affect across Clips}_j) + \gamma_{42}*(\textit{Condition}_j) + \gamma_{43}*(\textit{Culture}_j) + u_{4j}$$

$$\beta_{5j} = \gamma_{50} + \gamma_{51}*(\textit{Mean Negative Affect across Clips}_j) + \gamma_{52}*(\textit{Condition}_j) + \gamma_{53}*(\textit{Culture}_j) + u_{5j}$$

$$\beta_{6j} = \gamma_{60} + \gamma_{61}*(\textit{Mean Negative Affect across Clips}_j) + \gamma_{62}*(\textit{Condition}_j) + \gamma_{63}*(\textit{Culture}_j) + u_{6j}$$

$$\beta_{7j} = \gamma_{70} + \gamma_{71}*(\textit{Mean Negative Affect across Clips}_j) + \gamma_{72}*(\textit{Condition}_j) + \gamma_{73}*(\textit{Culture}_j) + u_{7j}$$

To calculate the average within-person association between momentary actual positive and negative affect within the Enhance Difference condition, we coded condition as Enhance Difference = 0 and Reduce Difference = 1. To obtain coefficients and standard errors for the Reduce Difference condition, we coded condition as Enhance Difference = 1 and Reduce Difference = 0.

Pleasant Clip: Consistent with Hypothesis 1, the effect of condition was significant, B = 0.20, SE = .09, $t(96) = 2.35$, p = .021. Participants in the Enhance Difference condition were less likely to experience mixed emotions ($B_{Enhance}$ = -0.79, SE =.07) than participants in the Reduce Difference condition (B_{Reduce} = -0.59, SE = 0.05). There was no significant effect of culture on mixed affective experience, B = 0.03, SE = .09, $t(96) = 0.32$, p = .751 during the pleasant clip.

Unpleasant Clip: The effect of condition on mixed affective experience for the unpleasant clip, however, was not significant, B = 0.04, SE = .06, $t(96) = 0.67$, p = .502; Enhance Difference $B_{Enhance}$ = -0.68, SE =.04, Reduce Difference B_{Reduce} = -0.64, SE = .04), although the main effect of culture on mixed affective experience was significant, B = 0.11, SE = .06, $t(96) = 2.00$, p = .048, with Chinese being more likely to experience mixed emotions (B = -0.61, SE = .04) than Americans (B = -0.72, SE = .04) during the unpleasant clip.

Combined Pleasant-Unpleasant Clip: Similar to the unpleasant clip, across cultures, there was no significant effect of condition on mixed affective experience for the combined clip, B = -0.07, SE = .06, $t(96) = -1.25$, p = .216, Enhance Difference $B_{Enhance}$ = -0.60, SE =.04; Reduce Difference B_{Reduce} = -0.64, SE = .04. As with the unpleasant clip, however, there was a significant effect of culture, B = 0.19, SE = .06, $t(96) = 3.07$, p = .003, with Chinese having a greater tendency to experience mixed emotions (B = -0.47, SE = .05) than Americans (B = -0.66, SE = .04). See Figure 4 (bottom) during the combined clip.

Hypothesis 2: Condition Differences Mediated By Ideal Affect—Because our manipulation altered both ideal and actual affect, we wanted to ensure that ideal affect mediated the observed condition differences in response to the pleasant clip. We included ideal positive vs. negative affect at level 2 and found that the more participants wanted to feel positive relative to negative, the less mixed their affective experience, $B = -0.16$, $SE = .06$, $t(95) = -2.55$, $p = .012$. This relationship was consistent across cultures. Moreover, when we included ideal affect in the model, the effect of condition was no longer significant, $B = 0.13$, $SE = .08$, $t(95) = 1.51$, $p = .134$. Sobel's test indicated a significant indirect effect of condition through ideal affect, $z = 2.07$, $p = .039$. By contrast, the difference between actual positive and negative affect assessed prior to watching the clips did not predict mixed affective experience during the pleasant clip, $B = -0.06$, $SE = .04$, $t(95) = -1.44$, $p = .153$. Moreover, Sobel's test indicated no significant indirect effect of condition through actual affect, $z = 1.03$, $p = .303$. These findings demonstrate that the condition differences during the pleasant clip were due to ideal affect, not actual affect.

