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**Acculturation, social connectedness, and subjective well-being among Chinese international students: A test of Berry's acculturation framework**

by

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## Abstract

Based on Berry's (1997) acculturation framework on acculturation and adjustment, this study examined the link from acculturation experience (i.e., acculturation and enculturation) through coping strategies (i.e., social connectedness) to long-term outcomes (i.e., future subjective well-being SWB). Two hypotheses were proposed. First, it was expected that social connectedness in mainstream society (i.e., Mainstream SC) would mediate the association between acculturation and future SWB (i.e., life satisfaction, positive affect, and negative affect). Second, it was expected that social connectedness in the ethnic community (i.e., Ethnic SC) would mediate the association between enculturation and future SWB. Using a longitudinal design, a total of 203 Chinese international students completed an online survey at two time points. General social connectedness at Time 1 and SWB (i.e., life satisfaction, positive affect, and negative affect) at Time 1 were controlled for in this study. The results partially supported the above two mediation hypotheses. First, Mainstream SC at Time 2 partially mediated the association between acculturation at Time 1 and life satisfaction and positive affect at Time 2 (but not for negative affect at Time 2). Second, Ethnic SC at Time 2 partially mediated the association between enculturation at Time 1 and negative affect at Time 2 (but not for life satisfaction and positive affect at Time 2). Furthermore, unexpectedly, Mainstream SC at Time 2 partially mediated the association between enculturation at Time 1 and life satisfaction and positive affect at Time 2 (but not negative affect at Time 1). Limitations, future research directions and implications were also discussed.

## CHAPTER 1: INTRODUCTION

According to the Open Door annual report, in the year of 2010, the Chinese international student enrollment in the U.S. campuses increased by 30 percent, making China the number one country of origin for international students in the United States (Institute of International Education, 2010). One challenge facing almost all of them would be how to adapt to a completely new culture in the United States. Chinese international students are continually exposed to western values, life styles, and beliefs, which are different from those fostered by their upbringing (Iwamoto & Liu, 2010). Inevitably, they are influenced by the eastern and western cultures in the socialization process known as acculturation, in which individuals adjust, change, or keep their ethnic cultural values and behaviors after entering into a new culture with a different set of values and behaviors (Kim, 2006).

In counseling, not understanding the socialization process could be counterproductive for counselors helping clients from China; however, little research has specifically focused on the population of Chinese international students in the United States. For example, of all the 64 studies on international students' psychosocial adjustment in the United States published in peer-reviewed journals between January 1990 and January 2009, only five studies focused specifically on students from Mainland China (Zhang & Goodson, 2011). Among these studies, researchers examined various factors--e.g., gender, family contact frequency, age, length of stay in U.S., perceived support from interpersonal social networks, attachment style, English proficiency, maladaptive perfectionism, identification with the host culture, American cultural knowledge, and satisfaction--as predictors of students' psychological distress and/or sociocultural adjustment difficulties (Kline & Liu, 2005; Ye, 2006a; Wang & Mallinckrodt, 2006; Wei et al., 2007; Zhang & Rentz, 1996).

Even though some studies have contributed to the literature on unique aspects of acculturation, there are several issues that still need to be addressed. First, none of the studies is likely to be comprehensive enough to delineate the complicated processes involved in acculturation; there are still many missing pieces from the puzzle. Second, all previous studies have used cross-sectional designs, which fail to reveal the fluctuating nature of this cultural adjustment process and the changing salience of predictors (Zhang & Goodson, 2011). Third, these studies mainly focused on negative psychological outcomes (e.g., acculturative stress, psychological distress, etc.) of participants, only seeing the acculturation process as a stressful event rather than a new and inspiring learning experience (Yoon, Lee, & Goh, 2008).

By using a longitudinal design, the present study aims to enrich the literature on acculturation by exploring how Chinese international students' acculturation orientation (i.e., acculturate to American culture or maintain ethnic culture) impacts on their subjective well-being (including positive affect, negative affect, and life satisfaction) through their social connectedness in the mainstream society (i.e., U.S.; Mainstream SC) and social connectedness in the ethnic community (Ethnic SC). Moreover, we adopted Berry's (1997) acculturation framework as a conceptual framework to inform this study. All the terms and concepts are explained more in detail.

