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THE RELATIONSHIP BETWEEN ORIENTATION TO THE U.S. CULTURE AND
AFFECT AMONG CHINESE INTERNATIONAL STUDENTS

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of the Requirements for the Degree

Doctor of Philosophy

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by

Jiquan Lin

August 2017

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Title: THE RELATIONSHIP BETWEEN ORIENTATION TO THE U.S. CULTURE
AND AFFECT AMONG CHINESE INTERNATIONAL STUDENTS
Advisor: Julia Dmitrieva, Ph.D.
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Abstract

Emerging literature suggests that ideal/desired emotions vs. actual emotions
represent an important aspect of subjective emotional experiences that may be
particularly important for cross-cultural research, as culture may influence the subjective
experience of how individuals value certain emotions and to what extent they actually
experience them. The current research conducts two studies to examine cultural
differences in ideal and actual affect, and to test its association with acculturation and
depressed mood within a sample of Chinese international students. Specifically, Study 1
recruited 152 Chinese international college students and 108 U.S. college students to test
differences in their ideal and actual affect, and how these differences are associated with
depressed mood. Study 2 involves longitudinal data collected every six months over the
course of one year to examine changes in Chinese participants' affect patterns, changes in
their acculturation level, and their influences on depressed mood. In addition, the study
tests a moderation effect of orientation to the U.S. culture on the association between
affect and depressed mood over time. Results in Study 1 showed cultural differences in
ideal affect. It suggests that valuing high-arousal positive affect and wanting to feel more
positive over negative effect are more functional to American culture, but higher actual

low-arousal positive affect is associated with lower depressed mood for both Chinese and American cultures. Results in Study 2 showed that levels of average ideal and actual affect did not change in general across the course of a year. However, the association between affect and depressed mood become more similar to American culture when participants had stayed longer in the United States. Orientation to the U.S. culture did not moderate this association in general. Theoretical and practical implications of the results will be discussed.

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Thank you all for supporting and encouraging my continued development. The experience living and studying during the five-year graduate school life will always be a special treasure for me

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Chapter One: General Introduction

Cultural context influences individuals' emotional experiences. It shapes the

norms for emotional expressions, influences how we interpret emotions and place them in

context, as well as influences which emotions we *want to* experience (Eid & Diener,

2001; Russell, 1994; Tsai, Knutson, & Fung, 2006). This dissertation focuses on the

effect of culture on individuals' *desired/ideal* affect and how it is associated with *actual*

affect and depressed mood. My research questions are mainly grounded in the Affect

Valuation Theory (AVT; Tsai, et al., 2006) that has demonstrated that culture has the

strongest influence on ideal positive affect (as opposed to actual affect), that the effects of

culture vary across the ideal low-arousal and high-arousal positive affect, and that

cultural differences are also observed in the patterns of ideal and actual positive affect

relative to negative affect (i.e., dialectical patterns characterized by the mixture of both

positive and negative affect vs. nondialectical patterns characterized by maximized

positive affect relative to negative affect (Tsai & Clobert, 2016).

Cultural Influences on Ideal Affect

The AVT focuses on the distinction between the ideal and actual emotions. In

order to fully understand emotional experiences, one needs to differentiate the "ideal

affect" -- the affective state that people value and would ideally like to feel -- from the

"actual affect" -- the affective state that people actually feel. AVT has proposed that cultural factors play a stronger role in shaping ideal affect as compared to actual affect, while temperament shapes actual affect more than ideal affect (Tsai et al., 2006). Cultural differences in self-concept have received considerable attention in cross-cultural research and have also been linked to cross-cultural differences in emotional experiences. For example, cultural differences in "individualism" and "collectivism" influence self-reported subjective experiences of happiness (Mitamura, Leu, Campos, Boccagno, & Tugade, 2014). In individualistic cultures, such as the United States and Canada, self-concept and well-being are perceived to be independent from others and individuals are more likely to evaluate their own happiness in relation to personal achievements (Uchida, Norasakkunkit, & Kitayama, 2004). Thus, Western cultural ideology dictates that happiness is associated with individual success, self-worth, and good health (Heine, Lehman, Markus, & Kitayama, 1999; Kitayama, Markus, & Kurokawa, 2000; Taylor & Brown, 1988). In turn, the perception of self in collectivist cultures, such as East Asian cultures, is embedded in a group of relationships with other people. Therefore, individuals from an East Asian culture tend to emphasize the importance of harmony and maintaining group relationships over individual needs for happiness (Diener & Suh, 2003; Uchida et al., 2004). AVT has linked these cultural differences to differences in the ideal high-arousal and low-arousal positive affect. Whereas high-arousal positive

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emotions tend to maximize the pursuit of individualistic goals, low-arousal positive emotions tend to maximize social harmony.

AVT has also proposed that cultural factors shape how individuals value positive affect in relation to negative affect (Sims, Tsai, Jiang, Wang, & Fung, 2015; Tsai & Clobert, 2016). The Western cultural script aims to maximize positive emotions and minimize negative emotions so that Westerners tend to perceive events as more uniformly positive or negative. Western culture has a more negative evaluation of events that are characterized by dialectical emotional experiences (e.g., events that are both pleasant and sad) and promotes the pursuit of experiences that maximize positive affect and minimize negative affect (Kitayama et al., 2000; Miyamoto & Ma, 2011; Miyamoto & Ryff, 2011; Schimmack, Oishi, & Diener, 2002). In contrast, the meaning of positive emotions is not perceived as unequivocally "good" in many East Asian cultures which are deeply influenced by philosophical and moral traditions of Buddhism, Confucianism, and Taoism. For instance, Buddhism teaches that pure happiness is impossible to attain and pursuing it leads to suffering in the long run. Taoism teaches that happiness rests in misery and misery hides in happiness; thus, positive emotions are not inherently and uniformly good. Similarly, Confucianism focuses on rejoicing in virtue that cultivates human relations and feels concern for the wellbeing of others. These beliefs may result in a cautious attitude toward evaluation of positive emotion; hence, in East Asian ideology, one should guard against extreme feelings, including positive ones (Mitamura et al.,

2014; Leu, Wang, & Koo, 2011). Thus, East Asians are used to the dialectical thinking, which is characterized by the beliefs that the good and bad things are intertwined and a "middle way" is ideal (Peng & Nisbett, 1999).

Previous research has supported these assertions. For example, participants from the U.S. and Australia experience a more "tight" set of positive emotional experiences (i.e., experience a more homogeneous set of positive emotions) in response to positive experiences. In contrast, participants from China and Taiwan experience a more "loose" set of emotions in response to positive experiences (Eid & Diener, 2001). In comparison to European Americans, Japanese are more likely to associate positive emotion with negative social outcomes, such as jealousy in others and disruption of harmony in social relationships (Uchida & Kitayama, 2009).

Cultural Differences of Affect and Depression

Depression is a clinical mood disorder that is commonly characterized by symptoms such as reduced positive affect (anhedonia), heightened negative affect, or a combination of the two (American Psychiatric Association, 2013). Specifically, reduced positive affectivity and under-arousal (reduced both positive and negative affect) are the core components of depressed mood (Benning & Qumeziane, 2017). Studies also have reported that positive affect is a protective factor in the development of depression (Bos et al., 2013; Lindahl & Archer, 2013), and lower positive affect can predict postpartum depressive symptomatology (de Jonge, et al., 2017; Raes et al., 2014).

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Even though substantial research has demonstrated the association between emotion and depression, cross-cultural differences in the role of affect in depression are less clear. Cross-cultural research has suggested that North American culture and East Asian cultures differ in the scripts that define normative and deviant experiences related to depression, which in turn is associated with differences in perceptions of symptoms of depression (Chentsova-Dutton, Ruder, & Tsai, 2014). European Americans tend to pathologize symptoms of distress and emphasize experiencing positive emotions as the norm. As a result, in European American cultural context, common symptoms of depression include low arousal negative states (e.g., low energy) and emotional numbness (Chentsova-Dutton et al., 2014). For example, depressed European American show blunted emotional response to sad film compared to reactivity of non-depressed European American (Chentsova-Dutton et al., 2007). In contrast, East Asian cultural scripts emphasize emotional moderation and control (Chentsova-Dutton et al., 2014), and depressed Asian Americans showed normal or even heightened reactivity to emotional stimulus (Chentsova-Dutton et al., 2007). Thus, these different cultural scripts influence how individuals experience emotional symptoms of depression. Studies in Western contexts show that people with depression report diminished levels of positive emotions (Bylsma, Morris & Rottenbery, 2008; Rottenbery & Bylsma, 2014), especially pronounced are the deficits in self-focused positive emotions, such as pride (Eid & Diener, 2001), and high-arousal positive emotions, such as excitement (Tsai et al., 2006).

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However, studies of Asian American participants suggest that the depressive symptom of lack of positive emotions, especially high-arousal positive states, was relatively deemphasized (Tsai et al., 2006) in favor of somatic symptoms, such as chronic fatigue and sleeplessness f depression in East Asian cultural contexts (Chentsova-Dutton et al., 2014).

Chinese International Student in the United States

Few studies have examined cultural orientation and associated subjective emotional experiences in international students. However, this group is an important part of the larger student population. The international student population comprised 5% of U.S. 4-year college students (Institute of International Education, 2016), and they contributed $32.8 billion and supported more than 400,000 jobs to the U.S. economy during 2015-2016 academic years (NAFSA, 2017). Thus, their cultural experiences and well-being are of concern for both the U.S. colleges, larger U.S. economy, as well as student applicants and their parents. Furthermore, studying international students provides an opportunity for researchers to investigate the dynamic effects of a change in cultural context may have for psychological outcomes.

The current study recruited a sample of Chinese international students in comparison to the U.S. students. Chinese international students occupy the largest percent of all international students in the United States. The numbers of international students who enrolled in U.S. colleges and universities has increased dramatically in recently

years, reaching over a million students between school year 2015 to 2016. Among these

students, over 30 percent came from China (Institute of International Education, 2016).

At the University of Denver, there were 1,292 international students coming from over 92

nations in 2016. Among them, Chinese international students represented 48% of the total

number (International Student & Scholar Services, 2016). Thus, I focused on

investigating cultural adjustment in affect within this cultural group.

Cultural adjustment of international students is likely different from that

experienced by immigrants – another group that undergoes cultural adaptation. Whereas

immigrants may be motivated to make concerted efforts to adjust themselves to the new

culture they plan to reside in, international students typically do not have long-term plans

to stay in their host country. Therefore, international students' cultural orientation may be

less strongly influenced by this temporary change in cultural context. On the other hand,

most Chinese international students attend college during late adolescence and emerging

adulthood -- a period of rapid changes in identity development and development in

emotion regulation (Arnett, 2007; Whitbourne, Sneed, & Sayer, 2009; Zimmermann &

Iwanski, 2014). Thus, changes in cultural context, even if temporary, may still be

important for long-lasting outcomes in this age group. Furthermore, the change in cultural

context may lead to challenges that are unique to youth, such as challenges in adjustment

to a different educational system and associated challenges in academic performance, as

well as challenges in developing social relationship within the host culture (Ying, Lee, & Tsai, 2006).

The Current Study

This dissertation consists of two studies that aim at investigating the effect of culture on ideal affect, actual affect, and depressed mood. The first study examines cross-cultural differences between the Chinese international students and the U.S. students in their ideal affect (positive and dialectical positive/negative affect pattern), as well as cultural differences in the associations of ideal affect with actual affect and depressed mood. Study 1 utilized a cross-sectional design with $N = 108$ for U.S. students and $N = 152$ for Chinese international students.

The second study tested whether Chinese international students experience acculturative changes in ideal affect, and how changes in ideal affect are associated with their actual affect and depressed mood. Study 2 utilized longitudinal design, with three assessments of 131 students (every 6 months) over the course of one year.

General Hypotheses.

Study 1. Based on previous research, I predicted that cultural differences will mainly emerge in ideal affect, and not actual affect. In general, the U.S. students would value more intense positive affect, and want to maximize positive affect and minimize negative affect more compared to the Chinese international students. Furthermore, there

will be differences in associations between ideal affect and depressed mood between the two samples, and these differences will be explained by the experiences of actual affect.

Study 2. The study predicts an increase of ideal high-arousal positive affect and a decrease in ideal calm positive affect of Chinese international students over time. In addition, the participants will increase in their desire to maximize positive affect and minimize negative affect over time. There has been no previous research directly measuring the association between affect and acculturation levels. I explored this question by testing bi-directional paths from affect to acculturation and acculturation to affect. I hypothesized that higher ideal high-arousal positive affect predicts higher subsequent levels of acculturation and vice versa. In contrast, lower low-arousal positive affect predicts higher subsequent acculturation and vice versa. Similar association was hypothesized for actual affect and dialectic/mixed pattern of affect. Finally, I hypothesize that the association of affective experiences with depressed mood for Chinese international students will become more and more similar to that observed among the U.S. students (i.e., with increasing effect of high-arousal positive affect on depressed mood).

Chapter Two: Study 1 Abstract

Previous research demonstrates cross-cross differences in emotional experiences (Russell, 1994). According to Affect Valuation Theory (AVT), culture has a stronger effect in shaping individual's ideal/desired emotions, which may in turn regulate individual's actual emotional experiences (Tsai, Knutson, & Fung, 2006). In particular, European Americans favor high-arousal positive (HAP) affect and tend to want to maximize positive emotions, relative to negative emotions. In contrast, East Asians favor low arousal positive (LAP) affect and, compared to European Americans, are more comfortable with experiencing a balance of positive and negative affect. The purpose of the current study is to examine cultural differences in the ideal and actual affect, and cultural differences in the consequences of affect for depressed mood in the samples of the 108 U.S. college students and 152 Chinese international college students. The study hypothesized that the U.S. students values HAP affect and non-dialectical affect style (desire to maximize positive and minimize negative affect) more than Chinese international students, whereas Chinese international students value LAP affect and want to experience a moderate level of both positive and negative affect. Furthermore, the culturally valued affect was hypothesized to have a stronger effect in reducing depressed mood through promoting the corresponding actual affect. The hypotheses were partially

supported. The U.S. students valued HAP affect and non-dialectical affect style more than Chinese international students. In addition, higher ideal HAP affect and non-dialectical affect style were associated with lower depressed mood to a greater extent for the U.S. students. In contrast, the cultural differences in LAP affect emerged in actual affect but not ideal affect, as Chinese international students actually experienced more LAP affect than the U.S. students. However, higher actual LAP affect was more strongly associated with lower depressed mood for the U.S. students than Chinese international students. The implications of these results and this unexpected finding for LAP affect are discussed.

Chapter Three: Study 1 Introduction

Cultural Differences in Ideal and Actual Affect

Cross-cultural studies of subjective emotional experiences have often described

emotional experiences in terms of two dimensions -- valence and arousal (e.g., Larsen &

Diener, 1992; Russell, 1991; Watson & Tellegen, 1985). In addition to valence and

arousal, Affect Valuation Theory by Tsai and colleagues (2006) points to the importance

of ideal/desired vs. actual affect. According to Affect Valuation Theory (AVT), cultural

factors have a stronger impact on ideal than actual affect. Specifically, the American

culture places more value on high-arousal positive affect, whereas East Asian cultures

place more importance on calm low-arousal positive affect (Tsai, 2013; Tsai & Park,

2014).

Children and adults learn cultural ideas through exposure or engagement in

prevalent cultural practices, institutions, and artifacts (Kroeber & Kluckhohn, 1952). For

example, people will internalize the cultural ideas of affect that are reflected by

interpersonal communication (Tsai, 2007). Anthropological research argues that

mainstream American communicative scripts are characterized by features of

cheerfulness, enthusiasm, enjoyment, and fun (all high-arousal positive affective states;

HAP), and words (e.g., 'great') that express these affective states in communication are

ubiquitous in American culture (Wierzbicka, 1994). By contrast, Chinese and Japanese

communicative scripts emphasize a consideration of other people's unexpressed feelings

(Wierzbicka, 1996a; Wierzbicka, 1996b), which requires individuals to suppress the self

and adjust to others' needs (Chen et al., 2003; Morling, Kitayama, & Miyamoto, 2002;

Schwartz, 1995). The cultural ideas of adjusting individuals own needs and preferences to

meet the need of focusing other people's feeling has been found to be associated with

valuing low-arousal positive (LAP) affective states (Tsai et al., 2007).

Indeed, studies found that European Americans reported higher ideal HAP affect

and lower ideal LAP affect than Asian Americans, Bejing Chinese and Hong Kong

Chinese (Tsai et al., 2006; Tsai, Miao et al., 2007). These differences between the

American and East Asian cultures has also been reflected in cultural products and

practices (Tsai, 2013). For example, research showed that characters in the best-selling

American children story books contained more excited and fewer calm smiles, and

engaged in higher arousal activities than characters in best-selling Taiwanese Chinese

children's storybooks. In addition, European American children were more likely to

prefer excited smiles than calm smiles (excited state was indicated by "big smile" which

was wider and deeper than calm smile), and preferred excited activities over calm

activities compared to Taiwanese Chinese children (Tsai, Louie, Chen, & Uchida, 2007).

When comparing the smiles in American and Chinese women's magazines, researchers

observed more excited and fewer calm smiles in American women's magazines than they

did in Chinese women's magazines (Tsai, 2007). These cultural differences of ideal affect were also observed in the religions traditions of American and East Asian cultures. For example, a study found that Christian practitioners valued HAP more than Buddhist practitioners, and Buddhists practitioners valued LAP affect more than Christian practitioners (Tsai, Miao, Seppala, 2007). Furthermore, engaging in short-term Buddihist-inspired meditation was showed to increase participants' ideal LAP affect states more than actual LAP affect states (Koopmann-Holm, Sze, Ochs, & Tsai, 2013). In sum, these findings support AVT by showing a strong influence of culture and cultural practices on ideal affect.

Ideal affect, which is a goal that has motivational force on individuals' behaviors and preference of affective states (Tsai, 2007), is associated with people's actual affective experience. Valuing HAP or LAP affect is associated with differences in related mood-producing behaviors that are likely to promote actual HAP or LAP affect. For example, studies showed that the more people valued HAP affective states, the more they prefer exciting (vs. calming) consumer products (e.g. exciting vs. calm music CDs), recreational (e.g., running vs. walking) and leisure activities (e.g., partying vs. reading). Similarly, the more people valued LAP affective states, the more they preferred calming (vs. exciting) products and activities (Mogilner, Aaker, & Kamvar, 2012; Tsai, 2007). A study showed that ideal affect influenced people's preferences for physicians (Sims, Tsai, Koopmann-Holm, & Goldstein, 2014). The more people wanted to feel HAP affective

states on average, the more likely that they were to choose a physician who focused on increasing patients' overall vitality. In turn, the more people wanted to feel LAP affective states on average, the more likely they were to prefer a physician who focused on promoting a relaxed lifestyle of patients.

Few studies have examined how ideal affect may directly influence actual affect. There is some evidence showing that ideal affect is more strongly associated with the reflective aspects of emotional experiences (i.e., how people think about/evaluate their emotional experiences rather than how people experience emotion at a particular point in time). In one study that examined people's feelings of enjoyment with exciting and calm events (e.g., amusement park rides), researchers observed that ideal affect was associated with recalled reports of enjoyments more than on-line reports of enjoyment (Chim, Hogan, Fung, & Tsai, 2017; Tsai, 2013). In another study of on-line reports and retrospective reports of emotions, ideal affect was correlated with retrospective reports of emotions but not reports of on-line emotional experiences. Temperament (extraversion and neuroticisim) were more strongly associated with reports of on-line emotions than to ideal affect. These results suggest that retrospective reports of emotion are dynamic reflections of the way emotions are shaped and reconstructed by cultural information whereas on-line reports of emotion are more constrained by temperament (Scollon, Howard, Caldwell, & Ito, 2009).

Cultural Differences in Positive and Negative Affect

Cross-cultural research has also documented differences in positive and negative affect (e.g., Grossmann, Huynh, & Ellsworth, 2015). American culture encourages independence and emphasizes individual needs over group needs. Thus, wanting to feel good and not to feel bad may be seen as beneficial for individuals, in terms of meeting individual goals and differentiating the self from others in positive ways (Sims et al., 2015). This desire to maximize positive emotions and minimize negative emotions describes a dominant cultural script that is characteristic of many Western cultures (Kitayama et al., 2000; Miyamoto & Ma, 2011). In East Asian cultures, individuals have a tradition to comply with the group and not to stand out. In order to maintain harmony in interpersonal relationship with others, individuals may want to experience more balance between positive and negative emotions. Thus, the dominant East Asian cultural script is to seek a middle way by experiencing moderate levels of positive and negative emotions (Miyamoto & Ma, 2011; Sim et al., 2015).

According to the premise of the AVT, the differences in dominant cultural scripts should be most strongly observed in ideal affect. The dominant cultural script may lead individuals to value positive affect over negative affect differently, which in turn will regulate and shape how actual positive and actual negative affect relate to each other (Sims et al., 2015; Tsai, 2013). In one study, European American and East Asian participants retrospectively reported their emotional reactions and emotion regulation strategies for a positive event, such as academic success. Participants in general reported

feeling more positive than negative emotions and used more savoring than dampening

hedonic regulation for positive emotions. However, European Americans reported higher

a level of positive emotional reactions and less usage of dampening of positive emotions

than East Asians. Furthermore, they found that the associations between culture and

hedonic emotion regulation was partially mediated by participant's dialectical beliefs

about positive emotions (Miyamoto & Ma, 2011). Thus, the results suggest that

dialectical beliefs about positive emotions (or desire to maximize or not maximize ideal

positive affect) is associated with differences in actual affect. In addition to responses to a

positive situation, Miyamoto, Ma and Peterman (2014) also found cultural differences in

on-line emotional experiences in response to a negative event, such as failure on an exam.

In their study, European Americans wanted to increase positive emotions and decrease

negative feelings more, as compared to Asians and Asian Americans. One day later,

European Americans reported a steeper decline in negative emotions than Asians and

Asian Americans.

Only one study has investigated cultural differences in positive and negative

affect while explicitly distinguishing ideal and actual affect (Sims et al., 2015). In this

momentary sampling study, the term "mixed affect" was used to describe differences in

positive and negative affect desired or experienced at multiple time points throughout the

study. The study revealed cultural differences in participant's mixed ideal affect.

Specifically, the preference for ideal positive affect over negative affect was larger for

European Americans than Chinese American participants. At the same time, Chinese Americans showed a less negative within-person association between actual positive and negative affect than did European Americans. In other words, occasions characterized by high positive affect were more likely to be characterized by low negative affect in both cultural groups, but more so among European Americans than Chinese Americans. Furthermore, participants' actual mixed affect was predicted by the differences in their ideal positive and negative affect. If individuals ideally wanted to maximize positive affect and minimize negative affect, they were less likely to experience actual mixed positive and negative affect. These findings of cultural differences were present for both the larger community sample and a sample of college students (Sims et al., 2015).

One commonly-used method of assessing dialectical (mixed) and non-dialectical affect styles has been to compare magnitudes of correlations between reported positive and negative affect. A non-dialectical affect style is characterized by a stronger negative association between positive and negative affect in comparison to the dialectical affect style (Grossmann et al., 2015). For example, Scollon, Diener, Oishi, and Biswas-Diener (2005) examined both between- and within-person associations in positive and negative emotions by comparing participants in Asian cultures (Indian, Asian American, Japanese) and Western cultures (European American and Hispanics). Their findings showed that at the within-person level, the Western sample had a stronger magnitude of negative correlation than the Asian sample (i.e., positive occasions were less likely to be negative

among Western than Asian participants). At the between-person level, Asian sample

showed positive correlation, whereas Westerners showed no correlation (i.e., Asian

participants who reported more positive affect in general also reported more negative

affect).