We also examined models in which we entered mean dialectal view of self ratings at level 2 instead of ideal affect. We found no effect of dialectical view of self on mixed affective experience for the pleasant clip, $B = -0.10$, $SE = .10$, $t(94) = -1.04$, $p = .303$, unpleasant clip, $B = 0.04$, $SE = .06$, $t(94) = 0.66$, $p = .510$, or combined clip, $B = 0.00$, $SE = .07$, $t(94) = 0.01$, $p = .996$. Thus, observed condition and cultural differences remained when controlling for dialectical view of self.

Study 4 Discussion

As predicted, we found that participants in the Enhance Difference condition experienced less mixed emotions (i.e., had a stronger negative within-person association between momentary actual positive and negative affect) than did those in the Reduce Difference condition during the pleasant clip. There was no difference between conditions for the unpleasant or combined pleasant-unpleasant clips. On the one hand, these data are consistent with previous research demonstrating that cultural differences between East Asians and Americans in the co-occurrence of positive and negative affect are specific to pleasant situations (Hui et al., 2009; Leu et al., 2010; Miyamoto et al., 2010). On the other hand, although the effect of condition was not significant for the unpleasant and combined clips, cultural differences in mixed affective experience emerged in response to the unpleasant and combined clips. While these findings suggest that ideal affect may be one factor accounting for cultural differences in mixed affective experience during pleasant events, they also suggest that when cultural differences in ideal affect are controlled, cultural differences in mixed emotions emerged in unpleasant and combined pleasant and unpleasant events.

Unlike Studies 1 and 2, in this study, momentary ideal affect was assessed at an earlier time point than actual affect and using different terms, suggesting that the links between ideal affect and mixed affective experience were not due to actual and ideal affect being assessed at the same time or using similar terms. Moreover, because all participants were watching the same clips, differences in mixed affective experience could not be attributed to people being in different situations.

There were no differences between conditions in dialectical view of self, demonstrating not only that we were able to manipulate momentary ideal affect independent of dialectical view of self, but also that observed condition differences in mixed affective experience during the pleasant event were not due to dialectical view of self. Furthermore, as with Study 3 findings for global ideal affect, we also found that dialectical view of self was not correlated with the degree to which people wanted to feel positive over negative states at the momentary level, nor did it predict mixed affective experience across clips. Thus, we were able to demonstrate that at least in this case, ideal affect shapes mixed affective experience during pleasant events independent of dialectical view of self.

General Discussion

Four studies using a variety of experience sampling, survey, and experimental methods, demonstrate that how people ideally want to feel shapes how people actually feel. The more people want to maximize the positive and minimize the negative, the less likely they are to have mixed affective experiences (i.e., the more negatively correlated are their reports of actual positive and actual negative affect). Although previous studies have documented American-Chinese differences in mixed emotions, our studies are the first to demonstrate that: (1) these differences generalize to older community samples and to different samples within the US and China, and (2) people's ideal affect, specifically the degree to which they want to maximize positive and minimize negative, mediates these differences. Because most of the literature has focused on dialectical view of self as a mediator of American-Chinese differences in mixed affective experience, and our findings show that ideal affect is distinct from dialectical view of self, this work advances our knowledge about the sources of these cultural differences in mixed affective experience.

Moreover, people's desire to maximize positive and minimize negative affect influenced people's experiences of mixed emotions primarily during pleasant situations. In Studies 1 and 2, most sampling occasions occurred during neutral or pleasant activities, and in Study 4, valuing positive relative to negative affect altered mixed affective experience during the pleasant clip only. These findings suggest that while ideal affect influences how much people experience the bad during the good (e.g., worrying after winning a contest), it does not necessarily influence how much people experience the good during the bad (e.g., seeing the bright side of not winning a contest). This may be because pleasant events may broaden attentional focus and psychological resources (e.g., Frederickson, 2001), allowing greater consideration of cultural ideals, including those concerning affect. In addition, although previous studies have observed cultural differences in mixed emotions during pleasant events more than unpleasant events (Hui, et al., 2009; Kim et al., 2014; Leu, et al., 2010; Miyamoto, Uchida, et al., 2010), we did find cultural differences in mixed affective experience during unpleasant and combined events. Because we know that those cultural differences were not due to ideal affect or dialectical view of self, these findings suggest that in addition to ideal affect and a dialectical view of self, there may be other factors that account for cultural differences in mixed affective experience, particularly during unpleasant events. Future research is needed to explore these factors.