### **Acculturation Framework**

Before the introduction of the present study's conceptual framework, it is necessary to distinguish two key variables involved with acculturation orientation--acculturation and enculturation. Acculturation is broadly defined as cultural socialization to the mainstream society, and enculturation is broadly defined as cultural socialization to the culture of origin

(Kim, 2006). Early years of study on acculturation proposed that the more acculturated an immigrant is to a mainstream culture, the less enculturated he or she would be to their ethnic culture (Berry & Annis, 1974; Szapocznik, Scopetta, Kurtines, & Aranalde, 1978). Yet, in recent years a bilinear model of acculturation is becoming more widely accepted; acculturation and enculturation are two independent processes that may happen simultaneously within a person. In other words, maintaining ethnic identity is independent from the development of mainstream cultural identity (Kang, 2006). In the present study, we also conceptualize acculturation with this bilinear approach.

Berry (1997) developed an acculturation framework as guidance for research on acculturation and adjustment, which depicts the acculturation process that leads to adaptation to a new cultural environment for immigrants (i.e., acculturation experiences → appraisal of experiences → coping strategies → immediate effects or outcomes → long-term outcomes). As it shows in the model, coping strategies as well as coping resources have mediation effects in the process of acculturation. Based on this model, various coping strategies/resources that immigrants adopt in the process can lead to various immediate and long term outcomes (Berry, 1997).

### **Acculturation/Enculturation and Subjective Well-Being**

Berry's (1997) acculturation framework help researchers understand the process of acculturation and the complex variables involved in it. In the acculturation literature, studies have been interested in understanding how acculturation is associated with international students' psychosocial functioning (Zhang & Goodson, 2011). In the acculturation process, individuals are able to adjust to new cultures and benefit from new intercultural experiences (Zheng, Sang, & Wang, 2004). One direction to advance the international students and

acculturation literature is to examine the potential positive outcomes in the acculturation process such as self-esteem, life satisfaction, or subjective well-being (e.g., Zheng et al., 2004; Yoon, Lee, & Goh, 2008). Among these positive outcomes, subjective well-being has received increasing attentions in the last four decades (Diener, Suh, Lucas, & Smith 1999). Subjective well-being (SWB) refers to “a broad category of phenomena that includes people’s emotional responses, domain satisfactions, and global judgments of life satisfaction” (Diener et al., 1999; p. 277). Operationally, Diener et al.’s measure of SWB consists of two components: an affective part, which refers to both the presence of positive affect (PA) and the absence of negative affect (NA), and a cognitive part, which associates with an individual’s satisfactory perceptions of life. Individuals with higher SWB experience more positive emotions and feelings, appraising their lives as meeting their expectations as “ideal” (Diener et al., 1999). For many Chinese international students, studying abroad is a learning experience where one can learn independence and improve adaptability to new environments, which may be associated with one’s life satisfaction and SWB. Therefore, the present study is designed to measure Chinese international students’ SWB in the process of acculturation/enculturation based on these three aspects: positive affect, negative affect, and life satisfaction.

### **Mainstream SC and Ethnic SC as Mediators**

According to Berry’s (1997) theoretical framework of acculturation, some strategies (e.g., coping strategies, social connectedness, etc) can mediate the process of acculturation experiences to adjustment. Thus, the present study examined: whether Mainstream SC mediated the association between acculturation and SWB; whether social connectedness in the Ethnic SC mediated the association between enculturation and SWB. Understanding



Mainstream SC and in the Ethnic SC as mediators may serve as a potential intervention tool for mental health professionals to improve these students' mental health well-being.

Social connectedness is defined as a subjective sense of interpersonal closeness with the social environment (Lee & Robbins, 1995, 1998). Through interpersonal relationships, individuals may feel supported and gain a sense of connection and relatedness in the surrounding environment. Thus, social connectedness serves as a major source of the need to feel connected to and understood by others, which is one of the essential psychological needs for optimal psychological growth and well-being (Deci & Ryan, 2000).

Moreover, research on acculturation and social connectedness found that Mainstream SC and Ethnic SC may mediate the relation between acculturation/enculturation and subjective well-being (SWB). In Berry's (1997) review, some studies found that maintaining links to one's heritage culture is associated with less stress (e.g., Vega, Kolody, Valle, & Weir, 1991), whereas others found that having links to members in the host culture is helpful in psychologically adapting to a new culture, especially when relationships meet one's expectation (e.g., Berry, 1997; Berry & Kostovcik, 1990). Yoon, Lee, and Goh (2008) examined the mediating effect of social connectedness in the mainstream and ethnic communities among Korean immigrants in the United States; their results indicated that Mainstream SC had a tendency to partially mediate the association between acculturation and SWB, and the Ethnic SC had a fully mediating effect in the association between enculturation and SWB.