The traditional correlational measure of non-dialectical vs. dialectical affect has

one limitation -- it cannot differentiate among individuals who experience emotions at

different levels (frequency or intensity). As such, both low-frequency and high-frequency

emotions may results in an identical correlation coefficient and obscure cultural

differences in the levels of emotional experiences. A typology method based on

assessment of the frequency of positive and negative affect may give more information

on affective styles. One study that utilized a typology approach categorized individuals

into six groups (mostly positive, mostly negative, low dialectical, moderate dialectical,

and high dialectical) according to the participant quartile scores for the positive and

negative affect scores. In this study, Americans were more likely to fall into the positive

non-dialectical emotional style (high frequency in feeling of positive emotion and low

frequency in negative emotions), whereas Japanese adults were more likely to fall into

the moderate dialectical emotion (lower frequency in experiencing both positive and

negative emotions) than Americans (Miyamoto & Ryff, 2011). However, this approach

has its own limitations. Because individuals were placed into groups based on the quartile

scores, this typology is dependent on the distributional properties of the samples

included. As such, a study that includes European American and Asian American samples and a study that includes American and Asian sample will result in typologies with different cut-off points for each style.

Cultural Differences in the Importance of Ideal and Actual Affect for Mental Health and Well-Being

Previous research has established a positive association of actual positive affect with physical (e.g., Boehm & Kubzansky, 2012;) and mental health (Fredrickson & Cohn, 2008; Lyubomrisky, King, & Diener, 2005; Santos et al., 2013). Research has suggested that culture influences the association of actual positive affect with mental health (Leu et al., 2011), and HAP and LAP affect has been shown to have different implications for the well-being between the American and East Asian cultures (Tsai & Clobert, 2016; Tsai & Park, 2014). Specifically, affect such as cheerfulness, enthusiasm, and fun that belong to HAP affect category are essential in interpersonal communication in American culture, but not the East Asian culture (Wierzbicka, 1994). Thus it may be more important for American individuals to display these emotions in order to feel more socially-connected and have a better sense of well-being (Tsai, 2007; Tsai, 2013). In contrast, LAP affect fits the needs and feelings of other people (Wierzbick, 1996), and it is important for making social connections and maintain interpersonal harmony in East Asian culture (Tsai & Clobert, 2016). Thus, LAP affect may have protective effects on reducing risks of mental health problems in East Asian cultures.

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The connection for ideal affect with mental health and well-being is less straight-forward. Whereas it is reasonable to assume a uniformly-positive association between actual positive affect and better well-being, desiring more positive affect may have positive or deleterious effects. On the one hand, if higher ideal positive affect is associated with higher actual positive affect, than consequently higher ideal positive affect would be indirectly associated with better psychological outcomes. Indeed, one of the tenets of the AVT is that ideal affect shapes mood-producing behaviors, which in turn promote actual affect to be closer to the ideal affect (Tsai & Park, 2014). It suggests that the distance between ideal and actual affect is association with depressed mood. For example, a study measured correlation between ideal and actual affect showed that the correlational scores of ideal and actual HAP affect predicted significant percentages of variance in depressed mood for European Americans and Chinese Americans, but not for Hong Kong Chinese. The greater the positive correlation between ideal and actual HAP affect was, the less depressed mood participants of European Americans and Chinese Americans experienced. In contrast, the correlational scores between ideal and actual LAP affect explained significant percentages of variance in depressed mood for Hong Kong Chinese and Chinese Americans, but not for European Americans. Thus, the greater the positive correlations between ideal and actual LAP affect were, the less depressed mood participants of Hong Kong Chinese and Chinese Americans experienced (Tsai et al., 2006). The results suggest that being able to bring actual affect close to ideal

affect is beneficial in reducing depressed mood for people, and cultural information

shapes this effect.

On the other hand, ideal positive affect may have consequences for how

individuals interpret their actual experiences with high ideal positive affect leading to

disappointments and unhappiness (Mauss, Tamir, Anderson, & Savino, 2011). Placing

extremely high value on happiness can have a detrimental effect on well-being, especially

when actual experiences fall short of expected extreme positive states (Ford & Mauss,

2014; Gruber, Mauss, & Tamir, 2011). As a result, higher desire for happiness can be

paradoxically associated with feelings of loneliness (Mauss et al., 2012), higher risks for

developing biopolar disorder (Ford, Mauss, & Gruber, 2015), and depression (Ford,

Shallcross, Mauss, Floerke, & Gruber, 2014). In addition, ideal affect reflects cultural

norms and goals (Tsai, 2013; Tsai & Park, 2014), and not following such "affective rule"

may increase risks of mental health problems (Thoits, 1985), specifically when people

place high value on affect that is less culturally valued. For example, in our own work

(Lin & Dmitrieva, under review) we showed that higher ideal HAP affect is associated

with higher level of depressed mood for Chinese international students. In addition to the

direct effect of ideal HAP on depressed, there was a negative indirect association of ideal

HAP affect and depressed mood through actual HAP affect, but only when participants

had a higher orientation to the U.S. culture. Specifically, higher ideal HAP affect was

associated with higher actual HAP affect, which in turn was associated with less

depressed mood for participants with higher orientation to the U.S. culture. In contrast,

the indirect negative effect ideal HAP on depressed mood was not significant for

participants with lower and average level of orientation to the U.S. culture. In sum, these

studies suggest both positive and deleterious effects of ideal affect on well-being and

mental health, and the magnitude of those effects may depend on cultural orientation.

Cultural Differences in the Effect of Dialectical and Non-Dialectical Positive and

Negative Affect on Mental Health and Well-Being

Little is known about the implications of cultural ideals of feeling positive affect

and negative affect on individual's well-being and mental health. Based on the finding of

impact of HAP and LAP affect on depressed mood (Tsai et al., 2006), one may speculate

that culture shapes ideal affect by promoting dialectical or non-dialectical style, which

may be indirectly associated with depressed mood by regulating the actual affect style of

individuals. Thus, individuals who want to maximize positive affect and minimize

negative affect will likely engage in behaviors that maximize positive affect and

minimize negative effect, which in turn will be associated with lower depressed mood

(Tsai, 2013).

The function of dialectical affect style in subjective well-being and mental health

may vary across cultures. Relatively few studies have investigated this question. Higher

levels of positive affect and lower levels of negative affect are associated with positive

physical and mental health (Kiecolt-Glaser, Mcguire, Robles, & Glaser, 2002; Kring,

2001; Lyuboirsky, King, & Diener, 2005; Pressman & Cohen, 2005). This might suggest that maximizing positive affect and minimizing negative affect in actual affect experience is a protective factor to decrease risks of mental health, such as depressed mood universally across cultures. Furthermore, because of the emphasis on dialectical emotional styles in East Asians and on maximizing positive emotions over negative emotions among Westerners, dialectical emotional style may be associated with greater well-being in East Asians and non-dialectical style may be more relevant for participants from Western cultures. Indeed, a study comparing non-dialectical vs. dialectical affect styles across cultures (Miyamoto & Ryff, 2011) found that physical outcomes related to the moderate dialectical affect type were dependent on culture, as it was associated with fewer health symptoms in Japanese than in Americans.

The Current Study

The current study aims to extent previous research in several ways. First, I aim to examine if findings of cultural differences of ideal HAP and LAP affect will be replicated to in samples of U.S. students and Chinese international students. As no study has ever investigated a sample of college international students, it will provide evidence for the generalizability of AVT theory. Second, I aim to extend the AVT by comparing the association of HAP and LAP affect (for both ideal and actual) with depressed mood between the U.S. students and Chinese international students. Thirdly, as previous research has mainly utilized correlational methods to test cultural differences in affect

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styles, I aim to extend the research by incorporating measure of typology method to investigate the cultural differences. In addition, I will investigate the function of non-dialectical and dialectical affect (for both ideal and actual affect) in depressed mood.

Specific Aims and Hypotheses.

Aim 1. To replicate cultural differences in ideal HAP and LAP affect.

Hypothesis 1. American students will report higher ideal HAP and lower LAP affect than Chinese International students. Actual experience of HAP and LAP affect will not be different between the two cultures.

Aim 2. To examine the implications of HAP and LAP affect (for both ideal and actual affect) on depressed mood.

Hypothesis 2. Higher ideal HAP affect will be associated with lower levels of depressed mood among American students, whereas this association will be weaker or not significant for Chinese international students. In contrast, higher ideal LAP affect will be associated with lower depressed mood for Chinese international students, whereas this association will be weaker or not significant for American students.

Hypothesis 3. Similar to hypothesis 2, I expected to see a stronger association between actual HAP affect and depressed mood among the American than Chinese international students, and a stronger association between the actual LAP

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affect and depressed mood among Chinese international students than American students.

Hypothesis 4. The effect of ideal affect on depressed mood will be mediated by participant's actual affect. Specifically, wanting to have more HAP and LAP affect will be associated with greater actual experiences HAP and LAP affect, which in turn will be associated with less depressed mood for both cultures. However, the indirect effect of the mediated pathway from *ideal HAP affect* → *actual HAP affect* → *depressed mood* will be in a stronger for the U.S. students than Chinese international students, whereas the mediated pathway from *ideal LAP affect* → *actual LAP affect* → *depressed mood* will be in a stronger for the Chinese international students than the U.S. students.

Aim 3. To examine cultural differences in non-dialectical vs. dialectical affect styles and their implications on depressed mood.

Hypothesis 5. The U.S. students will desire to maximize positive affect over negative affect (ideal positive - negative affect) more than Chinese international students, and will have greater preponderance of positive over negative affect (actual positive - negative affect) than Chinse international students. Across cultures, desire to maximize positive affect over negative affect will be associated with less depressed mood, and this association will be mediated by individuals' preponderance of positive over negative affect. The magnitude of the mediated

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pathway *desire to maximize positive affect over negative affect* → *preponderance of positive affect over negative affect* → *depressed mood* will be greater for the U.S. student as for the Chinese international students.

Hypothesis 6. Based on results of Latent Class Analysis of frequency of positive and negative affect (for both ideal and actual affect), I expect that the U.S. students will be more likely to fall into classes characterized by non-dialectical ideal affect than Chinese international students. Chinese students will be more likely to belong to the dialectical affect styles than the American students. Dialectical affect styles will further be differentiated by actual positive and negative affect. For both the U.S. students and Chinese international students, those who are able to successfully maximize their actual positive affect and minimize their actual negative affect, their levels of depressed mood will be lower than for those who are not able to do that. Instead, for Chinese international students who fall into the class of ideal dialectical affect style and also have actual dialectical affect, they will experience a relatively lower depressed mood than those who fall into the class of non-dialectical affect style (desire to maximize positive affect and minimize negative affect) but are not able to do that in actual affect. In contrast to the U.S. students who fall into the class of ideal dialectical affect style and also have actual dialectical affect, they will experience a higher depressed mood than other classes.

Chapter Four: Study 1 Method

Participants

U.S. students were recruited from the sample pool of SONA system at the Department of Psychology at University of Denver. 108 participants registered and filled out on-line questionnaires in exchange for extra credit for psychology classes. The majority of the sample were female (73.83%), and the average age was 20.22 ($SD =$ 1.49). Among the participants, 76.9% were White American, 4.6% were Asian American, 7.4% were Hispanic American, 2.8 were Middle Eastern American, and 8.3% were of other ethnicities. A separated set of analyses examined potential differences among the White and non-White American participants. There were no significant differences across these two samples on any of the study variables. Thus, this sample was analyzed as one group.

There were 152 Chinese international students recruited through targeted email advertisements sent to international students and direct contact in undergraduate and graduate level classes from the metro area of Denver. Slightly more than half (58.6%) of the sample were female. The average age of the sample was 21.69 ($SD = 2.05$), and the average time that they had stayed in the U.S. was 1.46 years ($SD = 1.35$). Among them, about 65.4% were undergraduate students, and 34.6% were graduate students. As undergraduate and graduate students were not significantly different in the mean level of

any variable that was tested in the following analysis, this factor will not be discussed further.

Procedure

The U.S. students completed the questionnaire in Qualtrics that was linked to the SONA system. Because the Chinese international students had little experience in participating in psychological research, they completed the paper-form questionnaire with help from research assistants in the Social Context and Developmental lab, as needed. The research assistants were Chinese international students who received training in the lab. They were responsible for contacting participants for completing questionnaires, giving instructions, and answering questions about questionnaires. Although the questionnaire was translated into Chinese language, some participants required further clarifications. Because certain affective words (i.e. aroused, still) are not frequently used in Chinese culture, research assistants explained these words to each participant both in English and Chinese prior to taking the survey. Each participant was paired with one research assistant when completing the questionnaire. In this way, they were able to have a more private environment to ask questions related to the study. They were first informed that this was a longitudinal project which involved three time points with an interval of 6 months. Then the research purpose, ethics and estimated completion time of questionnaires for each time point were explained to participants in detail. If they agreed to participate, they were given the questionnaire to complete. Participants were compensated with 10 dollars each time they completed the questionnaires.

Measures

Considering the English proficiency of Chinese international students was not as good as native English speakers, all questionnaires were translated to Chinese for them. As Chinese translated versions had already been published and validated in other studies or research laboratories, the published translated versions of those measures were used in the study (i.e., Affect Valuation Index and Center for Epidemiologic Studies Depression Scale).

Ideal and actual affect. Ideal and actual affect were assessed using the Affect Valuation Index (AVI; Tsai et al., 2006). The subscale assessing *ideal affect* prompted participants to rate how often they would ideally like to feel each of the 30 different affective states on average in a typical week, using a scale ranging from 1= *never* to 5= *all of the time*. As the current study measured participant's global ideal and actual affect over a period of time, we assessed frequency instead of intensity of affect. The 30 states assessed by the scale represent eight affective octants that vary in arousal (low, moderate, and high) and valence (negative, neutral, and positive). For the purposes of this study, we did not focus on neutral emotions, which resulted in a total of six affective octants and 21 affective states in the final analyses. High-arousal positive (HAP) affect was comprised of feeling "enthusiastic," "excited," "strong," and "elated." Positive (P) affect was comprised of feeling "happy," "satisfied," and "content." Low-arousal positive (LAP) affect was comprised of feeling "calm," "at rest," "relaxed," "peaceful," and "serene." High-arousal negative (HAN) affect was comprised of feeling "fearful," "hostile," and "nervous." Negative (N) affect was comprised of feeling "sad," "lonely," and "unhappy." Finally, low-arousal negative (LAN) affect was comprised of feeling "dull," "sleepy,"

and sluggish." The subscale assessing *actual affect* prompted participants to rate how often they actually fell each of those 30 affective states, using the same rating scale as for the ideal affective state. Similar to the ideal affect, actual affect was summarized into HAP, P, LAP, HAN, N, and LAN affect. For Chinese international students, the α's of ideal positive affective octants ranged from .75 to .86, actual positive affective octants ranged from .77 to .82, ideal negative affective octants ranged from .70 to .80, and actual negative affective octants ranged from .62 to .81. For the U.S. students, the α's of ideal positive affect octants ranged from .61 to .72, actual positive affective octants ranged from .72 to .84, ideal negative affect octants ranged from .72 to .83, and actual negative affective octants ranged from .66 to .82.

In order to control potential cultural difference in response style (Yik & Russell, 2003; Tsai et al., 2006; Tsai et al, 2007), we computed ipsatized scores for both ideal and actual affect for each participant. To compute ipsatized scores, we calculated means and standard deviations across all 25 items of ideal and actual affect for each participant. For both ideal and actual affect, the ipsatized score was next computed as (Raw affective item − Mean of all items)/SD of all items. Then, we obtained a score for each affective octant by averaging ipstaized scores of items in the octants. One Chinese international student rated all affective items the same, which resulted in an inability to compute his ipsatized score. As a result, this data was deleted from the sample, and the final analyses included 151 Chinese international students.

Preponderance of positive affect over negative affect. In addition to the four ideal and four actual affect scores, I have computed participants' desire and actual ability

to maximize higher positive over negative affect. A difference score for *ideal affect* was computed by subtracting ideal negative affect (averaged across arousal levels) from ideal positive affect (averaged across arousal levels). Thus, higher scores represented a greater desire to have more positive than negative affect. A difference score for *actual affect* was computed by subtracting actual negative affect from actual positive affect (high scores representing greater preponderance of positive affective experiences over negative).

Depressive symptoms. It was assessed with the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). The 20-item CES-D scale ($\alpha = .92$ for the U.S. students and $\alpha = .92$ for the Chinese international students) assesses participants' experience of depressed mood in the past six months with items that measure cognitive, affective, behavioral, and somatic symptoms. Participants responded to statements such as "I was bothered by things that usually don't bother me," using a 4-point response scale that ranged from 0 =*never* to 3 = *almost every day*. A total score equal or greater than 16 indicates a risk for clinical depression of participants.

Chapter Five: Study 1 Results

Cultural Differences in Ideal HAP and LAP Affect

Table 1.1
Means Differences in Affect between the U.S. and Chinese International Students

	Mean *(SD)*		Mean Differences	*t*(df)
	US Student.	Chinese International Students		
Ideal Affect				
High-Arousal Positive	.77 (.34)	.60 (.48)	.17	3.13 (258)**
Low-Arousal Positive	.90 (.31)	.87 (.44)	.03	.68 (258)
Desire to Maximize Positive	2.72 (.84)	1.90 (1.04)	.82	6.77 (258)***
Actual Affect				
High-Arousal Positive	.23 (.58)	.15 (.53)	.08	1.15 (257)
Low-Arousal Positive	.10 (.59)	.49 (.53)	-.38	-5.47 (257)***
Preponderance of Positive	.36 (1.10)	.59 (.85)	-.23	-1.90 (257)

** $p < .01$, ***$p < .001$

In line with previous studies, there were more cultural differences in the means of ideal affect than actual affect (see Table 1.1). The U.S. students had higher ideal HAP affect than the Chinese students, $t(258) = 3.13$, $p < .01$ and higher desire to maximize positive affect, $t(258) = 6.77$, $p < .001$. There were no significant mean differences in actual HAP or preponderance of positive affect. Contrary to our expectations, Chinese

international students did not have higher ideal LAP than the U.S. students. Instead, they had higher actual ideal LAP affect than the U.S. students, $t (257) = -5.47$, $p < .001$.

Cultural Differences in Effects of HAP and LAP Affect on Depressed Mood

In hypothesis 2, we predicted that the association of Ideal affect and depressed mood would be different for participants from the two cultures. Specifically, I expected HAP would have a stronger contribution to lower depressed mood among the U.S. students, as compared to the Chinese international students. In contrast, LAP would make a stronger contribution to decrease depressed mood for Chinese international students than the U.S. students.

To test these hypotheses, I conducted a series of hierarchical regressions to test the effect of each ideal and actual affect. In order to eliminate the effect of other cultural factors on depressed mood (e.g., Bond, 1988), I standardized scores of depressed mood for all participants. Gender and age were entered into the model in the first step. In the second step, cultural group (0 = U.S. student, 1 = Chinese international student) and each affect were entered as the main effects. Finally, an interaction term of each affect and culture was entered as the last step. To avoid issues of multicollinearity, each interaction term was tested in a separate model which resulted in a total of 6 models (3 for ideal affect and 3 for actual affect).

Table 1.2
Interaction Effects for Ideal Affect and Culture on Depressed Mood

	b	SE	β	t	R^2	ΔR^2
Step 1					.00	--
Gender	-.06	.13	-.03	-.45		
Age	.01	.03	.02	.29		
Step 2 – Main Effect					.01	.01

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	b	SE	β	t	R^2	ΔR^2
Culture	-.04	.14	-.02	-.28		
High-Arousal Positive Affect	-.19	.15	-.08	-1.30		
					.04	.03*
Culture	-.03	.13	-.01	-.21		
Low-Arousal Positive Affect	-.47**	.16	-.18	-2.97		
					.03	.03*
Culture	-.17	.15	-.09	-1.19		
Desire to Maximize Positive Affect	-.20**	.07	-.21	-2.96		
Step 3 – Culture ×						
High-Arousal Positive Affect	.74*	.34	.35	2.21	.03	.02*
Low-Arousal Positive Affect	-.49	.36	-.27	-1.34	.04	.01
Desire to Maximize Positive Affect	.14	.14	.17	1.00	.04	.00

*$p < .05$, **$p < .01$

For ideal affect (see Table 1.2), culture significantly moderated the association between HAP affect and depressed mood. U.S. students who desired more HAP affect experienced less depressed mood, $b = -.75$, $p < .05$, while ideal HAP affect was not related to depressed mood for Chinese international students (see Figure 1.1). However, I did not find significant cultural differences in the associations of LAP affect and desire to maximize positive affect with depressed mood. Desiring more LAP affect was in general associated with lower depressed mood and desiring to maximize positive affect was not associated with depressed mood for both the U.S. and Chinese international students.
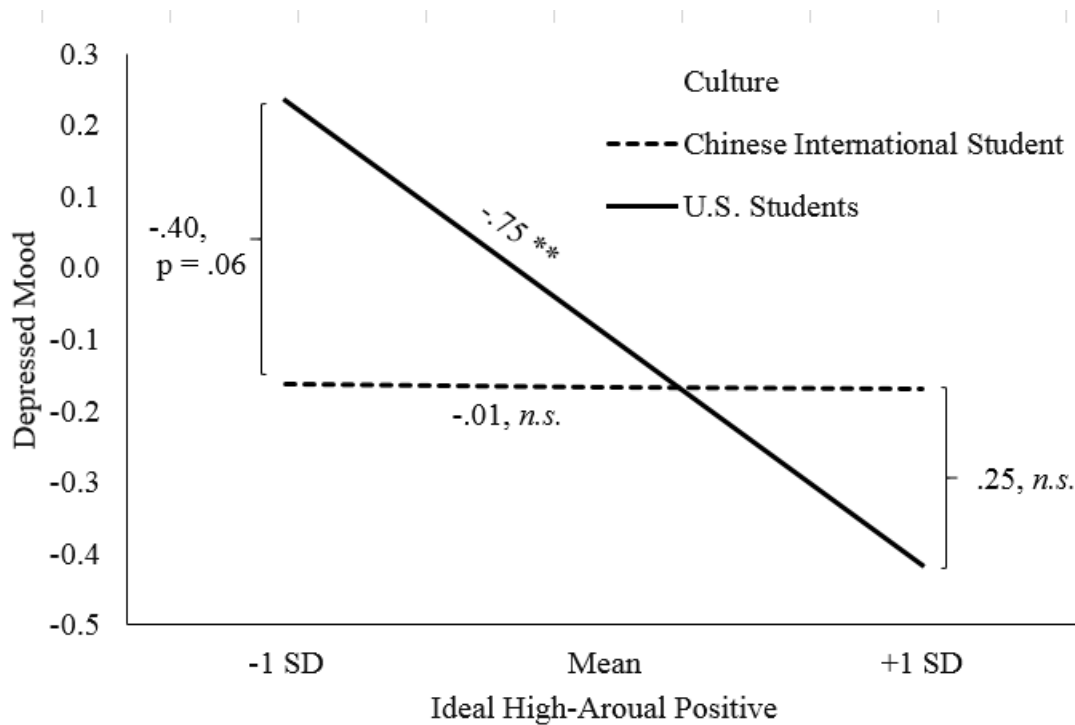
Figure 1.1. Interaction effect for ideal high-arousal positive affect and culture on depressed mood. The effect of ideal high-arousal positive affect on depressed mood is only significant for the U.S. students.