Implications for Understanding Mixed Emotions

Whereas previous studies have focused on dialectical view of the self as the source of cultural differences in mixed emotions, the current studies focus on ideal affect---or how people ideally want to feel---- as another source. American contexts are less likely to experience the good with the bad not only because they are less tolerant of contradiction and change in themselves but also because they ideally want to maximize the positive and minimize the negative. Indeed, when American and Japanese participants were asked to indicate why they would want to dampen their positive feelings after they succeeded at something, in addition to dialectical beliefs, they mentioned other social concerns (e.g., not hurting others' feelings), self-effacement (e.g., self-doubt), self-improvement (e.g., staying focused), and interpersonal tactics (e.g., being attractive to others) (Miyamoto et al., 2011), which may all result in less of a desire to maximize the positive and minimize the negative. Moreover, findings from Studies 3 and 4 suggest that ideal affect and dialectical view of self are different constructs, and that they both uniquely shape people's tendencies to experience mixed emotions. Therefore, future work should consider both ideal affect and having a dialectical view of self as sources of cultural variation in mixed affective experience, as well as the conditions under which one may be more relevant than the other in shaping mixed affective experience.

In addition, we demonstrated that valuing independence vs. interdependence mediated cultural differences in the desire to maximize positive and minimize negative states. Consistent with previous work, valuing independence vs. interdependence was not directly associated with mixed affective experience. These findings suggest that valuing independence and interdependence shapes ideal affect, and that ideal affect shapes mixed affective experience. These findings may explain why scholars often assume that independence-interdependence should result in mixed affective experience, but only a handful of studies have actually observed such a relationship (e.g., Miyamoto, Uchida, et al., 2010). Our data suggest that valuing independence vs. interdependence may result in wanting to maximize the positive and minimize negative more, which directly reduces the likelihood of experiencing mixed emotions. Thus, valuing independence vs. interdependence may have a distal influence on mixed affective experience.

It is of course possible that had we used a more general measure of dialecticism instead of the dialectical view of self measure, we would have observed a relationship with ideal affect. For instance, Schimmack et al. (2002), in their examination of mixed affective experience at the national level, operationalized dialecticism in terms of prevalence of Buddhism, Hinduism, and Confucianism. However, doing so cannot isolate effects of dialecticism from ideal affect as these religious traditions shape ideal affect as well (Tsai, Miao, & Seppala, 2007). Future research could develop assessments of dialecticism related to conceptions of emotion more specifically to examine potential links to ideal affect and valuing independence vs. interdependence.

Implications for Affect Valuation Theory

The current work builds and expands upon previous work on ideal affect in three significant ways. First, the current work demonstrates that cultural factors shape ideal more than actual

affect in daily life (i.e., when ratings of ideal and actual affect are made in the context of a given moment), whereas previous work demonstrated this at the global level (i.e., when ratings of ideal and actual affect are made in the context of a typical week). Second, the current work is the first to focus on ideal positive relative to ideal negative, or the degree to which people want to maximize positive and minimize negative, whereas previous work focused on distinctions between ideal high and low arousal positive states. Finally, the current work is the first to examine the links between people's ideal affect and their actual affect, whereas previous work has focused on the effects of ideal affect independent of actual affect (Koopmann-Holm et al., 2013; Sims, Tsai, et al., 2014; Sims et al., 2014; Tsai, 2007, Tsai et al., in press; Tsai, Louie, et al. 2007; Tsai, Miao, et al., 2007).

Implications for Understanding Affective Experience and Emotion in Personality and Social Psychology

This research also has important implications for our understanding of affective experience more generally. Our data demonstrate that sociocultural factors such as people's beliefs, desires, and goals (conscious or unconscious) about emotion shape personality processes such as their actual experiences of emotion. Thus, when assessing how people are experiencing emotional events, social and personality psychologists should consider the role that people's beliefs, attitudes and ideals regarding emotion might play. In related studies, the degree to which people value specific positive states has been shown to influence how people experience various emotional events like watching film clips and riding amusement park rides (Chim et al., 2013; Mauss, et al., 2011). For example, the more people value calm and relaxation, the more they enjoy calming amusement park rides and low intensity exercise (Chim et al., 2013). In the present work, we show that in addition to the value placed on specific positive states, the value placed on positive relative to negative states shapes people's experiences of mixed emotion.