When Chinese international students enter into a different culture, many often lose their previous social connections, and because of that find it challenging to establish a sense of social connection in a completely strange environment (Sandhu, 1994). Some Chinese

international students may come with an intention to get involved in the American mainstream culture and society. When they acculturate into the new culture, a sense of belonging to the U.S. society (i.e., more Mainstream SC) may facilitate the acculturation process and motivate them to get more exposure in the mainstream society; in this case, an increase in cross-cultural contacts with Americans may predict a better psychosocial adjustment, which might be associated with a better SWB (e.g., Li & Gasser, 2005, Wang & Mallinckrodt, 2006).

While they acculturate into the American culture and society, many Chinese international students may still wish to maintain a strong connection with their home culture and Ethnic SC through long distance social network (i.e., family and friends from China) and through making social connections with other co-national friends (e.g., Ye, 2006b). This wish of maintaining ethnic connections could be especially strong for Chinese international students as their cultures tend to strongly value collectivism (Triandis, 1989). Therefore, when they enculturate to the Chinese cultures that already exist within in the United States, a sense of connectedness to the Chinese community (i.e., more social connectedness to the Ethnic SC) may facilitate their enculturation process. Through this social connectedness, Chinese international students may feel more connected with other co-nationals and perceive tremendous amount of social support by sharing frustrations of living in a completely new world, thus resulting in a better SWB (e.g., Ye, 2006).

With such a drastic increase in Chinese student enrollment in recent years in U.S. universities, Chinese ethnic communities have become alternatives to the mainstream U.S. society. Especially in larger universities, students have increased freedom to choose which social circles they would like to socialize. Depending on their needs, social connections

pursued in either the mainstream society or in the Ethnic SC may both be beneficial for Chinese international students trying to adjust to a new environment while maintaining well-being in the United States. In other words, those with strong acculturation may be more likely to report SWB through a sense of connectedness in the mainstream society. Conversely, those with strong enculturation may be more likely to report SWB through a sense of connectedness in the ethnic community.

### **The Present Study**

Based on the rationale above and Berry's (1997) theoretical framework of acculturation, it appears that Mainstream SC and Ethnic SC, acting as coping resources among all factors involved in the acculturation process, may mediate the association between acculturation/enculturation and subjective well-being (SWB) among Chinese international students' (e.g., Yoon, Lee, & Goh, 2008). There is warrant for examining this, as the current literature has not examined the proposed mediation effect for the population of Chinese international students living in the United States. Furthermore, after reviewing all studies on international students (1992-2009), Zhang and Goodson (2011) concluded that future studies need to examine the mediation process, conduct more studies with a longitudinal design, and focus on a specific international student group. Therefore, under Berry's acculturation framework and using a longitudinal design with two time points, this study aims to advance literature by evaluating the potential role of Mainstream SC and the Ethnic SC as mediators between acculturation/enculturation and SWB among Chinese international students living in the United States.

Two hypotheses follow. First, it is hypothesized that Mainstream SC at Time 2 would *mediate* the association between acculturation (but not enculturation) at Time 1 and SWB at

Time 2 after controlling for general social connectedness at Time 1 and SWB at Time 1.

Second, Ethnic SC at Time 2 would *mediate* the association between enculturation (but not acculturation) at Time 2 and SWB at Time 2 after controlling for general social connectedness at Time 1 and SWB at Time 1 (See Figure 1). Under this set of hypotheses, better future SWB is achieved either through high Mainstream SC while Chinese international students acculturate to the host culture, or through high Ethnic SC while individuals enculturate to the heritage culture.

## CHAPTER 2: LITERATURE REVIEW

The following literature review first starts with an overview of the concepts of acculturation, enculturation, and Berry's theoretical framework of acculturation (1997). After that, a rationale for the chosen acculturation measures in the present study is given, along with a brief overview of the development of different acculturation/enculturation measures. Next, the concept that related to subjective well-being (SWB) and its measures are discussed, followed by research on the specific Mainstream SC and Ethnic SC related to acculturation. This part of discussion also addresses how acculturation orientation (i.e., acculturation and enculturation), social connectedness to each community (i.e., Mainstream SC and Ethnic SC), and SWB have been previously linked in the literature, along with an explanation for how these variables are associated in a more complex mediation model presented in the study.