Table 1.3
Interaction Effects for Actual Affect and Culture on Depressed Mood

	b	SE	Beta	t	R^2	ΔR^2
<u>Step 1</u>					.00	-
Gender	-.05	.13	-.02	-.38		
Age	.01	.03	.02	.26		
<u>Step 2 – Main Effect</u>					.15	.15***
Culture	-.06	.13	-.03	-.40		
High-Arousal Positive Affect	-.70***	.11	-.38	-6.55		
					.26	.26***
Culture	.33**	.12	.16	2.71		
Low-Arousal Positive Affect	-.92***	.10	-.54	-9.39		
					.49	.49***
Culture	.17	.10	.08	1.71		

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Preponderance of Positive Affect	-.73***	.05	-.70	-15.43		
Step 3 – Culture ×						
High-Arousal Positive Affect	.36	.21	.15	1.71	.16	.01
Low-Arousal Positive Affect	.39*	.20	.19	2.00	.27	.01*
Preponderance of Positive Affect	-.01	.10	-.01	-.10	.00	.00

$* p < .05, ** p < .01, *** p < .001$

For actual affect (see Table 1.3), HAP affect did not significantly interact with culture – higher actual HAP affect was associated with lower depressed mood for both cultural groups. However, culture significantly moderated the association between LAP affect and depressed mood (see Figure 1.2). For both the U.S. and Chinese international students, experiencing more LAP affect was associated with low depressed mood, but this association was stronger for the U.S. students ($b = -1.13, p < .001$), as compared to the Chinese international students ($b = -.74, p < .001$).
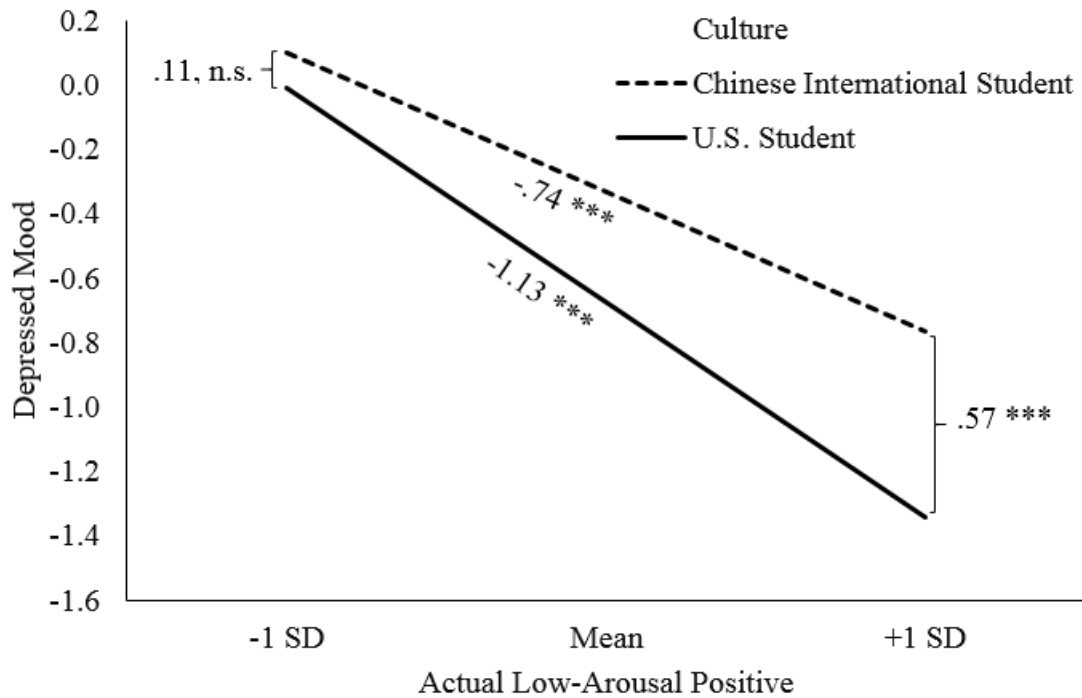
Figure 1.2. Interaction effect for actual low-arousal positive affect and culture on depressed mood. The effect of actual low-arousal positive affect on depressed mood is stronger for the U.S. students than Chinese international students.

Actual Affect as a Mediator of the Link between the Ideal Affect and Depressed Mood

I next tested hypothesis 3, if actual affect would mediate the path from ideal affect to depressed mood, and if the magnitude of this effect would be different across cultures using Mplus version 7.11 (Muthen & Muthen, 1998-2015). Analyses tested a direct path from ideal affect to depressed mood, as well as the indirect path from ideal affect to actual affect and depressed mood for both the U.S. and the Chinese international students. By constraining different paths, analyses were able to test the differences in the magnitude of the effects between the two samples (van de Schoot, Hoijtink, & Dekovic,

2010). I hypothesized that the U.S. students would have stronger indirect effect of ideal

HAP affect on depressed mood compared to the Chinese international students. In

contrast, the Chinese international students would have a stronger indirect effect of ideal

LAP on depressed mood, compared to the U.S. students. Because these mediation

analyses tested associations of affect and depressed mood within each culture, the raw

score of affect and depressed mood were used.

Mediation model of depressed mood regressed on HAP affect. As can be seen

in Table 1.4, for both cultures, higher ideal HAP affect was associated with higher actual

HAP affect ($b = .35$, $p < .01$ for the U.S. students and $b = .47$, $p < .001$ for the Chinese

international students), which in turn was associated with less depressed mood ($b = -7.33$,

$p < .001$ for the U.S. students and $b = -2.50$, $p < .05$ for the Chinese international

students). The direct effect of ideal HAP on depressed mood was not significant for either

culture, but the total effect combining the direct and indirect paths were significant for

the U.S. and Chinese international students in opposite directions. For the U.S. students,

having more ideal HAP affect lead in total (directly and indirectly) to lower depressed

mood, $b = -4.29$, $p < .01$. In contrast, having more ideal HAP affect was in total

associated with more depressed mood for Chinese international students, $b = 2.20$, $p <$

.05.

In order to test if the associations among affect and depressed mood were

significantly different across the two cultures, I constrained direct, indirect and total

effects of ideal HAP affect on depressed mood in the model, and compared the χ^2 change

between constrained and unconstrained models (see Table 1.4). Even though the direct

effect of ideal HAP affect on depressed mood was not significant for either culture, the

magnitude of this association was different across cultures, $\Delta\chi^2(1) = 8.13$, $p < .001$. Thus,

the U.S. students had more negative direct association between ideal HAP affect and

depressed mood than Chinese international students. The models were also significantly

differed in magnitude of indirect effect, $\Delta\chi^2(2) = 8.80$, $p < .05$, and total effect, $\Delta\chi^2(3) =$

26.03, $p < .001$, across cultures. The negative association from ideal to actual HAP affect,

and from actual HAP affect to depressed mood was stronger for the U.S. than Chinese

international students, and the total effect of ideal HAP affect on depressed mood was in

the opposite direction for the two cultures.

Mediation model of depressed mood regressed on LAP affect. The indirect

path from ideal to actual LAP affect to depressed mood was significant for the Chinese

international students, $b = -1.29$, $p < .05$, and at a trend level for the U.S. students, $b = -$

1.74, $p = .07$). Higher ideal LAP affect was associated with higher actual LAP affect for

Chinese international students, $b = .44$, $p < .001$, but only at a trend level for the U.S.

students, $b = .20$, $p = .06$. Higher actual LAP affect, in turn, was associated with lower

depressed mood for both cultures ($b = -8.55$, $p < .001$ for the U.S. students and $b = -2.93$,

$p < .05$ for the Chinese international students). The direct and total effects of ideal LAP

affect on depressed mood was not significant for either culture.

As can be seen in Table 1.4, there was no difference in the magnitude of the direct

effect across cultures. However, the models were significantly differed in the magnitude

of both the indirect effect $\Delta\chi^2(2) = 15.29$, $p < .001$, and the total effect, $\Delta\chi^2(3) = 19.22$, p

$< .001$. Thus, in contrast to our hypothesis, the indirect and total effect of ideal LAP

affect on depressed mood was stronger for the U.S. than Chinese international students.

Cultural Differences of Dialectical Versus Non-Dialectical Affect Styles and Their

Implications on Depressed Mood

In line with hypothesis 4, the U.S. students desired to maximize positive affect

more than Chinese students, $t\ (258) = 6.77$, $p < .001$. There were no significant mean

differences in actual preponderance of positive affect (see Table 1.1). In addition, I

computed correlation scores of all positive over all negative affective items for ideal and

actual affect. As correlation scores were computed within each culture, I used raw scores

instead of ipsatized scores. Consistent with previous research, the U.S. students had

stronger negative correlation of positive and negative affect overall, as compared to

Chinese international students. For ideal affect, the U.S. students desired to maximize

positive affect and minimize negative affect more, $r\ (106) = -.60$, $p < .001$, as compared

to the Chinese international students, $r\ (149) = -.38$, $p < .001$, and they actually also

experienced more homogenous sets of positive or negative affect, $r\ (106) = -.60$, $p <$

$.001$, compared to the Chinese international students, $r\ (149) = -.01$, $p < .001$.

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Table 1.4

Model Comparison of Mediation of Ideal and Actual Affect on Depressed Mood

Presumed Causal Variable	US Students				Chinese International Students				
	Actual Affect		Depressed Mood		Actual Affect		Depressed Mood		
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	$\Delta\chi^2$(df)
Ideal High-Arousal Positive Affect									
Direct Effect	.35**	.11	-1.73	1.40	.47***	.06	3.36	1.09	8.13** (1)
Indirect Effect	-		-2.55**	.88	-		-1.16*	.58	8.80* (2)
Total Effect	-		-4.29**	1.54	-		2.20*	.95	26.03*** (3)
Ideal Low-Arousal Positive Affect									
Direct Effect	.20	.11	-.12	1.22	.44***	.07	1.21	1.15	.63 (1)
Indirect Effect	-		-1.74	.95	-		-1.29*	.57	15.29*** (2)
Total Effect	-		-1.86	1.52	-		-.08	1.04	19.22*** (3)
Desire to Maximize Positive Affect									
Direct Effect	.26*	.12	-.78	.67	.20**	.06	.12	.60	1.02 (1)
Indirect Effect	-		-1.76*	.84	-		-1.34**	.46	.20 (2)
Total Effect	-		-2.55*	1.06	-		-1.22	.73	1.27 (3)

* $p < .05$, **$p < .01$, ***$p < .001$

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Hierarchical regressions showed that both the groups desire to maximize positive affect (see Table 1.2) and preponderance of positive affect (see Table 1.3) did not significantly interact with culture. Thus, positive affect was associated with less depressed mood in the same degree for both cultures. Furthermore, mediation analysis (see Table 1.4) showed that the indirect effect of desire to maximize positive affect on depressed mood was significant for both cultures ($b = -.16$, $p < .05$ for the U.S. students and $b = -.15$, $p < .001$ for the Chinese international students). Higher desire to maximize positive affect was associated with higher preponderance for positive affect ($b = .26$, $p < .05$ for the U.S. students and $b = .20$, $p < .01$ for the Chinese international students), which in turn was associated with lower depressed mood ($b = -6.79$, $p < .001$ for the U.S. students and $b = -6.80$, $p < .001$ for the Chinese international students). The direct effects were not different across the two cultures. The total effect was significant for the U.S. students, $b = -2.55$, $p < .05$, and only at a trend level for the Chinese international students, $b = -1.22$, $p = .09$. Model comparisons however showed that there were no significant difference in magnitude of direct, indirect, and total effects of desire to maximize positive affect across cultures.

Mixed Affect Typology

In order to examine the typology of mixed affect (positive over negative affect) for each culture, I employed Latent Class Analysis (LCA; Asparaouhov & Muthén, 2014; Nylund, Asparouhov, & Muthén, 2007) - a mixture modeling technique that identifies subgroups of individuals that are characterized by qualitatively different profiles of affect. The optimal number of classes was determined by the Bayesian Information

Criterion (BIC; Schwartz, 1978), Akaike Information Criterion (AIC; Akaike, 1974), and the p values for the Bootstrapped Likelihood Ratio Test (BLRT; Nylund et al., 2007). Smaller values of BIC and AIC indicate a better fit. The BLRT provides an estimate of significance (i.e., p value) for the test comparing models with k vs. k-1 classes (with no improvements between the k and k-1 models serving as a null hypothesis). Thus, a significant value for BLRT p values indicate a preference for the k class model and nonsignificant values indicate a preference of the k-1 class model.

Hypothesis 5 predicted that more U.S. than Chinese international students would have high ideal positive and low ideal negative affect, and across cultures, student who could actually experience a high actual positive and low actual negative affect would have less depressed mood. Compared to the U.S. students, I expected to observe more Chinese international students to have dialectical affect (moderate level of both positive and negative affect) for both ideal and actual affect, and I predicted that mixed (dialectical) affect would not be associated with higher depressed mood among the Chinese international students, as compared to the U.S. students.

As can be seen in Figure 1.3, participants desired more positive affect and less negative than they actually experienced across cultures. Table 1.5 shows the model fit statistics, indicating that the 4-group solution had the optimal fit for the U.S. students. However, as one group of the 4-group solution had only 2 participants, the 3-group solution was selected. The three groups are presented in Figure 1.4a. The majority of the U.S. students (58%) fell into the Unsuccessful Maximizers group – they desired to maximize positive and minimize negative affect, however their actual positive affect was relatively low and actual negative affect was relatively high. Over a third of participants

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(37%) were able to realize their desire to maximize positive affect over negative affect, and they were named Successful Maximizers. Only a small group of participants (5%) desired and experienced moderate levels of both positive and negative affect, and the group was named the Dialectical Affect group.

(a) Affect Means of the U.S. Students
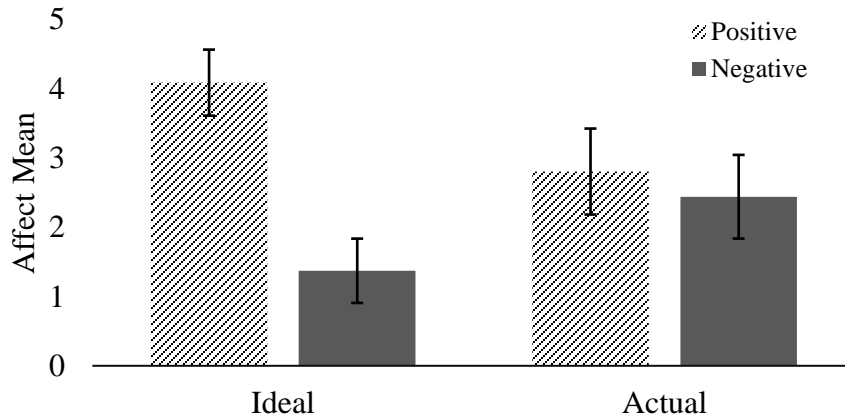
(b) Affect Means of Chinese International Students
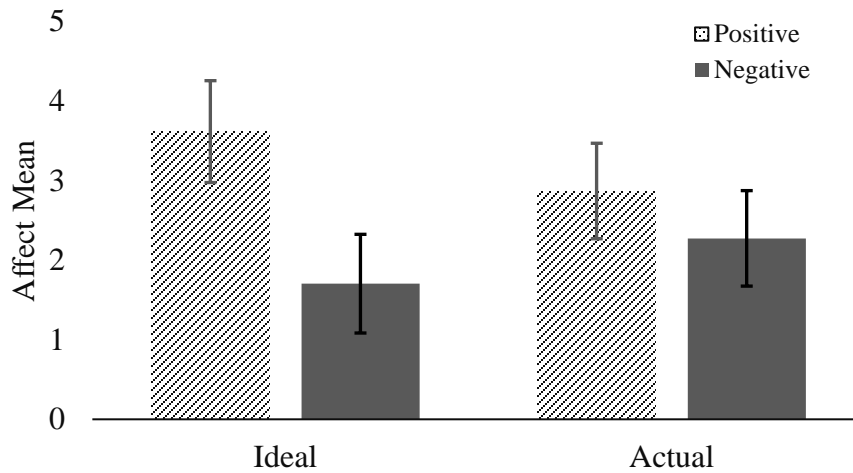
Figure 1.3. Mean and standard deviation for positive and negative affect ratings. Participants want to have more positive and less negative affect than their actual affective experience across cultures.

Table 1.5

Fit Statistics for the Latent Class Analysis Profiles

Models	Log Likelihood	# of Parameters	BIC	AIC	BLRT p value	Entropy
U.S. Students						
2 groups	-279.86	13	620.59	585.73	.00	1.00
3 groups	-262.94	18	610.17	561.89	.00	0.79
4 groups	-247.68	23	603.06	541.37	.00	0.83
Chinese International Students						
2 groups	-515.64	13	1096.50	1057.27	.00	0.91
3 groups	-483.34	18	1057.00	1002.68	.00	0.87
4 groups	-457.64	23	1030.67	961.27	.00	0.90
5 groups	-443.82	28	1028.12	943.64	.00	0.92

BIC = Bayesian Information Criterion; AIC = Akaike Information Criterion; BLRT = Bootstrapped Likelihood Ratio Test.

(a) Mean Affect Ratings of the U.S. students
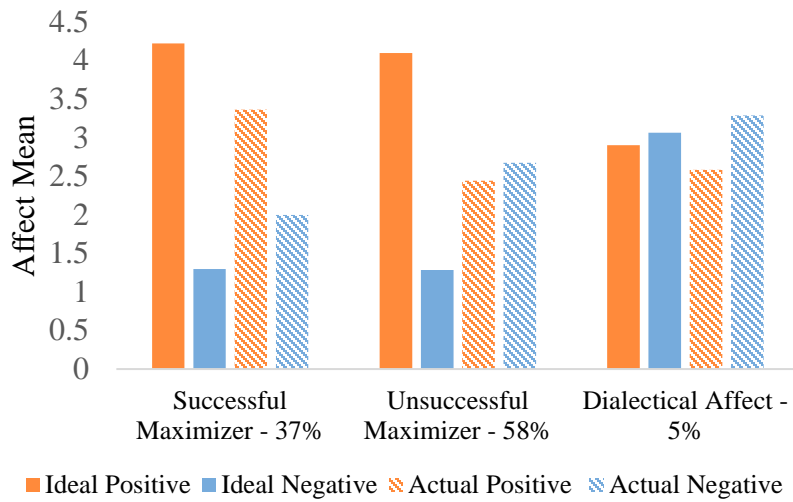
(b) Mean Affect Ratings of the Chinese International Students
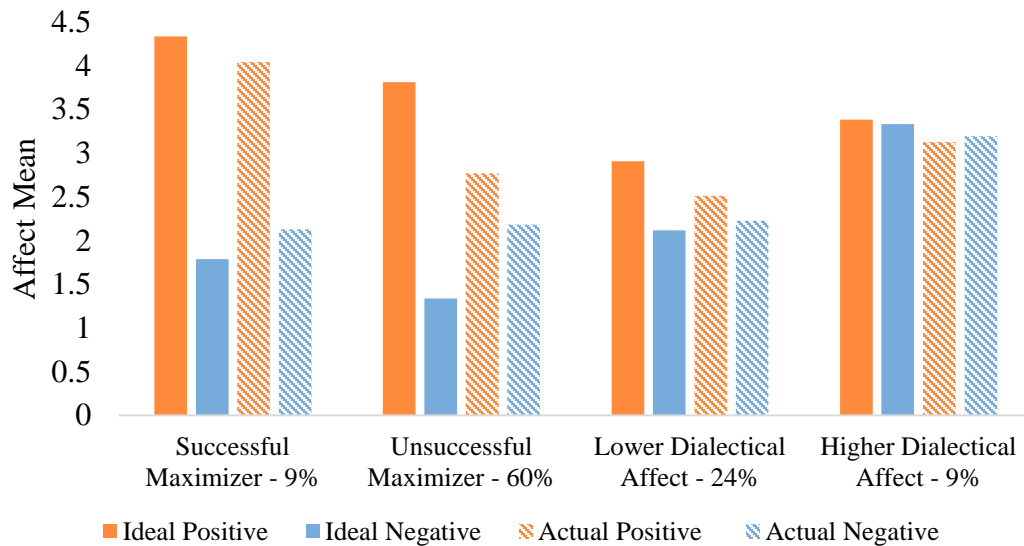
Figure 1.4. Mean affect ratings for the Latent Class Analysis. Chinese international students fall into non-dialectical affect styles less and dialectical affect styles more than the U.S. students.

For Chinese international students, Table 1.5 shows that the 5-group solution had optimal fit. However, there were only 5 participants in one of the groups identified by the 5-group solution. Thus, the 4-group model was selected. Figure 1.4b presents the four

affect profiles. Majority of participants (60%) fell into the Unsuccessful Maximizers group, and a small group of participant (9%) belonged to Successful Maximizers. 22% of participants belonged to Lower Dialectical Affect group — they desired to have dialectical affect and experience positive and negative affect both at lower frequency. The rest participants (9%) fell into Higher Dialectical Affect — they desired to have dialectical affect and experience a higher frequency of positive and negative affect.

I next examined if these affect groups were associated with differences in depressed mood across cultures. For the U.S. students, average levels of depressed mood were significantly different across the three groups: χ^2 (2) = 124.20, $p < .001$, with $M = 12.57$, $SE = 1.08$, and 33% were at risk (a total score equal or greater than 16) for Successful Maximizers, $M = 26.51$, $SE = .98$, and 92% at risk for Unsuccessful Maximizers, and $M = 30.40$, $SE = 1.89$, and 100% at risk for the Dialectical Affect group. Successful Maximizers had significantly lower depressed mood than the other two groups (χ^2 [1] ranging from 67.28 to 99.19, all p's $< .001$). The Dialectical Affect group experienced the highest depressed mood, different at trend level from the Unsuccessful Maximizers, χ^2 (1) = 3.33, $p = .07$. Next, ANCOVA were used to examine whether group differences in depressed mood can be explained by group differences in actual negative affect. Before actual negative affect was added to the model, there were significant group differences in depressed mood for the U.S. students, F (2, 105) = 39.82, $p < .001$. When actual negative affect was controlled as a covariate, group differences were still

significant, F (2, 104) = 8.23, p < .001, which suggested that the mean differences in depressed mood across groups were not entirely due to differences in actual negative affect.

For the Chinese international students, there were also significant differences in average levels of depressed mood across groups: χ^2 (3) = 17.38, p < .001, with M = 12.60, SE = 4.19, and 36% were at risk for Successful Maximizers, M = 17.88, SE = 1.02, and 58% were at risk for Unsuccessful Maximizers, M = 18.83, SE = 1.26, and 74% were at risk for Lower Dialectical Affect, and M = 29.04, SE = 2.73, and 92% were at risk for Higher Dialectical Affect group. Similar to the U.S. students, Higher Dialectical Affect experience the highest level of depressed mood than the other classes, (χ^2 [1] ranging from 10.58 to 14.70, all p's < .001). Even though not reaching statistical significance, Successful Maximizers had trend-level lower depressed mood compared to Unsuccessful Maximizers and the Lower Dialectical Affect group. Before actual negative affect was added to the model, there were significant group differences in depressed mood, F (3, 146) = 7.13, p < .001. However, when actual negative affect was controlled as a covariate, the mean differences of depressed mood became non-significant, F (3, 144) = 1.73, p = .17.

Chapter Six: Study 1 Discussion

The current study is the first to investigate the associations between the link from ideal to actual affect and depressed mood across the U.S. and Chinese cultures. According to Affect Valuation Theory (AVT), cultural factors mainly shape ideal affect, which are reflected by different levels of ideal HAP and LAP affect reported by individuals from American and East Asian cultures (Tsai & Park, 2014). Study 1 results partially supported the tenet of AVT by showing that the U.S. students wanted to experience higher frequency of HAP affect than Chinese international students. However, the results did not find a significant difference for ideal LAP affect between the two samples. Instead, the cultural difference in LAP affect emerged in actual affect, as Chinese international students reported higher levels of actual LAP affect than the U.S. students.