Our findings support both social constructivist and universal views of emotion. The constructivist view contends that affective experience is derived in part from our mental representations of what we know about these states (Averill, 1980; Lindquist & Barrett, 2008; Barrett et al., 1999). In this case, experiencing positive affect in relation to negative affect is derived at least in part by the extent to which we conceptualize positive affect as more desirable than negative affect. At the same time, we also found that overall, reports of positive and negative affect were negatively correlated across cultures, lending some support to the cross-cultural validity and universality of the affective circumplex model (Barrett et al., 1999; Larsen & Diener, 1992; Russell, 2003; Russell et al., 1999; Watson et al., 1985).

Limitations and Future Directions

While these studies demonstrate the importance of ideal affect for understanding variation in affective experience, some limitations remain. Although we used various methods (experience sampling, experimental, and global survey) to assess positive and negative affect, our findings are based on self-reports. In future research, it would be important to examine whether our findings replicate with less explicit measures such as neural activation in response to emotional stimuli. For example, to the degree that emotional experience and modulation is implicated by activity in the nucleus accumbens, amygdala, and prefrontal

cortical areas (see Phelps & LeDoux, 2005 for a review), future work could assess whether during positive events, European Americans and Chinese differ in amygdala activity or in its relationship (i.e., functional connectivity) to activity in other areas of the brain. Additionally, investigating the time course of brain activity during positive and negative affective experience may shed light on whether their association is due to simultaneous occurrences of positive and negative affect or one state occurring in response to another.

In addition, although findings from the fourth study indirectly suggest that ideal affect may shape mixed affective experience by focusing participants' attention to negative aspects of a positive event, this work is by no means definitive, and as described at the beginning of this paper, there are other possible mechanisms. For instance, ideal affect may also shape people's actual affect by altering people's selection of situations, and modulation of positive and negative states. We hope to explore these and other mechanisms in the future.

Although Study 4 findings suggest that ideal affect influences mixed affective experience, based on models illustrating the mutual constitution culture and selves (Markus & Kitayama, 2010), we expect ideal and actual affect to mutually shape each other. Indeed, we have collected some preliminary data in support of this possibility: mixed affective experience may reduce people's desire to maximize the positive and minimize the negative. Future research is needed to pursue this systematically.

As in previous research, our studies focused on US-China comparisons, and it would be important to examine whether the findings generalize to other Western and East Asian cultures that differ in settlement histories as well as in other aspects of independence and independence that may shape ideal affect and mixed affective experience. For example, it may be fruitful to examine how ideal affect shapes mixed affective experience in Latino contexts, which are similar to European American contexts in terms of individualism but different from them in terms of collectivism (Oyserman et al., 2002). Similarly, additional work should be conducted within cultures to further explore other between-person factors such as age and social class as well as other contextual factors such as whether societies are undergoing political or economic change. Such factors may explain why we observed that Beijing Chinese experienced less mixed emotion than Hong Kong Chinese in Study 2. Furthermore, in future work, it would be important to distinguish between mixed emotions in which people are experiencing positive feelings during negative experiences (e.g., looking on the bright side during difficult times) as evidenced from a resiliency perspective (Folkman & Moskowitz, 2000; Coifman, et al., 2007; Ong et al., 2004), and mixed emotions in which people are experiencing negative feelings during positive experiences (i.e., seeing the downside of a successful event), as evidenced from a cultural perspective.

Although variation in the correlation between positive and negative affective experience has been documented in Western contexts among older (vs. younger), and more resilient (vs. less resilient) people, future studies should examine whether these differences are also due to differences in ideal affect. Indeed, as reported in Endnote 8, we found some evidence that age differences in mixed affective experience were due to age differences in the desire to maximize the positive and minimize the negative.

Finally, it would be important to examine whether the influence of ideal affect on affective experience has consequences for health and well-being. Studies show that experiencing co-occurrences of positive and negative affect can be beneficial to health (e.g., Hersfield et al., 2011), especially in East Asian cultural contexts (Miyamoto & Ryff, 2010). These health benefits may be most pronounced for people who place less value on maximizing the positive and minimizing the negative. Further, cultural variation in the health consequences of emotional experience more generally (Curhan, Sims, Markus, et al., 2014; Miyamoto, et al., 2013; Consedine, Magai, & Horton, 2005; Soto, Perez, Kim, Lee, & Minnick, 2011) may be partly due to differences in ideal affect.