### **Acculturation and Enculturation**

The early research on conceptual development of acculturation in the United States seems to be mostly conducted by sociologists and anthropologists. In the 1910s, the theory of "melting pot" was brought up in the United States by Robert Park and other theorists (Persons, 1987). Based on an ecological framework that included three stages (contact, accommodation, and assimilation), Park proposed that contacts between different cultural groups force people to accommodate in order to minimize inter-group conflict; eventually, immigrants in the American society engage in the process of cultural assimilation as a result of accommodation, an example of which would be intermarriage (Persons, 1987). According to this rationale, assimilation seems to be the only outcome from inter-cultural contact, and this process is irreversible once started (Padilla & Perez, 2003).

A couple decades later, anthropologists Redfield, Linton, and Herskovits (1936) expanded Park's three stage model of acculturation and provided a classical definition of acculturation, which is still widely quoted. "Acculturation comprehends those phenomena which result when groups of individuals having different cultures come into continuous first hand contact, with subsequent changes in the original cultural patterns of either or both groups" (Redfield, Linton, & Herskovits, 1936, p. 149). This definition clearly distinguishes acculturation from assimilation, addressing that assimilation may be a phase of acculturation but not identical to it. Later, the Social Science Research Council (1953) developed this definition further by including the aspect of an individual's psychology. Since then, a clear distinction between psychological acculturation—the individual-level changes arising from acculturation—and group-level acculturation—changes in the culture of the group—has been established (e.g., Graves, 1967).

Initially, the process of acculturation was described as a unilinear model: the more acculturated an individual is to the mainstream culture, the more likely this individual agrees with the mainstream cultural values and behaviors, and the less likely he or she agrees with the values and behaviors from the home culture (Berry & Annis, 1974; Szapocznik, Scopetta, Kurtines, & Aranalde, 1978). However, this view suggests that the process of individuals pursuing contacts in the host culture and the process of enhancing the connection with the ethnic group are the two ends of a continuum and could not happen at the same time. In recent years, a bilinear model of acculturation is more accepted in the research literature. Cultural socialization to the host culture and to the culture of the origin are seen as two independent processes that can happen at the same time within an individual. Under this assumption, acculturation is defined as the process of cultural socialization to the host culture,

whereas enculturation is defined as the cultural socialization to the culture of origin (Kim, 2006).

Meanwhile, the new term of “biculturalism” was emerging in research literature, suggesting that individuals are able to accommodate to the mainstream and ethnic cultures when in contact with both (e.g., Cameron & Lalonde, 1994). Acculturation was no longer considered to be a mere bidimensional process, in which individuals move from one end (highly enculturated) to another (highly assimilated). Instead, it was conceived that individuals entering in a new culture would be able to adapt successfully to the dominant society while remaining strong ethnic relations with their countries of origin (Berry, 2005).

Berry (1980) was the first scholar to systematically review how immigrants adapt to a new culture (i.e., acculturate) at the individual level. Based on the individuals’ degree of ethnic cultural maintenance and their degree of inter-group contact and participation in the new culture, Berry (1990) defined four acculturation strategies extensions to the bilinear model of acculturation—assimilation (giving up one’s heritage culture and identity, and seeking the relationship with other cultures), separation (valuing the heritage culture and identity, and avoiding relationship with other cultures), integration (maintaining both heritage and host culture and seeking interactions in both cultures), and marginalization (little maintenance of either heritage culture and identity, and avoidance of interactions with others). Berry (1997) also added that, even though an individual may have a most preferable strategy over the four in the acculturation process, it is possible for the individual to have various strategies according to his or her location; for example, more cultural maintenance might be sought at private places (e.g., home, ethnic community) than in public settings (e.g., school, workplace). Based on this rationale, acculturation and enculturation are not exclusive

individual difference variables (e.g., individuals with integration strategy); there could be some flexibility in acculturation/enculturation strategies that are situationally dependent. Understanding these situational variables could potentially help individuals exposed to both mainstream and ethnic groups adapt to their social environment with greater ease.