One possible explanation for the contradictory finding for ideal LAP affect is that there may be within-cultural variations in actual affect that are differentially represented among the homeland Chinese, Chinese American, and Chinese international student samples. Chinese international students may have lower ideal LAP affect than Chinese immigrants or Chinese students living in China. Sociological theories of emotion have pointed out that cross-cultural comparisons should take into account how feelings, and

expectations related to them might change over time within culture under the impact of significant social events, economic and political changes (Lively & Weed, 2016). Most studies examining cultural differences in ideal affect recruited immigrants from East Asian countries. As most participants came to the United States several decades ago (college participants mainly contacted their heritage culture through their parents), their values of affect may be more traditional than those for Chinese international students who have recently arrived at this country (Tsai et al., 2006). Chinese Americans or East Asian Americans may value LAP affect more than this new generation of Chinese international students, so previous research based on immigrants as a cultural comparison sample may observe a bigger effect of cultural difference in ideal LAP affect than the current study. In addition, Chinese culture is diverse and heterogenous and different sub-regions within China may have different manifestations of cultural expectations, which in turn may lead individuals to have different related affective experiences (Oyserman, Coon, & Kemmelmeier, 2002; Talhelm et al., 2014). Thus, the lack of support of cultural differences for ideal LAP affect may be, alternatively, due to the effect of regions which participants have resided in China. It will be important for future studies to take these alternative possibilities into consideration.

Contradictory to the AVT tenet that cultural factors influence actual affect less (e.g., Tsai et al., 2006), the current study showed that Chinese international students experienced higher frequency of LAP affect than the U.S. students. One alternative

explanation may account for this unexpected finding. The Chinese international students in the current sample were not involved in many close social interactions with their American peers, which may indicate a lack of engagement in practices or activities that are typical in the U.S. culture. I collected data on participants' time spent with close friends from the U.S. culture and Chinese culture. The Chinese international students had spent significantly less time interacting with the U.S. friends than friends from their home country during weekdays and weekends, which may suggests lower exposure to typical high-arousing activities associated with the U.S. culture and more exposure to passive collective and calm activities that are typical in Chinese culture (De Leersnyder, Boiger & Mesquita, 2013; Gobster & Delgado, 1992), which in turn may lead to experiences of higher frequency of actual LAP affect.

The AVT suggested that HAP affect has more important implications for subjective well-being and mental health for American culture, whereas LAP affect is more important for East Asian culture (Tsai et al., 2006). The current study predicted that higher HAP affect would be associated with lower depressed mood for the U.S. students, and higher LAP affect would be associated with lower depressed mood for Chinese international students specifically. The hypothesis was partially supported by results which showed that increased ideal HAP affect was protective only for the U.S. students against depressed mood. The association of ideal HAP affect and depressed mood was not significant for Chinese international students. The same trend of results was not found

for actual HAP affect, which indicated that unlike ideal affect, actual HAP affect has the same degree of influence for both samples. Furthermore, results showed that actual HAP affect mediated the association between the ideal HAP affect and depressed mood differently for the two samples. Specifically, ideal HAP affect had a stronger influence in reducing depressed mood through increasing actual HAP for the U.S. students, as compared to Chinese international students. Additional comparisons of direct and total effects of ideal HAP affect on depressed mood across cultures also confirmed the tenet of the AVT that ideal HAP affect was more functional against depressed mood for the U.S. students than Chinese international students.

Interestingly, the study did not find cultural differences in the associations between ideal LAP affect and depressed mood, indicating that ideal LAP affect is beneficial to the same extent for both the U.S. students and Chinese international students in reducing depressed mood. Furthermore, in contrast to my hypothesis, the actual LAP affect was more strongly associated with lower depressed mood for the U.S. students than Chinese international students, indicating a more beneficial effect of LAP for the U.S. culture compared to the Chinese culture. Mediation analysis also showed a greater magnitude of indirect effect of ideal LAP affect on depressed mood through actual LAP affect for the U.S. students than for Chinese international students. And additional comparisons showed that the total effect of ideal LAP affect on depressed mood was significantly stronger for the U.S. students. This difference in the effect of ideal LAP on

depressed mood was mainly driven by the different magnitudes of the indirect mediated

pathway. As results revealed that higher actual LAP affect was more strongly associated

with lower depressed mood for the U.S. students, the indirect effect of ideal LAP affect

on depressed was consequently also stronger for the U.S. students. This finding for

stronger importance of actual LAP affect in the U.S. than Chinese sample is contrary to

our original hypothesis. However, this finding makes sense when examined in the context

of mean differences in actual LAP affect across the two groups. The U.S. students

reported very low levels of LAP affect (mean = .10 for the U.S. students as compared to

mean = .49 for the Chinese international students). Thus, it is possible that having a

higher LAP affect in the U.S. sample is more vital for positive adjustment. LAP affective

states have been observed to be associate with health. For example, higher LAP affect is

associated with lower inflammatory activity (Moreno, Moskowitz, & Ganz, 2016), and

decreased serum lipids (Shirom, Melamed, Berliner, & Shapira, 2009) which are bio-

markers for cardiovascular health (Grundy, 2008). Thus, having adequate levels of LAP

affect maybe important for well-being and health across cultures. However, as American

cultural context is more excited and arousing than the East Asian cultural context (Tsai,

2007), LAP affect experiences may be a more protective for well-being and health in the

American culture.

In addition to HAP and LAP affect, the current study also investigated cultural

differences of the non-dialectical versus dialectical affect style. Consistent with previous

research, participants across cultures desired more positive and less negative affect, although their actual experiences did not match this preference. Within-person measures showed that the U.S. students had higher desire to maximize positive affect and minimize negative affect, as compared to the Chinese international students, and this cultural difference was not observed in actual affect. The typology method was more illuminating. Results supported the hypothesis by showing that the U.S. students were more likely to fall into the non-dialectical ideal affect styles. Specifically, more U.S. students than Chinese international students fell into Successful Maximizer and Unsuccessful Maximizer groups. Chinese international students, in contrast, were more likely to fall into dialectical ideal affect styles than the U.S. students. Taken together, results suggest that culture shapes preferences for positive affect over negative affect.

Few cross-cultural studies has investigated the function of non-dialectical vs. dialectical affect style on subjective well-being and mental health. Previous research has consistently shown that higher positive affect and lower negative affect is associated with better physical health and mental health in general (Kiecolt-Glaser et al., 2002; Kring, 2001; Lyubomirsky et al., 2005; Pressman & Cohen, 2005), but cross-cultural research also suggested that a balance of positive and negative affect is beneficial for individuals from East Asian culture (Miyamata & Ryff, 2011). The current study extended previous research by investigating the effects of dialectical/non-dialectical affect styles across cultures. Results partially supported the hypotheses by showing that higher desire to

maximize positive affect and higher preponderance of positive affect were associated

with lower depressed mood to the same extent across cultures. Preponderance of positive

affect mediated the association of desire to maximize positive affect with depressed mood

for both the U.S. students and Chinese international students. However, contradictory to

the hypotheses, the magnitude of the indirect mediated effect was not different between

the samples, which may indicate that the effect of wanting to maximize positive affect

and minimize negative affect on reducing depressed mood through promoting higher

actual positive and lower negative affect is similar across cultures.

Furthermore, LCA results supported the hypothesis by showing that Successful

Maximizer class (those who desired to maximize positive affect and actually experienced

more positive affect) had the lowest levels of depressed mood for the U.S. and in trend

for Chinese international students. Compared to Successful Maximizers, the

Unsuccessful Maximizers (those who desired to maximize positive affect and minimize

negative affect but fail to do so) had higher depressed mood for the U.S. students and in

trend for Chinese international students. The cultural differences mainly emerged in the

ideal and actual dialectical affect styles. Specifically, the U.S. students with the

Dialectical Affect style (5% of the U.S. sample) experienced moderately high levels of

both positive and negative affect, and also had the highest depressed mood. About 9% of

Chinese international students also fell into a Dialectical Affect style group with

relatively higher level of actual positive and negative affect had the highest levels of

depressed mood. However, about 24% of Chinese international students had Dialectical

Affect style with lower-level actual positive and negative affect. This group had

intermediary levels of depressed mood. It is possible that the Dialectical Affect group

with higher actual positive and negative affect has higher depressed mood due to this

group's higher levels of actual negative affect, which in turn might be associated with

experience of more depressed mood (Bastian, Kuppens, De Roover, & Diener, 2014; Leu

et al., 2011).

The finding that the Unsuccessful Maximizers had better depressive mood

outcomes than the High Dialectical Affect groups in both the U.S. and Chinese samples is

unexpected, given that the patterns of ideal and actual affect for the Unsuccessful

Maximizers group are characterized by a greater miss-match between the ideal and actual

affect. It is possible that actual negative affect is more important for depressed mood than

the degree of mismatch (or disappointed expectations), as the Unsuccessful Maximizers

group had higher mismatch but lower actual negative affect than the High Dialectical

Affect group.

In sum, results suggest that non-dialectical affect style (wanting to maximize

positive and minimize negative affect) is a protective against depressed mood across

cultures, and this protective effect is likely due to promoting individuals to actually

experience the non-dialectical affect. Culture shapes proportions of individuals in each

group, as well as the magnitudes of actual affect in the Dialectical Affect groups (with

Chinese students with dialectical affect also having predominantly lower-level actual affect). This lower-level dialectical affect appears to be less deleterious for depressed mood than the dialectical affect style with moderately-high actual affect.

Strengths and Limitations

The current study extended literature on cross-cultural difference in affect in several important ways. First, the current study extended AVT by investigating the implications of ideal and actual affect for mental health. The AVT pointed to a greater importance of HAP affect for European Americans and LAP affect for East Asians in regard to depressed mood (Tsai et al., 2006). However, previous research examined the relative position of ideal and actual affect, and did not account the effect of actual levels of affect. The current study extended the previous research by showing that higher ideal HAP is negatively associated with depressed mood for the U.S. students but not for Chinese international students, and it might due to the fact that the U.S. students can boost up their actual HAP affect more effectively.

Second, plenty of research has investigated cultural differences of dialectical versus non-dialectical affect style (e.g., Grossmann et al, 2011), but few study has examined the cultural differences of the affect styles on the basis of ideal and actual affect (e.g., Sims et al., 2015). I further explored the research not only by incorporating measures in models of ideal and actual affect, but also by conducting latent class analyses that accounted for both the levels of affect and the levels of one affect type relative to the

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other. Both within-person measure and LCA results confirmed the AVT theory by showing that culture influences ideal affect, as the U.S. students desired to maximize positive affect and fell into non-dialectical ideal style (indicating by Successful Maximizer and Unsuccessful Maximizer) more than Chinese international students. In addition, few studies has investigated association of dialectical affect with subjective well-being and mental health (Sims et al., 2015).

The current study should be interpreted in light of several limitations. First, it applied a cross-sectional study design. Thus, I was not able to observe a change of affect over time. AVT proposed that cultural factors shape individuals' ideal affect (e.g., Tsai et al., 2006; Tsai et al., 2007). Therefore, moving to a new culture may drive individuals to change their ideal affect to be closer to the affect pattern of the host culture. In addition, although it is reasonable to speculate that ideal affect would lead to differences of actual affective experiences (Tsai, 2013; Tsai & Park, 2014), I was not able to test the directionality of this association. Alternatively, it is also possible to imagine the reverse direction of effect. For example, Chinese international students who have experienced higher frequency of HAP affect in the U.S. culture may find it rewarding (Park, Tsai, Chim, Blevins, & Knutson, 2016) and desire to have more HAP affect. Longitudinal studies need to be conducted to test these questions.

Unlike previous research which recruited immigrants and their counterparts who lived in the heritage culture, the current research recruited a sample of Chinese

international students in comparison to the U.S. students. Chinese international students were likely to experience some degree of acculturation, which in turn may influence the affect experience. For example, individuals who are more orienting to the U.S. culture may be more connected with American society (Zhang & Goodson, 2011) and engage in typically-Western high-thrill activities (Matsumoto & Hwang, 2012). Although studies suggest that culture may influence ideal affect and ideal affect may, in turn, influence actual affect, studies that directly examined cultural differences in actual affect did not uncover significant differences in actual affect of European American and East Asian participants (Tsai et al, 2006, Tsai, Miao et al., 2007). It may due to the reason that their ideal and actual affect experience may change under the influence different levels of orientation to the U.S. culture, so it is important to account the acculturation of Chinese international students into the models of current study.

Another consideration in interpretation of cultural differences in affect experiences is the within-cultural variation. Different regions within a country may be varied in the cultural ideals and traditions, which in turn may lead to a variation in affect experience. For example, Hong Kong Chinese are more likely to experience mixed affect (balance of positive and negative,) compared to Beijing Chinese (Sims et al., 2015). Unfortunately, the current study did not have data in relation to specific regions of participants' homeland. Future studies need to control for this within-cultural variation in cross-cultural comparisons.

Finally, the measure of ideal and actual affect in the current study assessed frequency of emotional experiences over a typical week, failing to account the effect of a specific situations on participants' experience. For example, participants who currently have midterm exams may alter their ideal affect as a way to regulate their actual affect experience compared to participants who do not have midterms. Thus, it is important for the future research to control significant situations that may have an impact on reported frequency of affect.

Implications

The current study has both theoretical and practical implications. It has explored AVT theory by examining implication of affect on depressed mood more comprehensively. It supports AVT by showing that HAP affect is more important for the U.S. culture in relation to depressed mood. It also underlines an alternative possibility that LAP affect is not only important for East Asian culture, but even more so for the U.S. students in relation to depressed mood. Thus, it is important for the future research to further explore the nature and functions of LAP affect. Results further suggest that wanting to experience more positive and less negative affect in general has beneficial effect for subjective well-being, but the effect depends on the degree of actual affect that people can promote to be closer to their ideal affect. Specifically more U.S. students appear to be able to effectively regulate their actual HAP in accordance with their desired affect.

The results may have practical implication for the Chinese international students whose exposure to the U.S. culture is inevitable. Being able to regulate HAP affect experience to approach the one of the U.S. students may assist Chinese international students to adjust their lives in American culture more successfully. Results further indicate that it may be practical for Chinese international students to desire for a positive non-dialectical affect style, which in turn may promote them to experience more positive and less negative affect. Results suggest that when individuals who want to maximize positive affect and minimize negative affect are able to fulfil this affective goal, they are more likely to have optimal health condition. Thus, it is also important for Chinese international students to be engaged in cultural practices or interactions that can help them to up-regulate actual positive affect and down-regulate actual negative affect.

Different from immigrant population, international students living in the United States may be in their early stage of acculturation process. Thus, this population provides a unique chance for researchers to examine trajectories of affect experience over time. The current study has limited implications from results based on the cross-sectional design. It will be important to conduct longitudinal research to investigate several research questions that previous research has proposed and the current research has educed: 1) Do emotion change or acculturate over time? 2) Are affect experiences associated with individuals acculturation over time? 3) Does ideal affect regulate actual

affect experience or vice versa? 4) Does affect experience predict individuals depressed

mood, and does acculturation have an impact of this association?

Chapter Seven: Study 2 Abstract

Cross-cultural research has proposed that emotions undergo acculturative changes, with patterns of emotions experienced by immigrants becoming more similar to patterns of emotions of individuals in the host culture (De Leersnyder, Mesquita, & Kim, 2011). Furthermore, greater emotional acculturation is associated with better cultural adjustment (De Leersnyder et al., 2013). The current study aims to investigate whether ideal and actual affect of Chinese international students will undergo similar acculturative changes, and if changes of ideal and actual affect is associated with changes in depressed mood over the course of one year. The study hypothesizes that over time participants' levels of ideal affect will become closer to the ideal affect of individuals from American culture, and these changes will be larger for those with higher orientation to the U.S. culture (i.e., higher acculturation). In addition, participants' association between affect and depressed mood will become more similar to the associations observed in individuals from the American culture, and this effect will be stronger for the more acculturated individuals. Results did not find a significant systematic linear change for ideal affect over the course of the year in this sample, but ideal affect styles of participants at time 3, not at time 1, resembled ideal affect styles in American culture. The amount of time participants stayed in the United States moderated the associations between affect and

depressed mood. Whereas orientation to the U.S. culture did not significantly moderate these associations, and it did not have a significant effect in moderating the indirect effect of ideal affect on depressed mood (*ideal affect at time 1 → actual affect at time 2 → depressed mood at time 3*).

Chapter Eight: Study 2 Introduction

Previous research has shown that European Americans value high-arousal positive (HAP) affect more and low-arousal positive (LAP) affect less than Chinese and Chinese Americans (Tsai et al., 2006; Tsai et al., 2007). This difference is more striking for the comparison between European Americans and East Asians/Chinese participants than the comparison between European Americans and Asian American/Chinese Americans. For example, a study showed that Asian Americans and European Americans had similar ratings for ideal HAP affect, which were higher than those for Hong Kong Chinese. In contrast, Asian Americans value LAP affect more than European Americans and the same as Hong Kong Chinese (Tsai et al., 2006). Another study showed that Chinese American reported similar levels of ideal HAP affect as European Americans and higher levels of ideal HAP than Hong Kong Chinese participants. They also valued more LAP affect than both European Americans and Hong Kong Chinese Americans (Tsai, Miao et al., 2007). The research has suggested that Chinese Americans' cultural orientation to both the U.S. and East Asian cultures contributes to their intermediated scores for their desired HAP affect and LAP affect (Tsai & Clobert, 2016). Together, these findings do not only indicate a strong cultural influence on ideal affect, but also

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suggest a possibility that ideal affect may change or acculturate when individuals are

changing their cultural contexts.

Cultural Differences in Affect

Research on cross-cultural differences in affective experiences has demonstrated

cultural differences in how individuals value affect (ideal affect) and the degree to which

they desire/and experience more positive than negative affect. American culture values

excitement and other HAP affective states more than East Asian cultures, and East Asian

cultures values calm and LAP affective states more than the American culture (Tsai,

2013; Tsai & Park, 2014). The differences in value placed on HAP and LAP affect have

consequences on individuals' behaviors and actual affect. People who value HAP affect

more will be more likely to be involved in exciting behaviors and activities, such as

listening to loud and fast music, to induce actual HAP affect, whereas people who value

LAP affect will be more likely to be involved in calm behaviors and activities, such as

listening to calm music, to induce actual LAP affect (Tsai, 2007; Tsai, 2013).

Culture also shapes how individuals value positive and negative affect. East Asian

cultures value balance of positive and negative affect more than American culture (Tsai

& Clobert, 2016). For example, one study found that European Americans and Chinese

Americans wanted to feel more positive and less negative affect compared to Hong Kong

Chinese and Beijing Chinese (Sims et al., 2015). The cultural differences in maximizing

positive and minimizing negative affect also have consequences for affective experiences

and health (Tsai & Clobert, 2016). For example, European Americans experienced more

positive and less negative affect compared to Chinese participants, and these differences

were due to the fact that European American desire to maximize positive and minimize

negative affect more than Chinese participants (Sims et al., 2015). One study found that

experiencing a mostly positive dialectical affect (more positive and less negative affect)

was associated with better physical health outcomes across cultures, but experiencing a

moderate dialectical affect (moderate levels of both positive and negative affect) was

only functional for East Asian participants (Miyamata & Ryff, 2011).

Emotional Acculturation and Its Implication on Well-being and Mental Health

Research on cultural differences in emotion suggests that affect will change to

resemble affect of the host culture if individuals have stayed in the new culture long

enough (De Leersnyder et al., 2011). Emphasizing the social functions of emotional

experiences, sociologically-grounded theories proposed that emotions are socialized by

learning the expectations, rules, practices, and consequences of emotional experiences

and displays (lively & Weed, 2016). Similarly, theories focusing on the social perspective

on emotions, propose that emotional experiences develop and change due to influences of

social communication and interactions (Johnson, 1992). For example, studies showed that

emotional responses of dating partners and college roommates become more and more

similar over the course of a year (Anderson, Keltner, & John, 2003), and an individual's

mood could be influenced by the collective mood of a group he or she is involved in

(Totterdell, 2000). Thus, in the context of a new culture, emotional experiences may be shaped by social interactions with native residents or other cultural practices to become more similar to the one of the host culture. Although still limited, emerging research on emotional acculturation suggests that emotions do acculturate, and emotional acculturation has been operationalized by examining the levels of convergence of emotional patterns of one cultural group with the emotional patterns of the host culture (De Leersnyder et al., 2011; Tsai & Clobert, 2016). For example, De Leersnyder and her colleagues (2011) developed the Emotional Patterns Questionnaire to measure the degree of emotional acculturation of immigrants. The questionnaire asked participants to rate their emotions (defined by valence and engagement) in different situations, and then computed a pattern of emotional intensity for each individual from a given culture. Their study revealed that the more immigrants were exposed and engaged in the host culture, the more similar their emotional patterns were to their host culture. Thus, emotional acculturation research suggests that as individuals become more acculturated to their host culture, their emotional experiences become increasingly similar to those of natives of the host culture (Liem, Lim, & Liem, 2000). For example, one study showed that East Asian college students who lived in Canada had different positive-negative affect association when they identified with Western or East Asian culture. When they identified themselves with a Western culture and spoke a non-Asian language, their positive and negative affect were negatively associated, which was a less dialectical affect style that

Westerners have more commonly experienced. When they identified with an East Asian

culture and spoke an Asian language, the negative association disappeared, representing a

more dialectical affect style typically experienced by East Asians (Perunovic, Heller, &

Rafaeli, 2007).

Emotional acculturation may be important for individuals' successful adjustment

to a new culture. Previous research has suggested that attaining the emotion ideals of

one's culture is associated with positive adjustment (De Leersnyder et al., 2013). For

example, American and Japanese students report higher levels of emotional well-being

when their emotions are fitting their cultural ideals. Specifically, American participants

who experience more positive disengaging emotions (i.e., pride, superiority) and

Japanese participants who experience more positive engaging emotions (i.e., respect,

sympathy) report higher levels of well-being (Kitayama, Mesquita, & Karasawa, 2006).

The beneficial effects of cultural congruency in emotional experiences may also be

applied to individuals who are not living in their heritage cultures. Indeed, emotional

acculturation has been found to be highly functional for immigrants and to have positive

effects on individual's physical health and psychological well-being (Consedine,

Chentsova-Dutton, & Krivoshekova, 2014; De Leersnyder, Kim, & Mesquita, 2015; De

Leersnyder, Mesquita, Kim, Eom, & Choi, 2014; Tsai & Clobert, 2016). Studies showed

that immigrants whose emotional patterns were closer to the patterns of their host culture

had greater levels of well-being, such as fewer depressive symptoms and more satisfaction with their social relationships (De Leersnyder et al., 2014, 2015a).

Even though researchers have started to accumulate evidence of emotional acculturation and have investigated its associations with psychological well-being and mental health, most findings have been based on cross-sectional studies that compared participants of different countries of origin. It remains to be seen whether within-individual acculturative changes are also associated with changes in psychological outcomes. Thus, it is important for researchers to examine emotional acculturation longitudinally when individuals are changing their cultural context.