Identifying ideal affect as a source of variation in the links between emotion and health may help inform health interventions based on emotion regulation strategies. For example, recent work finds that reappraising negative arousal as positive arousal alleviates physiological damage from stress (Jamieson, Mendes, & Knock, 2013). While this technique may be especially effective for people who want to maximize positive and minimize negative affect, it may be less so for people who place more value on negative affect and do not necessarily perceive negative affect as threatening, but rather as helpful. Moreover, in situations in which it is not possible to reappraise negative experiences as positive (e.g., dealing with chronic illness or death), interventions incorporating strategies such as emotion-focused coping (vs. problem-focused coping; Folkman & Lazarus, 1980) may be enhanced by teaching people to value positive experiences less and value negative experiences more.

In conclusion, our studies suggest that the more people want to maximize positive affect and minimize negative affect, the less likely they are to actually experience the bad with the good. These findings not only contribute to our understanding of cultural differences in mixed affective experiences, but also build upon previous work by demonstrating one way in which people's affective ideals can shape their actual affective experiences.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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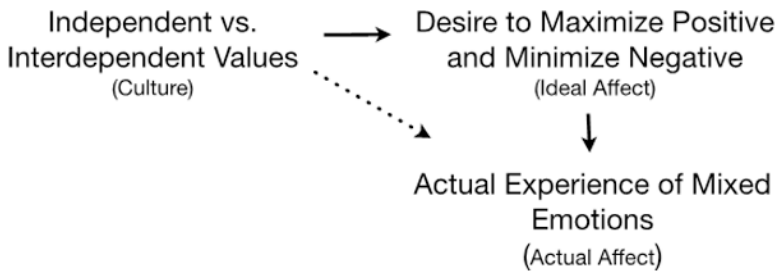

Figure 1.

Theoretical model based on Affect Valuation Theory (Tsai, 2007). Arrows indicate predicted relationships (bidirectional arrows not shown for parsimony). More solid lines indicate stronger predicted relationships.

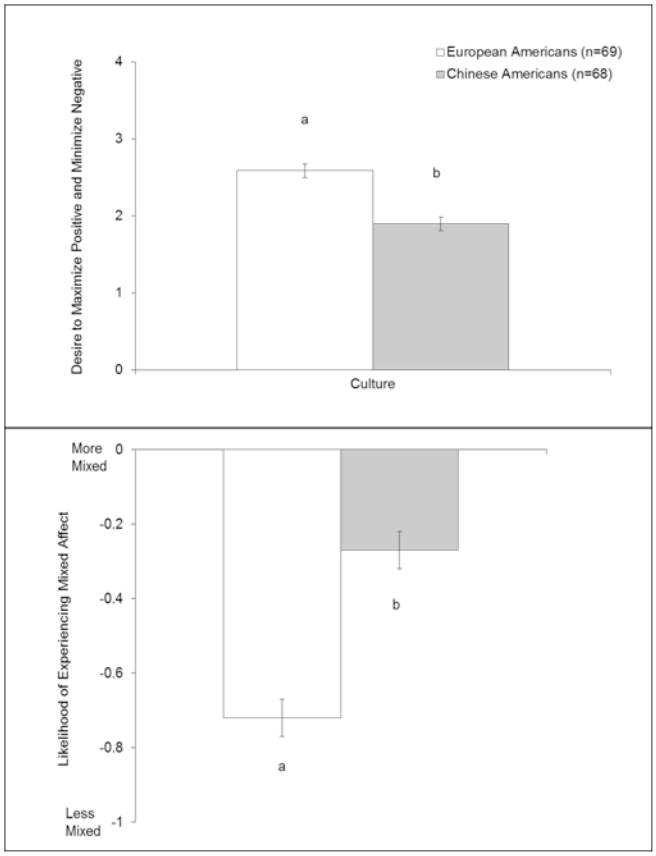

Figure 2.

Study 1. Top: Desire to maximize positive and minimize negative by cultural group, as measured by mean difference between momentary ideal positive and ideal negative affect; Bottom: Likelihood of experiencing mixed affect by cultural group, as measured by within-person association between momentary actual positive and negative affect across sampling occasions. Note: Different letters indicate significant differences between groups, $p < .001$.