Acculturation and Psychosocial Adjustment

Although research on emotional acculturation is relatively fledgling, the construct of acculturation has been extensively studied. Acculturation has been defined as a change in a group member's world view (Graves, 1967), behavior, values, knowledge, and cultural identity (Kim & Abreu, 2001) due to the continuous first-hand contact with another culturally distinct group. Acculturation has been measured along two dimensions — adherence to the home culture or to the host culture (Berry, Kim, Minde, & Mok, 1987), and research suggests that adherence to the host culture in general is associated with better psychosocial outcomes. For example, among Chinese international students in the U.S., the more they adhere to the U.S. culture, the more they are likely to feel connected with American society (Zhang & Goodson, 2011). This greater sense of social

connectedness to the U.S. mainstream culture, in turn, is associated with lower depression and fewer sociocultural adjustment difficulties. Similar findings have also been observed among Korean Americans (Yoon, Lee, & Goh, 2008). Furthermore, assimilation is related to fewer depressive symptoms for East Asian students in Germany (Shim, Freund, Stopsack, Kämmerer, & Barnow, 2014) and Russian immigrant adolescents in Israel (Turjeman, Mesch, & Fishman, 2008). A meta-analysis (Gupta, Leong, Valentine, & Canada, 2013) of 38 Asian American acculturation studies found that assimilation is negatively associated with depressed mood, though the magnitude of this association is small. In contrast, adherence to the heritage culture is not associated with depressed mood. These findings indicate that for Asian Americans or East Asians who are moving to the United States, orienting to the new culture may act as a protective factor and hence protect them from internalizing problems.

Emotional Acculturation and Orientation to the U.S. Culture in the Context of AVT and Dialectical Affect Style

Previous research has proposed that the fit between emotional patterns of immigrants and emotional patterns of inhabitants in the host culture is an indicator of emotional acculturation, which in turn is associated with immigrants' well-being and mental health (De Leersnyder et al., 2011; De Leersnyder et al., 2014). However, there are no studies examining the effects of acculturation and emotional acculturation directly. A few studies have indirectly investigated emotional acculturation and acculturation

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together. One study using indirect measures of acculturation (i.e., language, time spent in the host culture) showed that the degree of exposure to a host culture is positively associated with immigrant's emotional acculturation (De Leersnyder et al., 2011), However, in the absence of longitudinal data, I do not know whether acculturative changes in world view precede or follow changes in emotional acculturation.

According to AVT (Tsai, 2013; Tsai & Park, 2014), people try to bring their actual affect closer to their ideal affect by engaging in mood-related behaviors that are associated with their ideal affect. Orienting to the host culture may motivate individuals to be more exposed to cultural practices and more engage in the typical mood-related behaviors of the host culture, which in turn may promote changes in both ideal and actual affect. Alternatively, individuals whose emotional profiles are closer to affect patterns of the host culture may find it easier to acculturate (by finding it easier and more rewarding to engage in social interactions or participate in the typical mood-related behaviors of the host culture). Thus, the association between emotional acculturation and orientation to the host culture might be bi-directional.

Acculturation may also influence the associations between emotional experiences and subjective well-being or mental health. As research has suggested the importance of congruency of emotional experiences and cultural ideals on subjective well-being (De Leersnyder et al., 2013), psychosocial well-being may depend on the degree of fit between the emotional acculturation and cultural orientation. As such, a related cross-

sectional study of international students from China has shown that orientation to the U.S. culture moderated the links between ideal affect and depressed mood, with greater negative association among the more acculturated students (Lin & Dmitrieva, under review). Specifically, desire for more ideal HAP affect was associated with higher actual HAP affect, which in turn was associated with lower depressed mood. However, this indirect pathway was only significant for those who had higher orientation to the U.S. culture.

The Current Study

The current study examined longitudinal changes and associations among ideal and actual affect, cultural orientation, and depressed mood of Chinese international students attending a university in the U.S. Based on the previous research and Study 1 results, the current study raises several main questions. First, I aim to investigate if affect will acculturate by analyzing participants' affect experiences over three time points across the one-year course of the study. Second, I aim to explore if participants' affect is a predictor or outcome of orientation to the U.S. culture. Third, I aim to examine if participants' ideal affect predicts subsequent actual affect. Fourth, I aim to investigate if emotional acculturation can decrease participants' depressed mood, and if the associations of affect and depressed mood will be moderated by participants' levels of acculturation. Finally, I aim to investigate if participants' affect styles and their

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associations with depressed mood will change from time 1 and 3. In addition, I will test if orientation to the U.S. culture at time 1 is associated with affect styles at time 3.

Specific aims and hypotheses.

Aim 1. To examine emotional acculturation and its association with the orientation to the U.S. culture.

Hypothesis 1. Based on AVT, I predict that participants' ideal and actual HAP affect will increase, and ideal and actual LAP affect will decrease over time. In addition, participants will desire to maximize positive affect more, and actually increase their preponderance of positive affect over time. Higher orientation to the U.S. at time 1 will predict an increase in ideal and actual HAP affect, desire to maximize positive affect and preponderance to positive affect, and predict a decrease in ideal LAP affect over time. Furthermore, I predict that orientation to the U.S. culture will become higher on average over time, and this change will be associated with changes of ideal affect.

Hypothesis 1 Alternative. Based on the results of Study 1, I alternatively predict that participants' ideal LAP affect will be maintained at the same level and preponderance of positive affect will not change significantly over time either.

Aim 2. To test the directionality of the associations between affect and orientation to the U.S. culture.

Hypothesis 2. Participants' affective experiences and levels of orientation to the

U.S. culture will predict each other over time. Specifically, higher HAP affect for

both ideal and actual affect will bi-directionally predict higher orientation to the

U.S. culture at a later time point, and vice versa. Higher LAP affect for both ideal

and actual affect will predict lower orientation to the U.S. culture at a later time

point, and vice versa. Non-dialectical affect, both for ideal and actual affect, will

predict higher orientation to the U.S. culture at a later time point, and vice versa.

Aim 3. To test the directionality of the association between the ideal and actual

affect.

Hypothesis 3. Participants' earlier ideal affect will predict their actual affect at a

later time point. Specifically, participants who desire for more HAP, LAP affect

and desire to maximize positive affect will experience higher level of the same

actual affect later (HAP, LAP affect and preponderance of positive affect).

Aim 4. To examine the effect of acculturation in moderating the association

between affect and depressed mood.

Hypothesis 4. The association between affect and depressed mood will become

more and more similar to the one observed for U.S. students when participants

have stayed longer in the United States. Thus, the negative association for ideal

HAP affect and desire to maximize positive affect with depressed mood will

become stronger, the longer participants have spent in the United States. The

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negative association for ideal LAP affect with depressed mood, will in contrast become weaker with time. Similarly, orientation to the U.S. culture will moderate the association between affect and depressed mood.

Hypothesis 4 Alternative. Based on results of Study 1, I alternatively predict that acculturation will make the association between LAP affect (both ideal and actual) and depressed mood stronger.

Hypothesis 5. Participants' ideal affect at time 1 will predict their actual affect at time 2, which in turn will predict the level of depressed mood at time 3. The indirect effect of the mediated pathway (*ideal affect at time 1 → actual affect at time 2 → depressed mood at time 3*) will be moderated by participant's level of orientation to the U.S. culture. Specifically, wanting to have more HAP and LAP affect will predict higher actual HAP and LAP affect, which will lead to lower depressed mood at time 3. Participants who have higher orientation to the U.S. culture at earlier time will have a stronger indirect effect of HAP affect and a weaker indirect effect of LAP affect in comparison to those who have lower orientation to the U.S. culture. The mediation pathway will also be significant for the dialectical affect (*desire to maximize positive affect at time 1 → preponderance of positive affect at time 2 → depressed mood at time 3*), and the magnitude of the mediated effect will depend on participants' orientation to the

U.S. culture. Participants with higher orientation to the U.S. culture will have a stronger indirect pathway.

Hypothesis 5 Alternative. Based on results of Study 1, I alternatively predict that orientation to the U.S. culture will moderate the indirect effect of LAP affect in the direction opposite to Hypothesis 5. Specifically, participants who have a higher orientation to the U.S. culture will have a stronger indirect effect of LAP affect on depressed mood. As study 1 did not find a difference in magnitude of the mediated pathway of positive over negative affect (*desire to maximize positive affect* → *preponderance of positive affect at time* → *depressed mood at time*) between the U.S. students and Chinese international students, the current study alternatively hypothesizes that the magnitude of the mediated pathway in a longitudinal model may not depend on participants' orientation to the U.S. culture.

Aim 5. To examine changes in dialectical/non-dialectical affect styles between time 1 and 3.

Hypothesis 6. Compared to time 1, the percentages of participants who fall into classes that value dialectical affect style will decrease at time 3, and the percentages of participants who fall into classes that value positive non-dialectical style will increase at time 3.

Hypothesis 7. Individuals who value non-dialectical affect will have higher orientation to the U.S. culture at time 1 than those who value dialectical affect styles. Individuals who are able to successfully maximize actual positive affect and minimize actual negative affect have the highest orientation to the U.S. culture at time 1.

Hypothesis 8. At both time 1 and 3, individuals who value non-dialectical affect style and experience non-dialectical affect will have the lowest level of depressed mood. Individuals who value non-dialectical affect style but are not able to match their actual affect to the ideal affect will have higher levels of depressed mood at both time 1 and 3 in comparison to individuals who are able to fulfil that goal. Individuals who value dialectical affect and experience lower level of dialectical affect will have higher depressed mood in comparison to individuals who are able to experience non-dialectical affect, and will have lower depressed mood than individuals who value dialectical affect and experience higher level of dialectical (both high in positive and negative) affect. The class which value dialectical affect and experience higher level of dialectical affect will have the highest depressed mood.

Chapter Nine: Study 2 Method

Participants and Procedure

The 153 Chinese international students recruited at time 1 were asked to continuously participate the project every six month, in a total time across a year. At time 2, 22 participants could not be reached, thus their data were not included in study 2 analysis, resulting in a total sample size of 131 participants in the current study. Analyses of the independent-samples t-tests showed that there were no significant mean differences at time 1 among variables tested in the current study between participants who dropped out the study at time 2 and participants who stayed.

Among the participants, 60% were female. The average age of the sample at time 1 was 21.52 ($SD = 2.01$). The average time participants had stayed in the U.S. was 1.42 years ($SD = 1.30$) at time 1, 1.96 years at time 2, and 2.40 years at time 3. Among the participants, 67% were undergraduate students, and 33% were graduate students. As undergraduate and graduate students in this sample were not significantly different in the mean levels on variables that were tested in the following analyses across three time points, this factor will not be discussed in the dissertation. The procedure for Study 2 was similar to Study 1 recruitment of Chinese international students. Each participant was asked to complete the paper-form questionnaire with instructions from a research

assistant in the Social Context and Developmental lab. Based on each participant's

completion date at time 1, they were contacted after 6 months to complete the

questionnaire at time 2 and contacted after 12 months to complete the questionnaire at

time 3. The procedure of the questionnaire completion for time 2 and 3 was the same as

the procedure at time 1.

Measures

The questionnaires were translated into Chinese language. As for Study 1, the

current study used the published translated versions of the measures (i.e., Affect

Valuation Index; Vancouver Index of Acculturation, Center for Epidemiologic Studies

Depression Scale).

Ideal and actual affect. Ideal and actual affect were assessed using the Affect

Valuation Index (AVI; Tsai et al., 2006). The subscale assessing *ideal affect* prompted

participants to rate the frequency they would ideally like to feel 30 affective states in a

typical week, and *actual affect* prompted participants to rate how often they actually

experienced the same 30 affect states in a week, using a scale ranging from 1= *never* to

5= *all of the time*. For the purpose of the study, 6 affective octants that differed in arousal

levels and valence were analyzed in the results for both ideal and actual affect: high-

arousal positive (HAP) affect, Positive (P) affect, Low-arousal positive (LAP) affect,

High-arousal negative (HAN) affect, Negative (N) affect, and low-arousal negative

(LAN) affect. As the study 2 did not compare the affect means across cultures, the

following analyses of affect were based on raw scores. At time 1, the α's of ideal positive affect octants range from .73 to .77, actual positive affective octants range from .77 to .83, ideal negative affect octants range from .65 to .82, and actual negative affective octants range from .59 to .67. At time 2, the α's of ideal positive affect octants range from .72 to .78, actual positive affective octants range from .70 to .76, ideal negative affect octants range from .65 to .68, and actual negative affective octants range from .55 to .68. At time 3, the α's of ideal positive affect octants range from .77 to .84, actual positive affective octants range from .66 to .81, ideal negative affect octants range from .58 to .71, and actual negative affective octants range from .53 to .73.

Preponderance of positive affect over negative affect. Desire to maximize positive affect was computed by subtracting ideal negative affect (the mean across three arousal levels) from ideal positive affect (the mean across three arousal levels). Higher scores represented a greater desire to have more positive than negative affect. Preponderance of positive affect was computed by subtracting actual negative affect from actual positive affect (high scores representing greater preponderance of positive affective experiences over negative).

Orientation to the U.S. Culture. Levels of participant's orientation to the mainstream U.S. culture were assessed by 10-items (α = .82 at time 1, α = 84 at time 2, and α = .88 at time 3) from the Vancouver Index of Acculturation (VIA; Ryder et al.,

2000). Participants responded to statements such as "I often participate in mainstream American cultural traditions" on a 9-point scale, ranging from 1= *disagree* to 9= *agree*.

Depressive symptoms. It was assessed with the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). The 20-item CES-D scale (α = .92 at time 1, α = .91 at time 2, and α = .92 at time 3) assesses participants' experience of depressed mood in the past six months with items that measure cognitive, affective, behavioral, and somatic symptoms. Participants responded to statements such as "I was bothered by things that usually don't bother me," using a 4-point response scale that ranged from 0 =*never* to 3 = *almost every day*. A total score equal or greater than 16 indicates a risk for clinical depression of participants.

Chapter Ten: Study 2 Results

Aim 1. To examine emotional acculturation and its association with the orientation to the U.S. culture

The means and standard deviations of ideal and actual affect across three time points are reported in Table 2.1. Across time, participants wanted more positive affect than they actually experienced in both HAP and LAP affect. At a descriptive level, mean levels did not seem to change across time.

Table 2.1
Means and Standard Deviations for Affect across the Three Time Points

	Ideal Affect		Actual Affect	
	Mean	*SD*	Mean	*SD*
High-Arousal Positive Affect				
Time 1	3.43	.79	2.68	.72
Time2	3.39	.76	2.59	.66
Time3	3.32	.78	2.49	.59
Low-Arousal Positive Affect				
Time 1	3.73	.71	2.96	.70
Time2	3.75	.69	2.96	.62
Time3	3.76	.70	2.92	.66
(Positive - Negative) Affect				
Time 1	1.98	.97	.60	.88
Time2	2.12	.90	.64	.77
Time3	2.14	.92	.59	.79

To test hypothesis 1, the study conducted a linear growth curve model for both ideal and actual affect. As can be seen from Table 2.2, only actual HAP affect had a

significant linear change (-.09 per time point, $p < .05$), but there was no significant

variability in the individual rates of change. Thus, on average, participants experienced

.09 unite decrease in actual HAP affect per time point across a year. For all other affect

octants, neither the slopes, nor the variability of slopes were significant. The slope of

orientation to the U.S. culture was not significant either, indicating a lack of change in

this variable on average across the three time points. In addition, orientation to the U.S.

culture at time 1 did not significantly predict the slope of actual HAP affect.

Although Growth Modeling did not identify systematic linear changes in most of

the study variables, as can be seen in Table 2.3, there was a fair amount of instability in

the rank ordering of individuals over time. Thus, individuals might have not experienced

a consistent linear increase or decline over time, but rather changed in non-linear fashion

(e.g., some initially increasing and later decreasing, while others decreasing and later

increasing). Because the three time points available in this study make it impossible to

model such complex patterns of change, subsequent analyses focus on predicting later

assessments of the outcome variables from earlier assessments of the predictor variables

instead of utilizing latent growth modeling.

Table 2.2
Linear Growth Model of Ideal and Actual Affect and Orientation to the U.S. Culture

	Ideal Affect			Actual Affect			Orientation to the U.S. Culture
	High-Arousal Positive	Low-Arousal Positive	Desire to Maximize Positive	High-Arousal Positive	Low-Arousal Positive	Preponderan-ce of Positive	
Intercept	3.43***	3.73***	2.00***	2.68***	3.00***	.62***	54.48***
(SE)	(.07)	(.06)	(.08)	(.06)	(.05)	(.07)	(.95)
Intercept Variance	.26**	.17*	.32*	.24**	.13*	.22*	50.80 *
(SE)	(.09)	(.08)	(.14)	(.07)	(.06)	(.10)	(20.39
Slope	-.05	.02	.08	-.09*	-.02	-.01	.28
(SE)	(.03)	(.04)	(.05)	(.03)	(.03)	(.04)	(.49)
Slope Variance	-.03	.03	.11	.03	.00	-.02	-11.32
(SE)	(.05)	(.04)	(.07)	(.03)	(.03)	(.05)	(11.45)
χ^2 (df)	.10 (1)	.01 (1)	.82 (1)	.04 (1)	.14 (1)	.45 (1)	1.07 (1)
CFI	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RMSEA	.00	.00	.00	.00	.00	.00	.02

* $p < .05$, **$p < .01$, ***$p < .001$

Table 2.3
Zero-Order Correlations of Affect and Orientation to the U.S. Culture with Earlier Time Points

	Same Affect Octant at Time 1	Same Affect Octant at Time 2	Same Affect Octant at Time 3
Ideal Affect			
High-Arousal Positive Affect Time1	-		
High-Arousal Positive Affect Time2	.49***	-	
High-Arousal Positive Affect Time3	.53***	.51***	-
Low-Arousal Positive Affect Time1	-		
Low-Arousal Positive Affect Time2	.31**	-	
Low-Arousal Positive Affect Time3	.27**	.36***	-
Desire to Maximize Positive Affect Time1	-		
Desire to Maximize Positive Affect Time2	.30**	-	
Desire to Maximize Positive Affect Time3	.22**	.43***	-
Actual Affect			
High-Arousal Positive Affect Time1	-		
High-Arousal Positive Affect Time2	.45***	-	
High-Arousal Positive Affect Time3	.45***	.61***	-
Low-Arousal Positive Affect Time1	-		
Low-Arousal Positive Affect Time2	.38**	-	
Low-Arousal Positive Affect Time3	.44***	.60***	-
Preponderance of Positive Affect Time1	-		
Preponderance of Positive Affect Time2	.42***	-	
Preponderance of Positive Affect Time3	.50***	.63***	-

Orientation to the U.S. Culture	Time 1	Time2	Time3
Time 1	-		
Time 2	.53***	-	
Time 3	.62***	.59***	-

**p < .01, ***p < .001

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Aim 2. To Test the Directionality of the Associations between the Affect and Orientation to the U.S. culture

A series of cross-lagged path models (Bollen & Curran, 2006) were tested to evaluate the directionality of effects for each affect octant and the orientation to the U.S. culture. The cross-lagged models tested a predictive association between two variables over time while controlling for earlier assessments of the outcome variable (Selig & Little, 2012). A separate model was tested for HAP affect, LAP affect and the difference between positive and negative affect. Age and gender were used as control variables for both affect and orientation to the U.S. culture at each time point. Whenever age or gender were not significantly associated with the variables, they were dropped from the model.

For ideal HAP affect, the model had a good fit: χ^2 (3) = .57, p = .90, CFI = 1, RMSEA = .00. Age did not predict any of the variables, so it was dropped from the model. Gender did not predict orientation to the U.S. culture, but males had relative lower ideal HAP affect at time 1 and 2 than females (b = -.31, $p < .05$ and b = -.25, $p < .05$ respectively). Figure 2.1 shows that higher HAP affect at time 1 predicted higher orientation to the U.S. culture at time 2, b = 3.00, $p < .01$. Thus, the more participants desired higher HAP affect at time 1, the more they increased in their orientation to the U.S. culture by time 2. No other cross-lagged effects were significant.

The model testing actual HAP affect and orientation to the U.S. culture also had a good fit: χ^2 (4) = 2.79, p = .59, CFI = 1, RMSEA = .00. Age did not have an effect on any of the variables. Gender did not predict orientation to the U.S. culture, but it had an effect on actual HAP affect. Males were significantly lower in HAP affect at time 2, b = -.23, p

< .05, and lower in HAP at time 1 and 3 at a trend level, *b* = -.21, *p* = .08 and *b* = -.15, *p*

=.07. Figure 2.2 shows the cross-lagged effects between HAP affect and the orientation to

the U.S. culture. As can be seen from the figure, higher actual HAP affect predicted an

increase in the orientation to the U.S. culture at time 2 at a trend level, *b* = 2.22, *p* = .08.

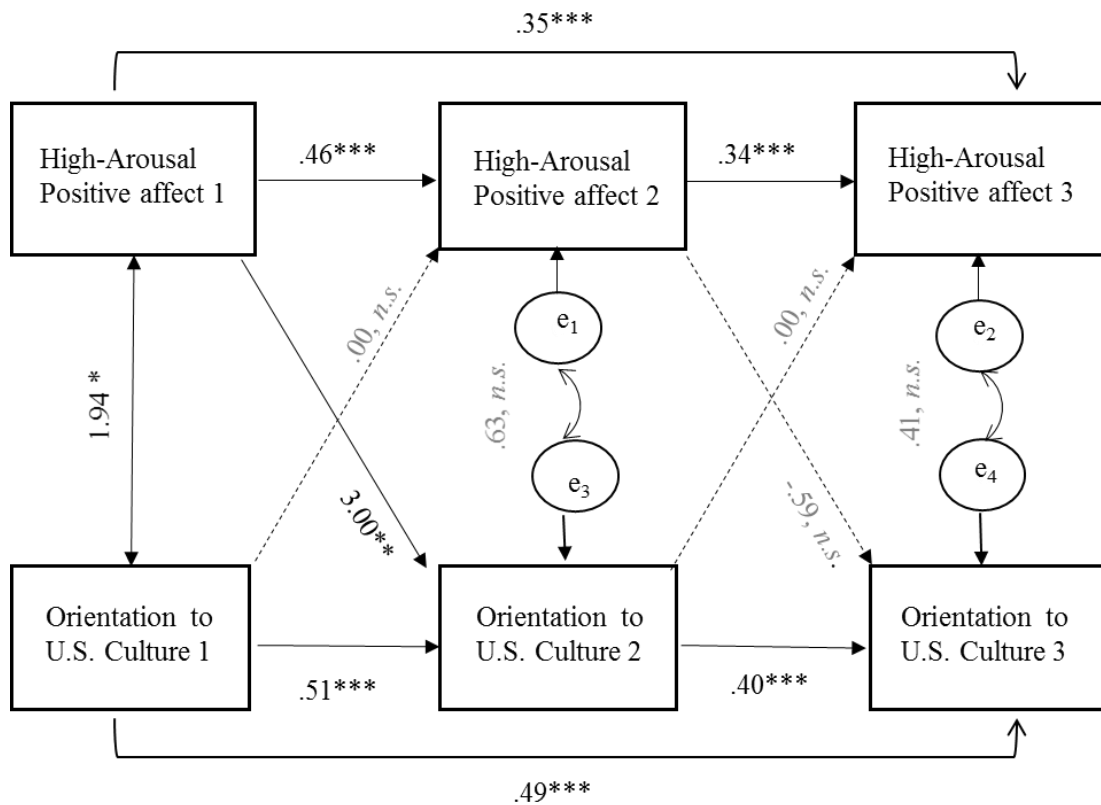All other cross-lagged effects were not significant.

Figure 2.1. The cross-lagged autoregressive model of ideal high-arousal positive affect and orientation to the U.S. Culture. Ideal high-arousal positive affect predicts orientation to the U.S. culture.
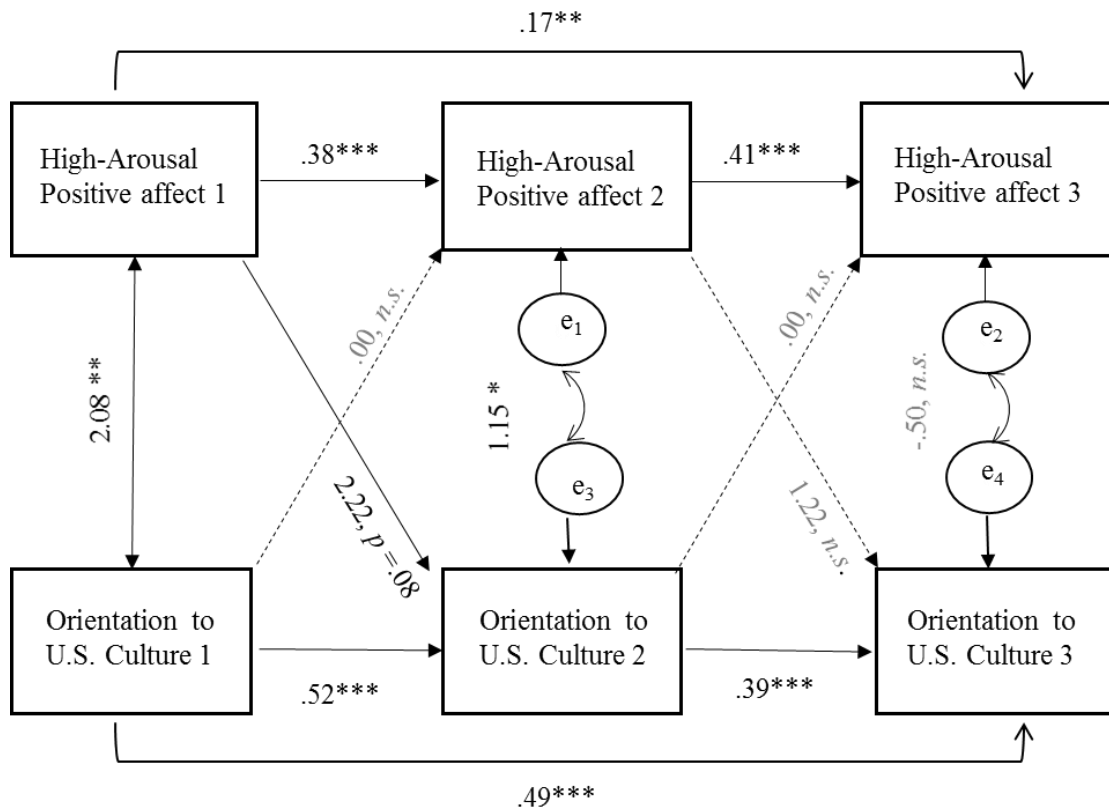
Figure 2.2. The cross-lagged autoregressive model of actual high-arousal positive affect and orientation to the U.S. culture. Actual high-arousal positive affect predicts orientation to the U.S. culture.

When testing models for ideal and actual LAP affect and the difference between the positive affect and maximum affect, the cross-lagged effects were not statistically significant, suggesting a lack of predictive effects across these variables.

Aim 3. To Test the Directionality of the Association between the Ideal and Actual Affect

The study hypothesized that ideal affect would predict later actual affect in the same octant. To test the hypothesis, I conducted cross-lagged autoregressive models.

HAP affect – the cross-lagged model. The model testing the directionality of the association between ideal and actual HAP affect had a good fit: χ^2 (1) = .13, p = .72, CFI = 1, RMSEA = .00. Age did not have a significant effect on affect. Gender had a significant effect for both ideal and actual HAP affect. Males had lower ideal HAP affect at time 1 and 2, b = -.29, p < .05 and b = -.25, p < .05, and lower actual HAP affect at time 2, b = -.21, p < .05, than females. Thus, gender was retained as a control variable. As can be seen from Figure 2.3, ideal HAP affect at time 1 predicted higher actual HAP affect at time 3 after controlling auto-regression effect and correlations between the affect, b = .23, p < .001. Thus, desire to experience higher HAP affect predicted higher actual HAP affect a year later. In contrast, actual HAP affect did not back predict ideal HAP affect.

Figure 2.3. The cross-lagged autoregressive model of ideal and actual high-arousal positive affect. Ideal high-arousal positive affect predicts actual high-arousal positive affect.

LAP affect – the cross-lagged model. The model had a good fit: χ^2 (3) = .96, p = .81, CFI = 1, RMSEA = .00. Gender did not have an effect on both ideal and actual LAP affect over time. Age in general was not associated with affect, but it was associated with ideal LAP affect at time 1, b = .07, p < .01. It was therefore retained as a control variable in the ideal LAP affect model. Figure 2.4 shows that ideal affect at time 1 predicted actual LAP affect at time 3, individuals who desired more LAP affect at time 1, actually experienced more LAP affect a year later, b = .16, p < .05. Actual affect did predict later ideal LAP affect.
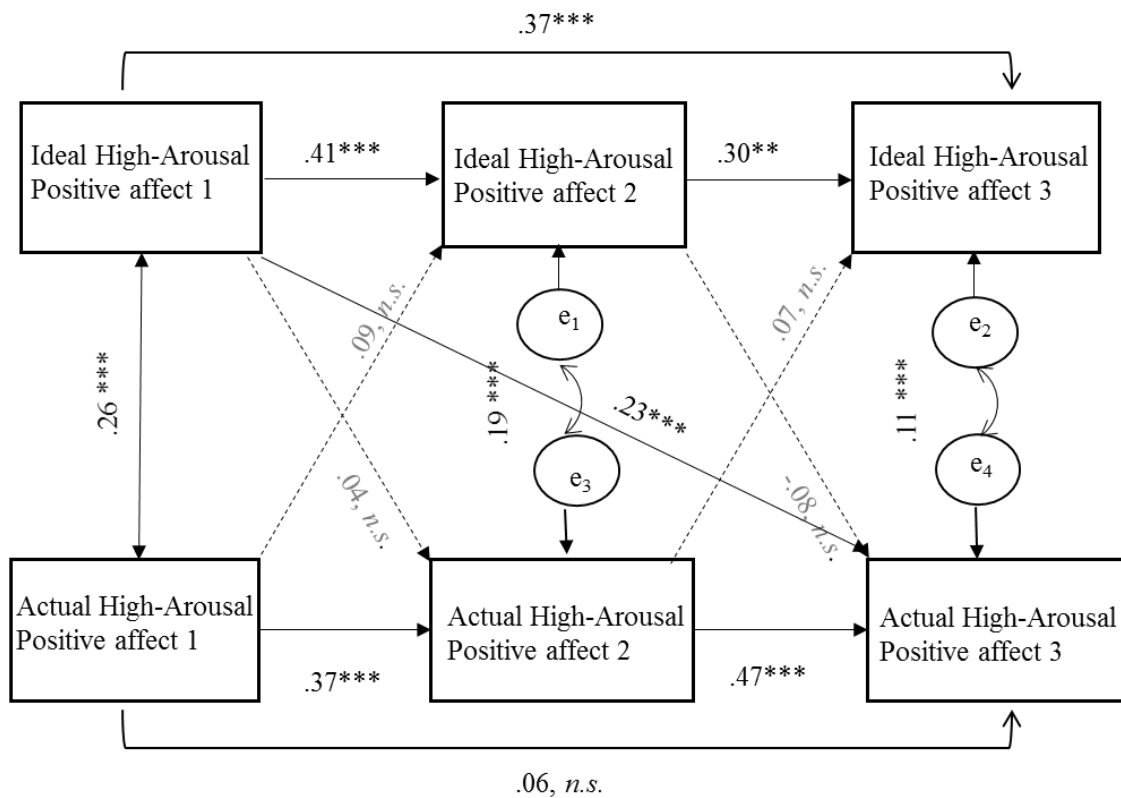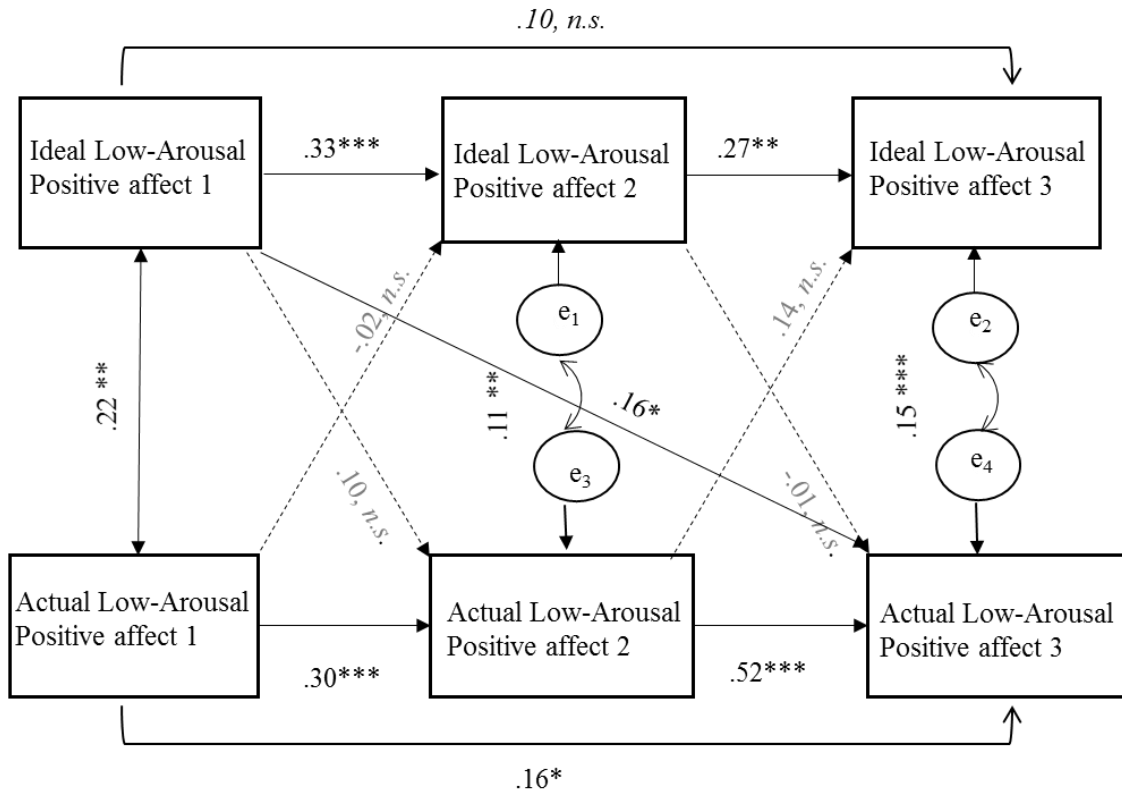
Figure 2.4. The cross-lagged autoregressive model of ideal and actual low-arousal positive affect. Ideal low-arousal positive affect predicts actual low-arousal positive affect.

Maximizing positive and minimizing negative affect – the cross-lagged model.

The model had a good fit: χ^2 (1) = .14, p = .71, CFI = 1, RMSEA = .00. Age was not

associated with the two variables across time. Gender had a significant effect for both

ideal and actual positive affect at time 1. Males desired to maximize positive affect and

had preponderance of positive affect less than females at time 1, b = -.48, $p < .01$ and b =

-.35, $p < .05$. There was a significant cross-lagged effect of desire to maximize positive

affect at time 1 on preponderance of positive affect at time 1 and time 2. As can be seen

in Figure 2.5, the more participants desired to maximize positive affect at time 1, the

more they experienced a preponderance of positive affect over negative affect at time 2

and 3, b = .14, $p < .05$ and b = .13, $p < .05$. The cross-lagged effects from actual affect to

desired affect were not significant.
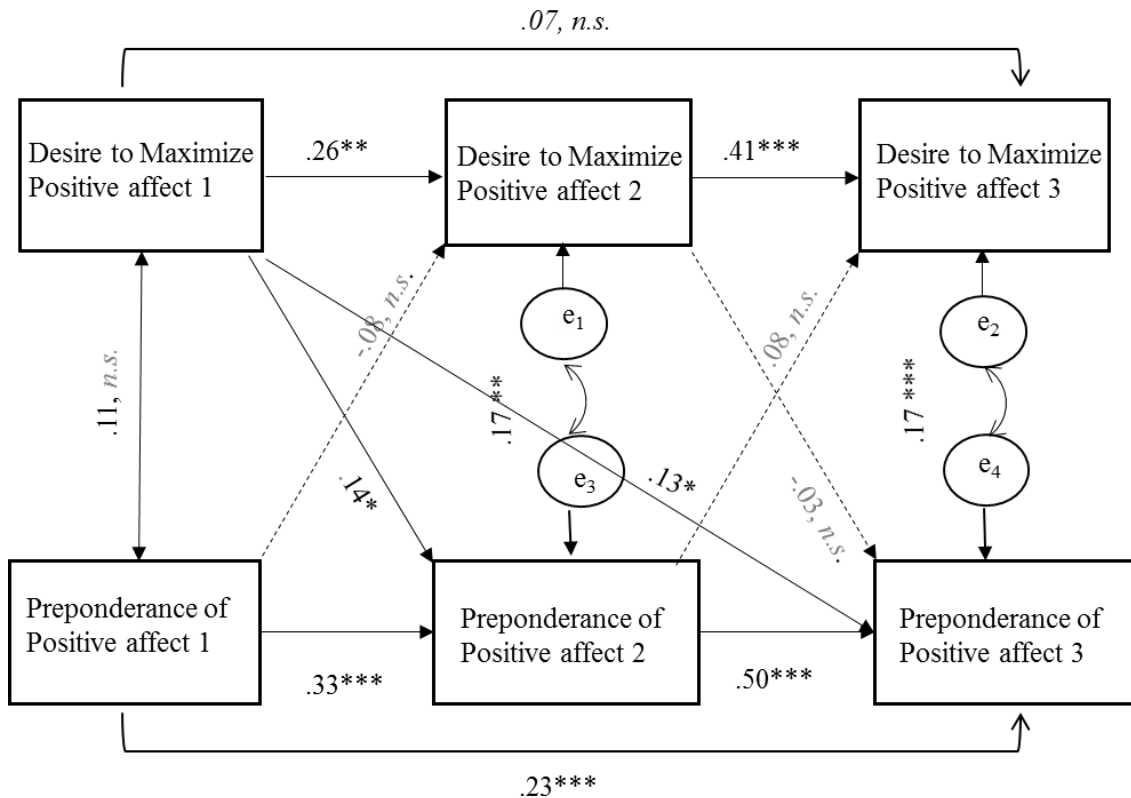
Figure 2.5. The cross-lagged autoregressive model of the desire to maximize positive affect and preponderance of positive affect. Desire to maximize positive affect predicts preponderance of positive affect.

Aim 4. To Examine the Effect of Acculturation in Moderating the Association between Affect and Depressed mood

Hypothesis 4 predicted that with acculturation (as assessed with time since arrival to the U.S. and orientation to the U.S. culture) the associations between affect and depressed mood will become more similar to those observed for the U.S. students. To test the hypotheses, I examined multilevel models using HLM 7.01 software (Raudenbush, Bryk, Cheong, Congdon, & du Toit, 2011). The two-level models estimated depressed mood at each given time point as a function of affect, orientation to the U.S. culture (or

time spent in the U.S.), and their interaction at level 1. Thus, these models tested how

acculturation moderates the association between affect and depressed mood.

Level 1: Depressed Mood$_{ij}$ = β_{oj} + β_{1j}*Affect + β_{2j}*Acculturation + β_{3j}*Interaction + e_{ij}

Level 2: β_{oj} = γ_{00} + γ_{01} Age + γ_{02} Gender + u_0

β_{1j} = γ_{10} + γ_{11} Age + γ_{12} Gender + u_1

β_{2j} = γ_{20} + γ_{21} Age + γ_{22} Gender + u_2

HAP affect and depressed mood. For ideal affect, there was a significant

interaction between HAP affect and the amount of time participants stayed in the United

States, β = -1.19, $p < .01$. As can be seen in Figure 2.6, higher ideal HAP affect was

associated with more depressed mood when participants recently arrived to the U.S. (1.5

years shorter than the average), b = 1.71, $p < .05$, and was associated with less depressed

mood when participants stayed longer, b = -1.84, $p < .05$ (1.5 years longer than the

average).

Figure 2.6. Interaction effect for ideal high-arousal positive affect and time in the U.S. on depressed mood. The effect of ideal high-arousal positive affect on depressed mood becomes more negative when Chinese international students have stayed longer.

For actual affect, HAP affect and time stayed in the United States also interacted significantly, $\beta = -1.04$, $p < .01$. As can be seen from Figure 2.7, actual HAP was not significantly associated with depressed mood when participants recently arrived to the U.S., but was negatively associated with depressed mood when participants stayed in the United States for a longer period of time, $b = -3.47$, $p < .001$. Thus, the association between actual HAP affect and depressed mood became more negative over time.

Figure 2.7. Interaction effect for actual high-arousal positive affect and time in the U.S. on depressed mood. The effect of actual high-arousal positive affect on depressed mood becomes more negative when Chinese international students have stayed longer.

Another set of models tested the effect of orientation to the U.S. (as opposed to the amount of time spent in the U.S.) as a measure of acculturation. The interaction effects between HAP affect (both ideal and actual) and orientation to the U.S. culture on depressed mood were tested, but not of the interactions were statistically significant.

LAP affect and depressed mood. For ideal affect, the interaction between LAP affect and time stayed in the United States was significant, $\beta = -1.45$, $p < .001$. Interestingly, ideal LAP affect was not significantly associated with depressed mood when participants recently arrived to the U.S., but was associated with a decreased depressed mood when participants spent longer in the United States, $b = -3.09$, $p < .001$ (see Figure 2.8).
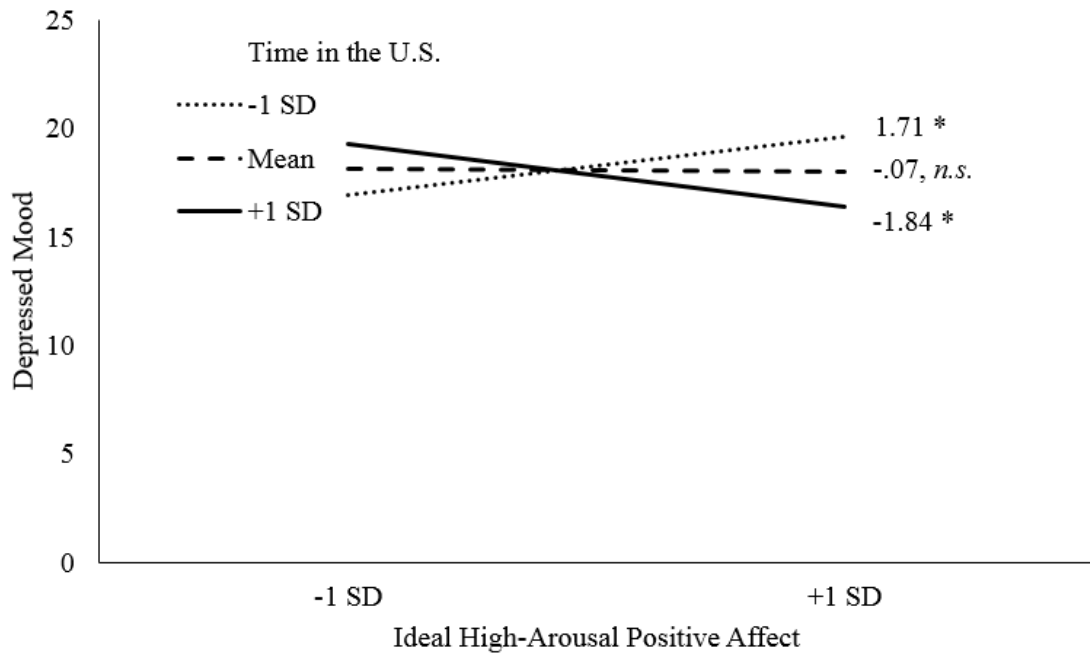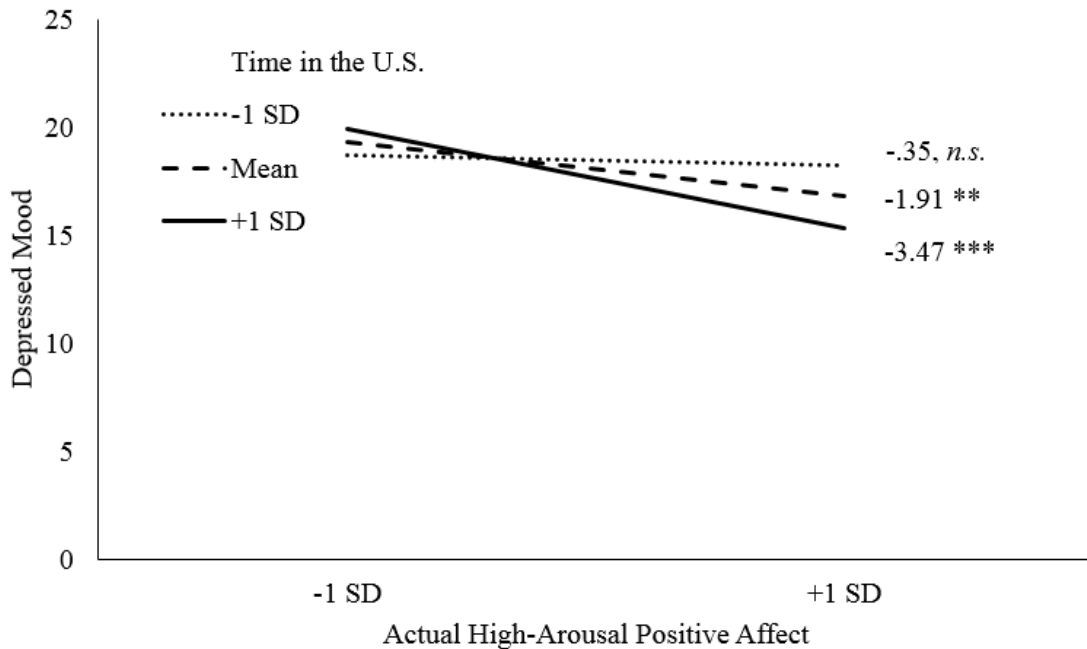
Figure 2.8. Interaction effect for ideal low-arousal positive affect and time in the U.S. on depressed mood. The effect of ideal low-arousal positive affect on depressed mood becomes more negative when Chinese international students have stayed longer.