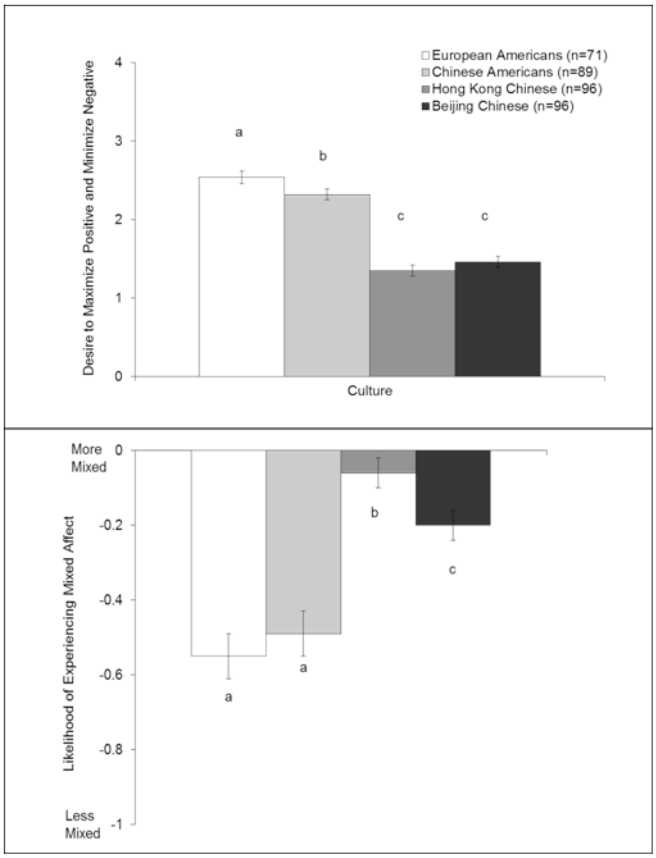

Figure 3.

Study 2. Top: Desire to maximize positive and minimize negative by cultural group, as measured by mean difference between momentary ideal positive and ideal negative affect; Bottom: Likelihood of experiencing mixed affect by cultural group, as measured by within-person association between momentary actual positive and negative affect across sampling occasions. Note: Different letters indicate significant differences between groups, $p < .05$.

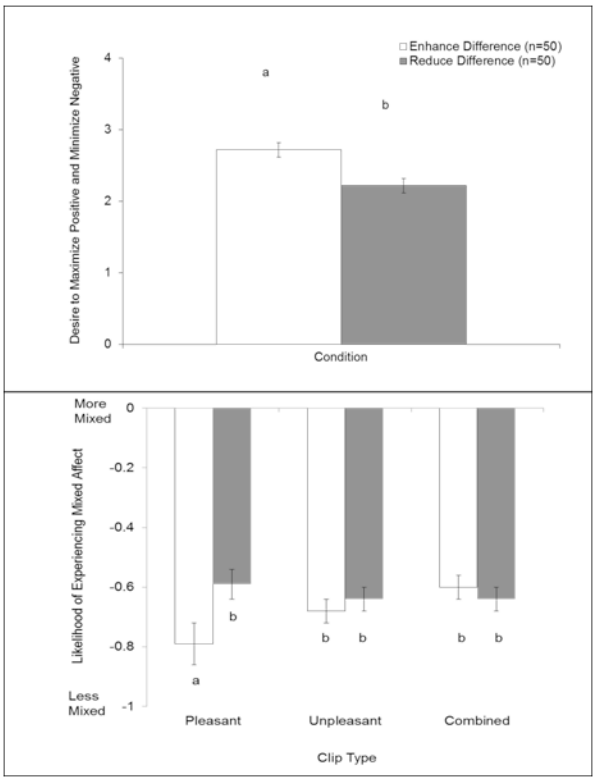

Figure 4.

Study 4. Top: Desire to maximize positive and minimize negative by condition as measured by mean difference between momentary ideal positive and negative affect; Bottom: Likelihood of experiencing mixed affect by condition, as measured by within-person association between momentary actual positive and negative affect. Note: Different letters indicate significant differences between groups, $p < 0.05$.

Table 1

Partial correlations controlling for age and gender for Americans (above diagonal) and Hong Kong Chinese (below diagonal); means; and standard deviations for ideal positive relative to ideal negative affect, dialectical view of self, and actual positive relative to actual negative affect by culture (N = 194) for Study 3.

	Ideal Positive Relative to Negative Affect	Dialectical Self	Actual Positive Relative to Negative Affect
Ideal Positive Relative to Negative Affect	1	0.08	0.20*
Dialectical Self	0.12	1	-0.17†
Actual Positive Relative to Negative Affect	0.31**	-0.20†	1
Mean (SD)			
American (n = 99)	2.98 (0.10)	3.92 (0.05)	1.11 (0.08)
Chinese (n = 95)	1.52 (0.11)	4.20 (0.05)	0.54 (0.10)

†*Note: p < .10,*

**p < .05,*

***p < .01.*