Ideal LAP affect also significantly interacted with orientation to the U.S. culture, $\beta = -.08$, $p < .05$. Figure 2.9 shows that ideal LAP was not significantly associated with depressed mood for participants who had lower l orientation to the U.S. culture, and was associated with less depressed mood for those who had higher orientation to the U.S. culture, $b = -2.04$, $p < .01$.
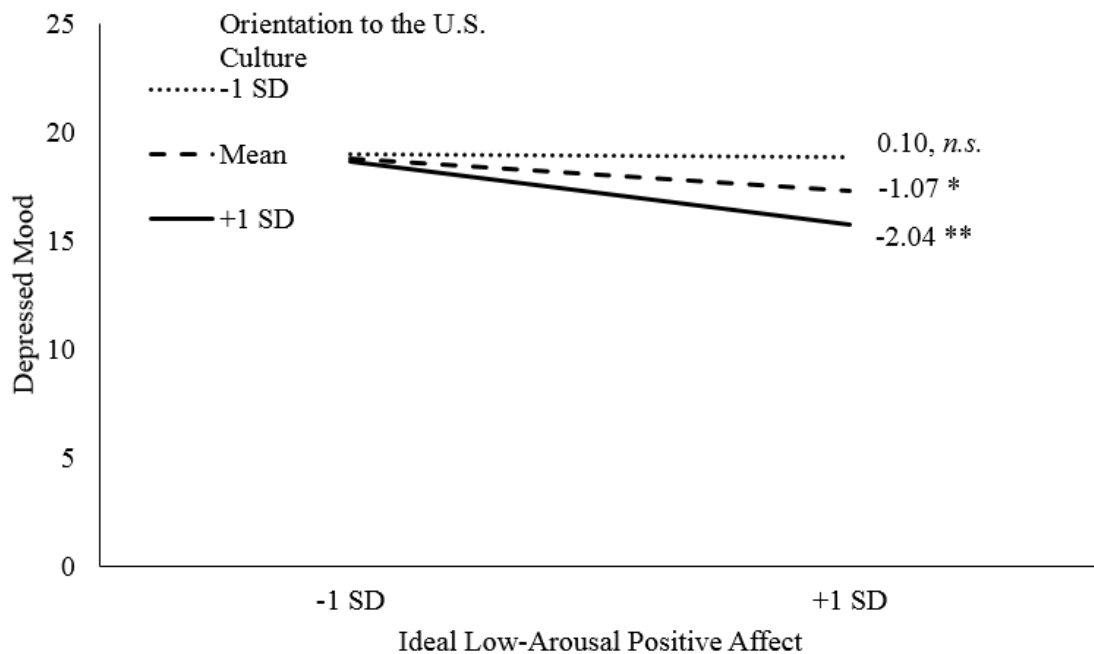
Figure 2.9. Interaction effect for ideal low-arousal positive affect and orientation to the U.S. culture on depressed mood over time. The effect of ideal low-arousal positive affect on depressed mood becomes more negative when Chinese international students have higher orientation to the U.S. culture.

For actual Affect, LAP affect was not significantly interacting with orientation to the U.S. culture, but was significantly interacting with time stayed in the United States, β = -1.45, $p < .001$. As can been seen from Figure 2.10, actual LAP affect was not associated with depressed mood when participants recently arrived to the United States, but was negatively associated with depressed mood when participant stayed on average longer in the United States, $b = -2.58$, $p < .001$ and $b = -4.37$, $p < .001$. Thus, results indicated that the longer participants stayed in the United States, the more their actual LAP affect was associated with lower depressed mood.
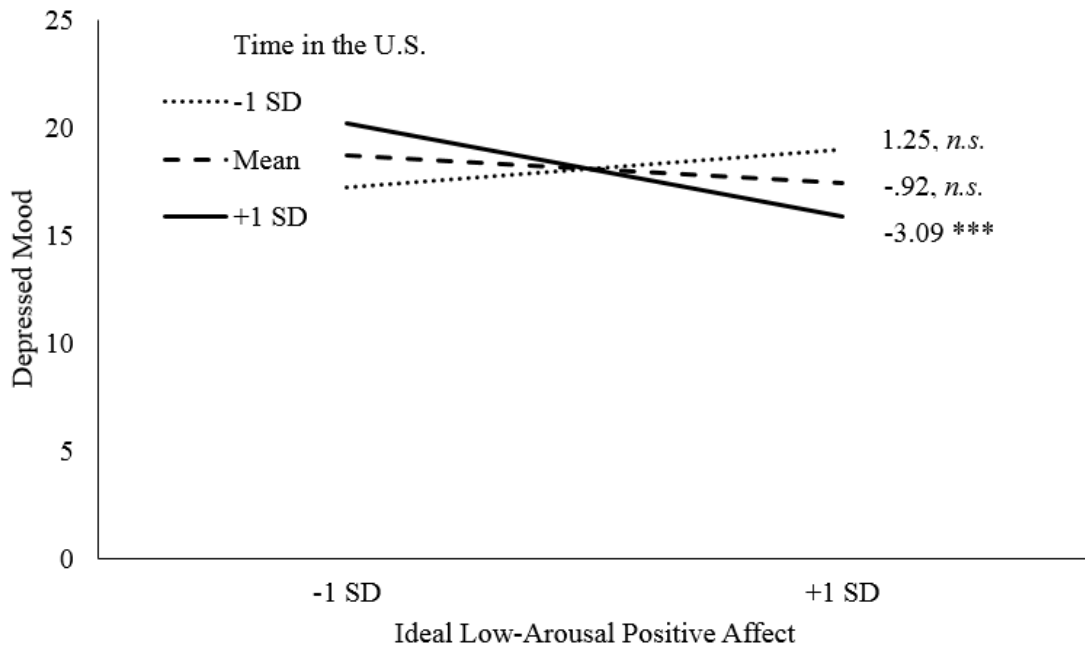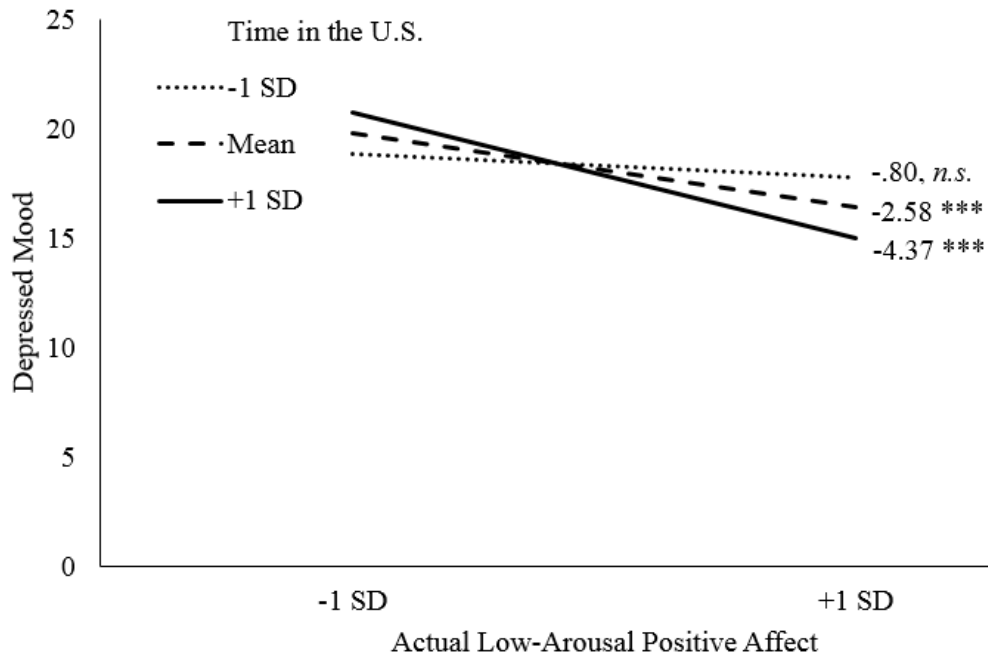
Figure 2.10. Interaction effect for actual low-arousal positive affect and time in the U.S. on depressed mood. The effect of actual low-arousal positive affect on depressed mood becomes more negative when Chinese international students have stayed longer.

Maximizing positive and minimizing negative affect and depressed mood. For ideal affect, desire to maximize positive affect was significantly interacting with time stayed in the United States, $\beta = -1.45$, $p < .001$, but not with orientation to the U.S. culture. As can be seen in Figure 2.11, desire to maximize positive affect was not significantly associated with depressed mood when participants recently arrived to the United States. When participants stayed in the United States for average length of time or longer, their desire to maximize positive affect was associated with lower depressed mood, $b = -1.65$, $p < .001$ and $b = -2.48$, $p < .001$.
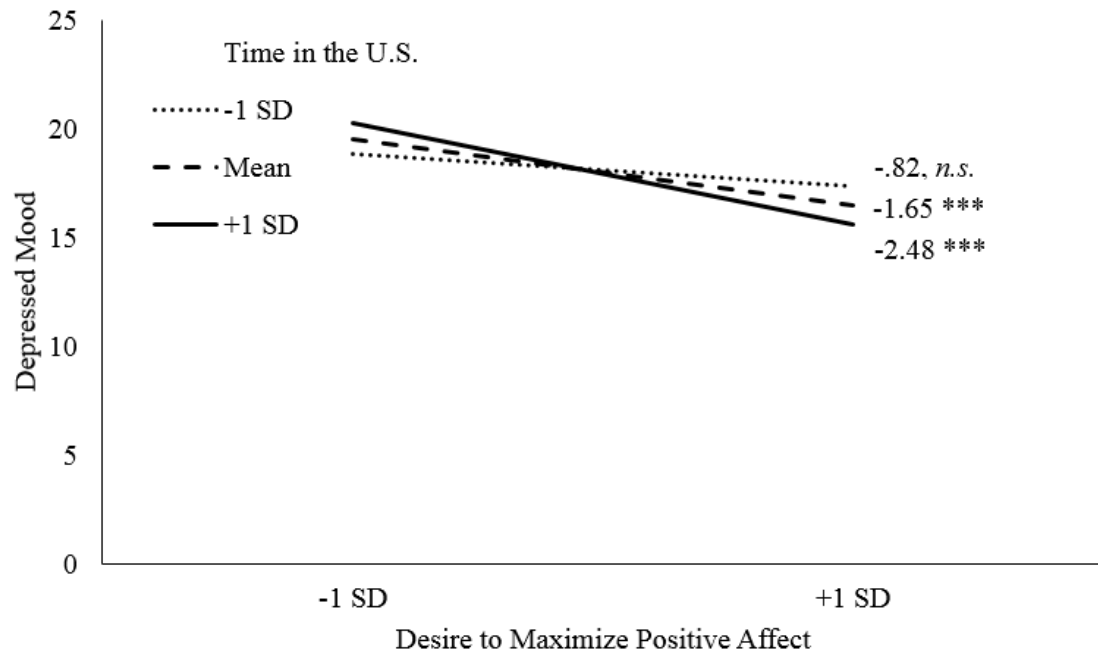
Figure 2.11. Interaction effect for desire to maximize positive affect and time in the U.S. on depressed mood. The effect of desire to maximize positive affect on depressed mood becomes more negative when Chinese international students have stayed longer.

For actual affect, preponderance of positive affect was not significantly interacting with either orientation to the U.S. culture or time stayed in the United States. Higher preponderance of positive affect was associated with lower depressed mood across levels of orientation to the U.S. culture and across time stayed in the United States, $\beta = -5.76, p < .001$.

Acculturation as the moderator of the indirect effect of ideal affect on depressed mood. Hypothesis 5 predicted that actual affect at time 2 would mediate the association between participant's ideal affect at time 1 and their levels of depressed mood at a time 3. In addition, acculturation would moderate this association. Specifically, for participants who had higher orientation to the U.S. culture at time 1, the magnitude of the

association between ideal and actual affect will be stronger, as compared to those with

lower orientation to the U.S. culture. To test the hypothesis, a mediated moderation

analysis was conducted to testing the association of each affective octant with depressed

mood. I also explored the model by testing a moderation effect of orientation to the U.S.

culture on association between actual affect at time 2 with depressed mood at time 3. The

models also controlled the effect of depressed mood at time 1 by regressing actual affect

at time 2 and depressed mood at time 3 on depressed mood at time 1.

For HAP affect, the orientation to the U.S. did not moderate any of the paths, and

therefore was dropped from the model. Figure 2.12 shows that desire for more HAP

affect at time 1 predicts higher actual HAP affect at time 2, $b = .24$, $p < .01$, which in turn

predicts lower depressed mood at time 3, $b = -2.72$, $p < .05$. The indirect pathway from

ideal HAP affect to depressed mood was significant, $b = -.66$, $p < .05$, and the direct

pathway was not significant.
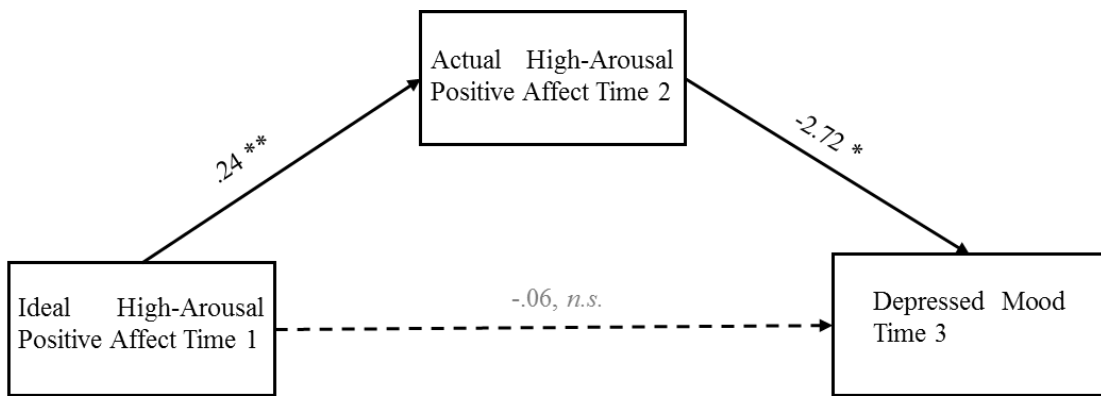
Figure 2.12. Mediation model of high-arousal positive affect on depressed mood. Actual high-arousal positive affect mediates the predicted effect of ideal high-arousal positive affect on depressed mood.

For LAP affect, orientation to the U.S. culture also did not moderate any of the paths and was therefore dropped from the model. As can be seen in Figure 2.13, desiring more LAP affect at time 1 was associated with higher actual LAP affect at time 2, $b = .22, p < .01$. Higher actual LAP affect at time 2 was in turn associated with lower depressed mood at time 3, however, this association was at a trend level, $b = -1.73, p = .07$. Neither the direct nor the indirect effect of ideal LAP affect on depressed mood were significant.
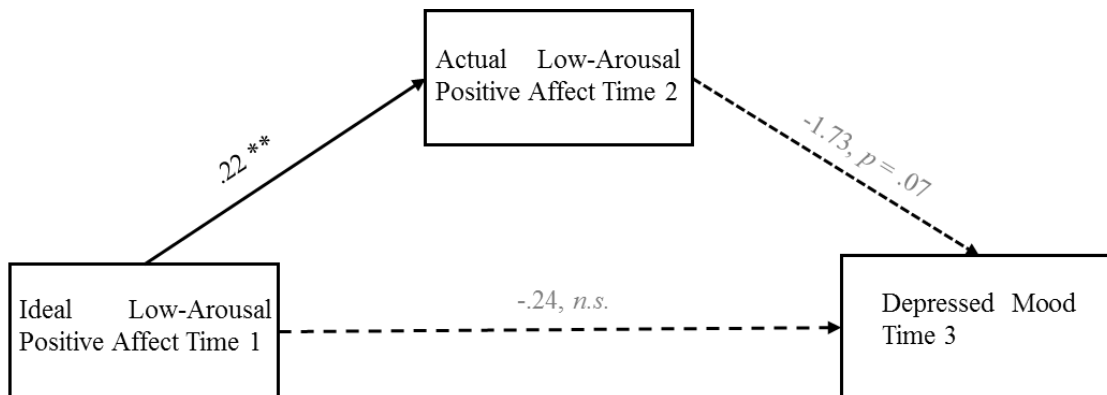
Figure 2.13. Mediation model of low-arousal positive affect on depressed mood. Actual low-arousal positive affect does not mediate the predicted effect of ideal low-arousal positive affect on depressed mood.

For maximizing positive and minimizing negative affect, orientation to the U.S. culture did not moderate any of the paths and was dropped from the model. As can be seen from Figure 2.14, higher desire to maximize positive affect at time 1 was associated with higher preponderance of actual positive affect at time 2, $b = .19, p < .01$, which in turn was associated with lower depressed mood at time 3, $b = -4.13, p < .001$. The indirect pathway was significant, $b = -.79, p < .05$.
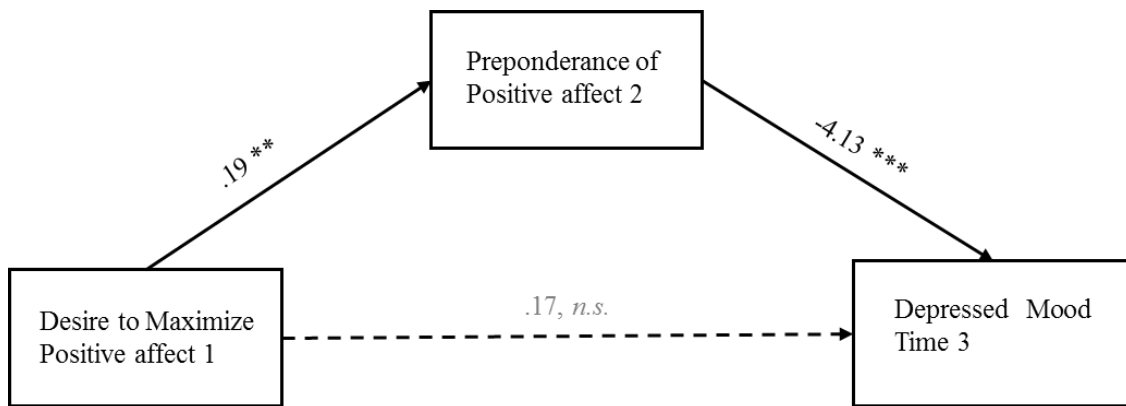
Figure 2.14. Mediation model of maximizing positive affect on depressed mood. Preponderance of positive affect mediates the predicted effect of desire to maximize positive affect on depressed mood.

Aim 5. To Examine Changes in Dialectical/Non-Dialectical Affect Styles between Time 1 and 3

Hypothesis 6 predicted that Chinese international students' affect style would change from time 1 to time 3. Compared to time 1, more people would fall into non-dialectical ideal affect style (want to maximize positive and minimize negative affect). Individuals who are able to actually experience higher positive and lower negative affect would have higher orientation to the U.S. culture and lower level of depressed mood, as compared to individuals who experienced more dialectical affect.

Consistent with previous research (Tsai et al., 2006; Tsai, Miao et al., 2007), participants at both time 1 and time 3 desired more positive affect and less negative affect than they actually experienced (see Figure 2.15). In order to test the hypothesis, LCA was employed again for Chinese international students at time 1 and time 3. When conducting the analysis for Chinese international students at time 1, two participants who had much higher actual than the ideal positive affect levels always fell into a separate group and

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resulted in bad model fit, thus I deleted the two participants as outliers, which resulted in

a total N = 129 participants. As can be seen in Table 2.4, the 5-group model had optimal

fit. However, one of the groups in the 5-group solution only had 2 participants, so the

more conservative 4-group model was selected as the optimal representation of the

heterogeneity of responses in the dataset at time 1. At time 3, the 4-group solution had the

optimal fit, as BLRT p value was not significant for the five-group solution. Furthermore,

the BIC value increased between the 4-class solution and the 5-class solution. Thus, the

4-class solution was selected. Figure 20 showed the affect profiles of participants.

(a) Affect Mean of Chinese International Students at Time 1
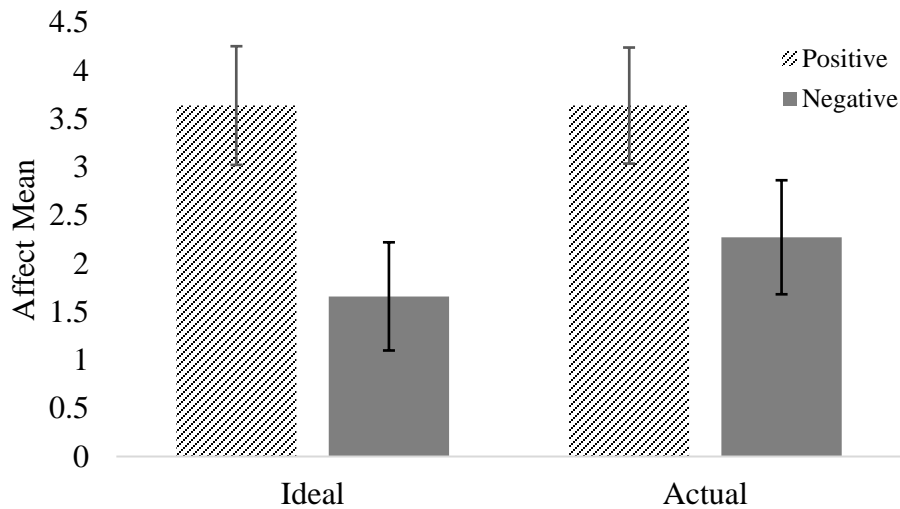
(b) Affect Mean of Chinese International Students at Time 3
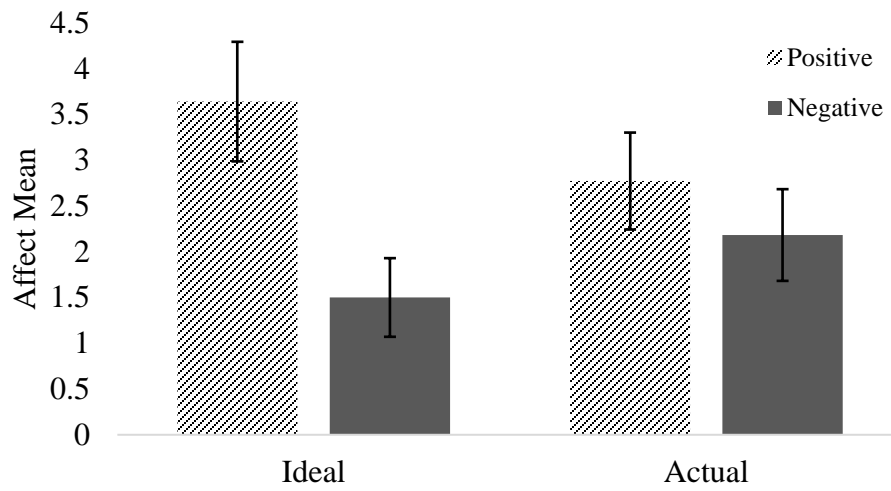
Figure 2.15. Mean and standard deviation for positive and negative affect ratings. Chinese international students want to have more positive and less negative affect than their actual affective experience over time.

Table 2.4

Fit Statistics for the Latent Class Analysis of Affect Profiles of Chinese international Students at Time 1 and 3

Models	Log Likelihood	# of Parameters	BIC	AIC	BLRT p value	Entropy
Chinese International Students at Time 1						
2 groups	-427.57	13	918.21	881.14	.00	0.84
3 groups	-399.62	18	886.58	835.25	.00	0.90
4 groups	-379.86	23	871.31	805.71	.00	0.89
5 groups	-367.02	28	869.89	790.04	.00	0.89
Chinese International Students at Time 3						
2 groups	337.49	13	738.06	700.98	.00	0.69
3 groups	-311.37	18	710.07	658.73	.00	0.80
4 groups	-297.24	23	706.07	640.48	.00	0.81
5 groups	-289.80	28	715.45	635.59	.07	0.81

BIC = Bayesian Information Criterion; AIC = Akaike Information Criterion; BLRT = Bootstrapped Likelihood Ratio Test.

Figure 2.16a presents the four affect profiles at time 1. The majority of participants (63%) belonged to the Unsuccessful Maximizers group, and a small group of participant (8%) belonged to Successful Maximizers. The rest of the participants desired and experienced dialectical affect – 5% at higher frequency (Higher Dialectical Affect group) and 24% at lower frequency (Lower Dialectical Affect group). At time 2, 34% of participants fell into the Successful Maximizers, 18% of participants belonged to the Unsuccessful Maximizers, 11% of participants belonged to the Maximized Ideal/Lower Dialectical Actual, and 37% of participants belonged to Maximized Ideal/Higher Dialectical Actual. As can be seen in the figure, more participants wanted to experience non-dialectical affect style at time 3 compared to time 1. Specifically, only Successful Maximizers and Unsuccessful Maximizers (total of 71%) desired for a non-dialectical affect style at time 1. At time 3, all four groups of participants wanted to have more positive affect and less negative affect to some degree (ideal positive affect was in greater magnitude than ideal negative affect across all groups). This pattern of ideal affect at time 3 was also similar to the typical ideal affect pattern of the U.S. students (Study 1). In addition, there were more participants in the Successful Maximizers group at time 3 (34%) than time 1 (8%), and fewer participants in the Unsuccessful Maximizers group at time 3 (18%) than time 1 (63%).

As can be seen from Table 2.5, majority of Successful Maximizers remained in the same group from time 1 to 3. However, only about 15% of Unsuccessful Maximizer remained in the same group, and about each 40% of Unsuccessful Maximizers moved to Successful Maximizers and the Maximized Ideal/Higher Dialectical Actual group. Over

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half of the Lower Dialectical Affect group moved to the Maximized Ideal/Higher Dialectical Actual group, and about 20% each of it also moved to Unsuccessful Maximizers and the Maximized Ideal/Higher Dialectical Actual group at time 3. Finally, most of the Higher Dialectical Affect group moved to Unsuccessful Maximizers, and the rest of it moved equally to Successful Maximizer and the Maximized Ideal/Higher Dialectical Actual group equally at time 3.

Table 2.5
Mobility of classes from time 1 to 3 in percentage

	Time 3 (%)			
Time 1 (%)	Successful Maximizer	Unsuccessful Maximizer	Maximized Ideal/Lower Dialectical Actual	Maximized Ideal/Higher Dialectical Actual
Successful Maximizer	93.6	0	0	6.4
Unsuccessful Maximizer	39.1	15.1	8.6	37.1
Lower Dialectical Affect	1.8	23.1	22.4	52.7
Higher Dialectical Affect	17.5	65.7	0	17.5

(a) Mean affect ratings of Chinese international students at time 1
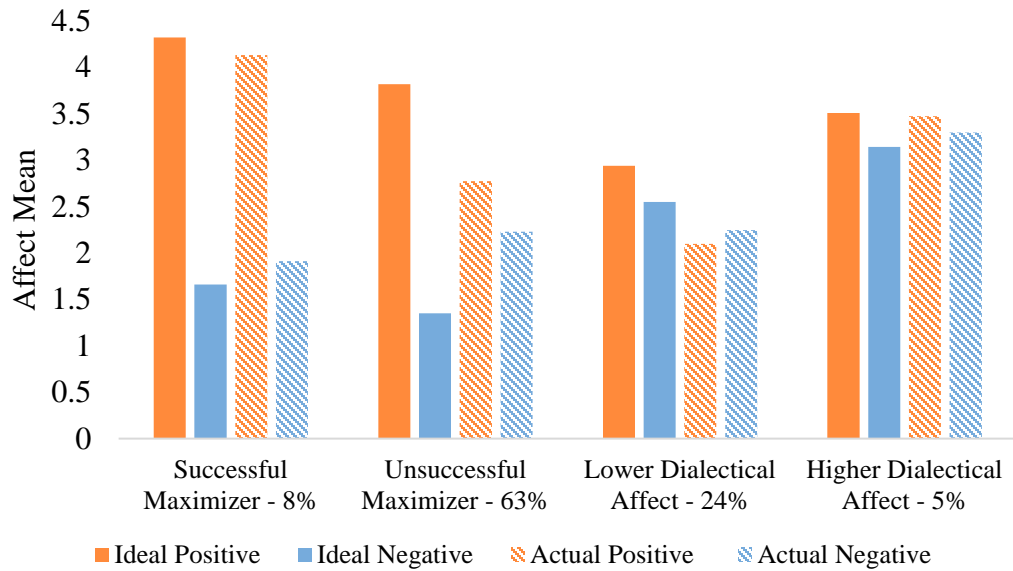
(b) Mean affect ratings for Chinese international students at 3ime 3
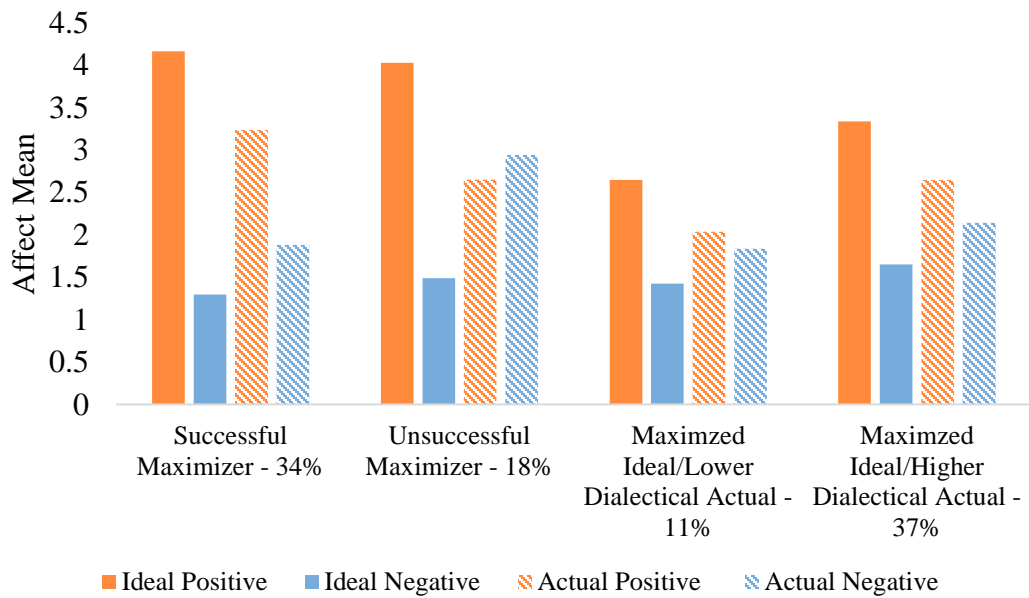
Figure 2.16. Mean affect ratings for the Latent Class Analysis of Chinese international students at time 1 and 3. Chinese international students' affect styles have become more non-dialectical over time.

I next examined if different affect styles at time 3 would be associated with different levels of orientation of the U.S. culture at time 1. The average levels of orientation to the U.S. culture at time 1 were significantly different across the four groups: χ^2 (3) = 17.09, p < .001, with M = 59.82, SE = 1.66 for Successful Maximizers, M = 48.68, SE = 2.60 for Unsuccessful Maximizers, M = 51.93, SE = 2.83 for Maximized Ideal/Lower Dialectical Actual group, and M = 52.62, SE = 2.08 for Maximized Ideal/Higher Dialectical Actual group. Successful Maximizer had the highest level of orientation to the U.S. culture at time 1 than all rest three groups (χ^2 [1] ranging from 5.83 to 13.02, all p's < .05). The other three groups were not significantly different in orientation to the U.S. culture at time 1 from each other.

Different affect styles were associated with different levels of depressed mood at time 1 and 3. There were significant differences in average levels of depressed mood across groups at time 1: χ^2 (3) = 20.42, p < .001, with M = 9.13, SE = 2.26, and 33% at risk for depression (a total CES-D score equal or greater than 16) for Successful Maximizers, M = 18.38, SE = 1.09, and 60% at risk for depression for Unsuccessful Maximizers, M = 19.03, SE = 1.29, and 74% at risk for depression for Lower Dialectical Affect group, and M = 27.44, SE = 4.57, and 86% at risk for depression for Higher Dialectical Affect group. Similar to the U.S. students, Successful Maximizers experienced the lowest levels of depressed mood (χ^2 [1] ranging from 12.93 to 14.36, all p's < .001 for comparisons with other groups). Higher Dialectical Affect group

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experience the highest levels of depressed mood, different at a trend level from

Unsuccessful Maximizers, χ^2 (1) = 3.74, p = .05 and Lower Dialectical Affect group, χ^2

(1) = 3.12, p = .08. Unsuccessful Maximizers and Lower Dialectical Affect groups did

not differ in their levels of depressed mood. Next, ANOVA showed that there was a

significant effect of the groups on depressed mood, F (3, 124) = 5.46, p < .01. However,

when actual negative affect was entered as a covariate, the effect reduced to a trend level,

F (3, 123) = 2.48, p = .06.

The average levels of depressed mood at time 3 were also significantly different

across the four groups: χ^2 (3) = 56.16, p < .001, with M = 11.59, SE = 1.05, 36% at risk

for Successful Maximizers, M = 25.27, SE = 1.64, and 91% at risk for Unsuccessful

Maximizers, M = 16.71, SE = 2.52, and 53% at risk for Maximized Ideal/Lower

Dialectical Actual group, and M = 18.58, SE = .69, and 76% at risk for Maximized

Ideal/Higher Dialectical Actual group. Successful Maximizers had the lowest depressed

mood – significantly lower than Unsuccessful Maximizers and Maximized Ideal/Higher

Dialectical Actual group (χ^2 [1] ranging from 28.86 to 49.72, p's < .001), and had lower

depressed mood than Maximized Ideal/Lower Dialectical Actual group at a trend level, χ^2

(1) = 3.51, p = .06. In turn, Unsuccessful Maximizers had highest depressed mood

compared to the rest groups (χ^2 [1] ranging from 7.41 to 49.72, p's < .001). Maximized

Ideal/Lower Dialectical Actual and Maximized Ideal/Higher Dialectical Actual groups

were not significantly different from each other. ANOVA showed that there were

significant differences of depressed mood across the four groups, $F(3, 124) = 17.57$, $p <$

.001. When actual negative affect was controlled as a covariate, the main effect of group

remained significant, $F(3, 123) = 6.19$, $p < .01$.

Chapter Eleven: Study 2 Discussion

Emotional Acculturation

Cross-cultural research of emotional acculturation has shown that greater

exposure of immigrants to the host culture (e.g., arrival at an earlier age), the closer their

average emotional pattern to that of the host culture (De Leersnyder et al., 2001). Results

of Latent Growth Curve Modeling in the current study did not support either hypothesis 1

or hypothesis 1 alternative. In general, the ideal and actual affect did not change

significantly in a consistent manner across the three time points of the study. The only

affect change observed was in actual HAP affect, which had decreased slightly over time.

There are several alternative interpretations of these unexpected results. First, the change

of participants' ideal affect may require more exposure to the U.S. culture, which in turn

requires a longer-term longitudinal study. In addition, the correlation coefficients for each

affect with its earlier and later time points (see Table 7) did not exceed .63, which

indicates that at most only 36% of variance in affect scores was predicted their earlier

measures. If participants experienced a diverse range of complex non-linear changes in

affect, the linear models I employed were not suitable for detecting such changes. Future

research with longer longitudinal design should be able to overcome both of these issues.

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In contrast to the hypothesis, the current study found that participants on average had experienced a slight decrease in HAP affect over the course of the study. As orientation to the U.S. culture was not associated with this change, other factors likely have a stronger influence on this change in HAP affect. For example, Chinese Americans who migrate to the United States at a later age face more social challenges (e.g., social isolation and lack of cross-cultural communication) than Chinese Americans who migrated at a young age (Ying et al., 2006). Thus, participants in this study may also experience such social challenges, which would lead them to be engaged in fewer exciting and high-arousal activities and practices.

Association of Affect and Orientation to the U.S. Culture

Results of Study 2 did not support a bi-directional effect of emotional acculturation and orientation to the U.S. culture. Hypothesis 2 was partially supported. Higher ideal HAP affect at time 1 predicted higher orientation to the U.S. culture at time 2, but orientation to the U.S. culture did not predict ideal HAP affect. Results also showed a positive association of actual HAP affect at time 1 and orientation to the U.S. culture at time 2 at a trend level. The study did not find any predictive effects for either LAP affect or maximizing positive and minimizing negative affect. Thus, individuals whose ideal and actual HAP affect was more similar to those typical of the U.S. participants may have experienced fewer challenges in the acculturation process and consequently had higher later orientation to the U.S. culture. However, this effect may be

specific to HAP affect. One possible reason why this study did not find similar effects for

LAP affect and the difference between the positive and negative affect on orientation to

the U.S. culture is that these affects may be associated with other aspects of acculturation

more strongly. According to AVT, ideal affect has motivational force to influence

behaviors more strongly than attitude (Tsai, 2013). As orientation to the U.S. culture

reflects an acculturation attitude or preference instead of acculturation behaviors (Celenk

& Vande Vijver, 2011), it may be less influenced by LAP affect and maximizing positive

and minimizing negative affect. Thus, the future research can further investigate the bi-

directional effect of affect and acculturation behaviors.

Ideal Affect as a Predictor of Actual Affect

According to AVT, ideal affect is a goal that motivates individuals to behave in

certain ways in order to bring actual affect closer their ideal affect (Tsai, 2013). As a

result, ideal affect should regulate the persons' actual affective experiences (Sims et al.,

2015). Results supported AVT and the study hypothesis by showing that ideal affect

predicts actual affect at a later time, but not the reverse. In sum, the results suggest that

ideal affect has a stronger influence in regulating affective experiences than does actual

affect on ideal affect.

Acculturation as a Moderator of the Associations between Affect and Depressed

Mood

The levels of emotional acculturation may depend on whether individuals are able to appraise events and regulate emotional experiences in a culturally valued way (De Leersnyder et al., 2013), and orientation to the U.S. culture may motivate individuals to get involved more in social relationship within the U.S. culture (Zhang & Goodson, 2011). Furthermore, cultural fit of affective experiences has been associated with better adjustment outcomes and cultural adaptation (De Leersnder et al., 2014; De Leersnder et al., 2015a), while exposure to the host culture (such as years in the host culture) is also associated with emotional acculturation (De Leernder et al., 2011). Thus, this study expected to find a moderating effect of acculturation (as assessed by the time participants stayed in the United States and orientation to the U.S. culture) on the co-occurrence between affect and depressed mood.

This hypothesis was partially supported. Results in general showed that correlations between positive affect and depressed mood generally became stronger the longer participants stayed in the United States and with higher orientation to the U.S. Specifically, ideal HAP and desire to maximize positive affect was associated with depressed mood more negatively when participants had stayed a longer time in the United States. When participants had stayed less time in the country, the association between ideal HAP affect and depressed mood was positive. This result is consistent with recent literature on the dark side of extreme positive emotions and the paradoxical effects of pursing happiness by Mauss and colleagues (Mauss et al., 2011; Mauss et al., 2011).

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They demonstrated that placing extremely high value on happiness can have a detrimental effect on well-being, especially when actual experiences fall short of expected extreme positive states (Ford & Mauss, 2014, Gruber, et al., 2011). In reference to Study 1 results, there was also an indirect beneficial effect of ideal HAP (through actual HAP affect) on depressed mood at time 1.

Results also supported the Hypothesis 4 alternative by showing that both ideal and actual LAP affect were associated with depressed mood more negatively when participants had stayed in the U.S. for longer time. Consistent with Study 1, results suggest that LAP affect may be higher in East Asian cultures but is more important for mental health in the U.S. Future studies will need to further investigate how LAP affect is associated with different outcomes across cultures.

Although this study did not find that acculturation moderates the indirect pathway from ideal affect to depressed mood, it was the first to longitudinally evaluate the path from ideal affect to actual affect to depressed mood (*ideal affect at time 1 → actual affect at time 2 → depressed mood at time 3*). Higher ideal HAP affect and desire to maximize positive affect at time 1 predicted more actual HAP affect and preponderance to positive affect, which led to less depressed mood at time 3. The mediation model was not significant for LAP affect, as actual LAP affect at time 2 predicted depressed mood only at a trend level. Even though actual LAP affect did not significantly predict later depressed mood, it was in the expected direction. Taken together, these results suggest

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that it is adaptive for Chinese international students to have their ideal affect in alignment

with culturally-ideal-affect and to adjust to the new culture through regulation of their

actual affective experiences.

Changes of Affect Styles between Time 1 and 3

The current study predicted that as participants stayed longer in the United States,

their affect styles would change to resemble affect styles of individuals from the U.S.

culture. Results supported this hypothesis by showing that all participants at time 3

wanted to feel higher positive and lower negative affect. These results suggest that

exposure to the U.S. culture has a stronger effect in shaping ideal affect styles of Chinese

international students, as results showed that their ideal affect became more non-dialectic

after a year. In addition, more participants at time 3 than time 1 fell into the Successful

Maximizer group, and participants who were in the Successful Maximizer group at time 3

had the highest orientation to the U.S. culture at time 1. Thus, higher orientation to the

U.S. culture may predict a more effective up-regulation of positive affect experience for

those who want to maximize positive and minimize negative affect. Hypothesis 6 also

predicted that different affect styles would be associated with different levels of

depressed mood of participants. Results supported the hypothesis by showing that

Successful Maximizers had the lowest depressed mood at both time. Interestingly, the

Higher Dialectical Affect group had the highest depressed mood as the hypothesis

predicted at time 1, but Unsuccessful Maximizers had the highest depressed mood at time

3. It is possible that Unsuccessful Maximizers at time 3 experienced relatively high negative affect (higher than actual positive affect) that resulted in a higher level of depressed mood (Bastian et al., 2014; Leu et al., 2011). Moreover, the Maximized Ideal/Lower Dialectical Actual group stood in the middle at time 3, and they were not different in depressed mood from each other. As Unsuccessful Maximizer, Maximized Ideal/Lower Dialectical Actual, and Maximized Ideal/Higher Dialectical Actual groups all had lower orientation to the U.S. culture at time 1 compared to Successful Maximizers, it might indicate that the consistency of orientation to a culture and culturally valued affect styles is important for individual's subjective well-being (De Leersnyder et al., 2014, 2015a). For Chinese international students who oriented more to the U.S. culture initially, desiring non-dialectical (maximize positive and minimize negative) affect was more adaptive, whereas for Chinese international students with lower orientation to the U.S. culture, wanting to feel non-dialectical affect may lead to more challenges for well-being. Similarly, for Chinese international students initially not very oriented to the U.S. culture, wanting to feel relatively moderate level of positive and negative affect may be adaptive.

Strengths and Limitations

The current study is the first to investigate longitudinal changes in ideal and actual affect during adjustment to a new culture. Furthermore, it expanded the AVT by observing changes in the associations between affect and depressed mood. It also

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confirmed previously untested proposition of the AVT that ideal affect has consequences

for actual affect (Tsai, 2007; Tsai, 2013). In addition, the current study extended AVT by

incorporating acculturation measures into models of ideal and actual affect. It is the first

study that has provided empirical evidence to show that the association between

culturally valued affect and depressed mood depends on individuals' exposure to the host

culture.

The current study should be interpreted in light of several limitations. First, it only

assessed data at three time points across one year. Thus, it was not able to test other types

of trajectories (such as quadratic change) for the ideal and actual affect. Furthermore,

acculturative changes may require years to achieve (De Leernyder et al., 2011; Ying et

al., 2006), thus requiring a longer span for the study.

Second, acculturation is a complex process that may not have been adequately

captured by our measure of acculturation (Arends-Tóth & van de Vijver, 2006b; Celenk

& van de Vijver, 2011; Gupta et al., 2013). Orientation to the U.S. culture may not reflect

other aspects of acculturation that have a stronger influence on affect and its association

with well-being. AVT suggests that interpersonal communication, peer interactions, and

other social practices (Tsai, 2007) are cultural sources that shape ideal affect. Thus,

broader acculturation in behavior and interpersonal communicating may be more

influential than orientation to the U.S. culture.

Third, the current study showed that ideal affect predicted actual affect, thus indicating that ideal affect regulates individuals' affective experiences. However, I did not assess emotion regulation strategies in this study. Ideal affect may influence actual affect differently across cultures by utilizing different emotion regulation strategies. For example, previous research has shown that Western cultures value emotional expression more and emotional suppression less than East Asian culture (Ford & Mauss, 2015; Su, Wei, & Tsai, 2014; Wei, Su, Carrera, Lin, & Yi, 2013). It will be important for future research to investigate the effect of emotion regulation in influencing the association between ideal and actual affect.

Implications

Understanding changes in affect and the associated well-being of international students has practical implications for the society. For example, it may facilitate better interpersonal communication. LAP affect is usually related to less excited facial expressions or responses, which may lead individuals in American culture to treat it as unresponsive or rude. Knowing that East Asian culture values LAP affect may decrease the bias of teachers and students, which in turn may promote a more effective interpersonal communication in class. It may also help institutions to offer more effective mentoring for the East Asian international student community. For example, East Asian students are less likely to seek help from a counseling center (e.g., Leong & Lau, 2001; Maki & Kitano, 2002). Understanding the association of affect and depressed mood and

its development can help consultants and other related practitioners to offer better professional advice or assist students in adapting to American culture. It may also help instructors of school programs to organize activities for international students that not only address cross-cultural interactions, but also focus on promoting affective experiences that are valued in the American culture.

In conclusion, ideal affect predicts orientation to the U.S. culture and actual affective experience of Chinese international students over time. The length of time stayed in the United States moderates the association between affect and depressed mood, such that both HAP and LAP affect come to matter more for lower depressed mood. Together, these findings have implications for future research to further investigate development of ideal and actual affect during changes in cultural context.

Chapter Twelve: General Discussion

Cross cultural studies have showed that American culture and East Asian culture differ in how they want to feel HAP and LAP affect (Tsai et al., 2006; Tsai, Miao, et al., 2007), as well as how they want to feel positive affect over negative affect (e.g., Grossmann et al., 2015). The presented research that including Study 1 and 2, is among the first to examine cultural differences in affect between the U.S. and Chinese international students both cross-sectionally and longitudinally. In addition, it is also the first research to directly examine emotional acculturation and acculturation together. Findings from the studies support cultural differences in HAP affect (Tsai et al., 2006; Tsai, Miao, et al., 2007) and affect styles (Miyamata & Ryff, 2011). Findings of LAP affect and orientation to the U.S. culture are less consistent with previous research (Tsai, 2013) or study hypotheses.

Findings from study 1 and 2 indicate that valuing higher level of HAP affect is adaptive for Chinese international students to adjust to American culture. Research suggests that valuing HAP affect is functional for social communication and maintaining social relationships in American culture (Tsai, 2007). Findings in current studies are consistent with research showing that valuing HAP is associated with lower depressed mood for the U.S. students and for Chinese international students when they stayed in the

United States for a longer time, and valuing HAP affect also predicted lower depressed mood for Chinese international students by regulating their HAP experience. Different from AVT (Tsai, 2013; Tsai & Park, 2014), findings from the current studies indicate that valuing LAP affect is adaptive for both the U.S. students and Chinese international students, and the effects of LAP affect on depressed mood is even stronger for the U.S. student than for Chinese international students. Findings from the within-person measure and LCA of positive affect over negative affect from study 1 and 2 indicate that culture shapes how individuals value positive versus negative affect between the U.S. and Chinese international students, and values place on positive over negative affect may regulate actual experiences of positive and negative affect, which in turn have implications on subjective well-being, such as experience of depressed mood.

Taken together, findings from the two studies suggest that cultural factors influence which affect individuals want to feel, which in turn has consequences on their actual affect and subjective well-being. Time spent in the United States has a stronger effect in moderating these associations than does orientation to the U.S. culture, which suggest that other aspects of the acculturation process and interactions in the context of American culture are more important in shaping Chinese international students' affective values and experiences. Thus, future research need to further investigate the effects of acculturation or exposure to the U.S. culture on affect by incorporating more levels acculturation measures, such as measures of acculturation behaviors. In addition, future

research also needs to further explore cultural influence on effect of LAP affect on depressed mood. Specifically, factors that account for the stronger effect of LAP affect on depressed mood for the U.S. culture should be explored.

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