Eventually, Berry (1997) established a general framework for understanding acculturation. He reviews immigrants' changes during acculturation and adaptation at a group level and at an individual level, and he includes *situational* variables (e.g., political context, economic situation, and demographic factors from the society of origin; the ethnic group's collective changes in a new culture; multicultural attitudes and social support in the society of settlement), as well as *person* variables (e.g., gender, age, education, pre-acculturation, status, acculturation motivation, cultural distance, personality, length of stay, acculturation strategies, coping strategies, social support, societal attitudes, etc.) in his model to reveal factors that provide a broad structure for acculturation to take place.

The central flow of Berry's (1997) model depicts the highly variable process of acculturation and adaptation within an immigrant: after entering to a different culture, the person first gets exposed to new acculturation experiences, and then he or she comes up with their own appraisals of these experiences (stressors). To deal with the problematic new life events, the person engages in coping strategies (e.g., active coping or passive coping) that either effectively reduces stress to a tolerable level or increase the level of stress even more. These complex immediate effects of coping (i.e., stress) in the acculturation process make the person adjust more and improve the "fit" between him or her and the environments. In the long term, adaptation may be achieved: the person could either become better adjusted to the environment, or become more resistant to, sometimes move away, from the environment



(Berry, 1997). During the process of acculturation, other factors may emerge and mediate/moderate any of the links in this process, along with those factors existing prior to acculturation. Therefore, the strength of Berry's acculturation framework is that it highlights the potential mediation and moderation effects of various factors in the acculturation process. In the present study, I focused on examining the mediation between acculturation/enculturation and outcomes such as subjective well-being.

### **Measure of Acculturation/Enculturation**

Because acculturation in the present study is understood as a bilinear construct—acculturation and enculturation occur simultaneously—and because the focus of the study is on Chinese international students, only measures that both employ a bilinear model and are designed for Asians or Asian Americans are reviewed in the literature. The earliest scale found in the literature that entails such features is Multicultural Acculturation Scale (1987) designed by Wong-Rieger and Quintana. The target cultural group was Southeast Asian (SEA) immigrants and Hispanic immigrants. This scale was used to compare the acculturation of these two ethnic groups residing in Oklahoma as a function of their cultural background, permanent status, and other pre- and post-arrival factors. The finding was that, compared to the more assimilated Hispanic immigrants, SEA refugees tended to maintain a strong ethnic orientation; for Hispanic and SEA sojourners, they were more bi-culturally oriented (Wong-Rieger & Quintana, 1987).

Tsai, Ying, and Lee (2000) studied the meaning of “being Chinese” and “being American” from three different Chinese immigrant groups: American born Chinese, Chinese immigrants who arrived in U.S. before or at 12 years old, and Chinese immigrants arriving after 12 years old. Because there was no instrument at that time adopting a bidimensional

model of acculturation, the authors developed the General Ethnicity Questionnaire (GEQ) to test both unidimensional and bidimensional models of acculturation. Two versions of the same instrument were created, each asking respondents to report how oriented they were to Chinese culture or American culture independently. Unfortunately this instrument showed low independence between its two subscales (Chinese culture vs. American culture,  $r = -.60$ ) (Tsai, 2001).

One possible reason for low independence between the two subscales of GEQ may be the utilization of quite a few frequency questions (e.g., asking “how often do you eat American food”) instead of endorsement questions (e.g., asking how strongly one agrees with the statement “I like American food”) (Kang, 2006). As Kang (2006) pointed out, a respondent’s answer to one frequency question might constrain her response to its counterpart, for the time devoted to one same activity in two cultures cannot exceed 100% of the time. Therefore, compared to acculturation instruments with frequency questions, other instruments that use only the endorsement questions may be more effective to ensure “conceptual independence” (Kang, 2006), which is essential to validate the bidimensional construct of acculturation.

Based on the rationale above, Vancouver Index of Acculturation (Ryder, Alden, & Paulhus, 2000) is chosen to be the measure of acculturation and enculturation in the present study. Using a bidimensional model, it was developed based on the specific difference between Asian and North American culture, and later it was extended to a wider range of ethno-cultural groups. The merit of this scale is to the fact that it contains all endorsement questions (e.g., “I believe in the values of my heritage culture/mainstream North American

values”), thus showing good independence between the two subscales ( $r = -.09$ , Ryder, et al., 2000).

### **Subjective Well-Being and Acculturation/Enculturation**

Subjective well-being (SWB) is defined as people’s emotional and cognitive evaluation and judgment of how satisfactory their life is and how happy they are, both at the moment and for a longer period of time (Diener, Oishi, & Lucas, 2003). Early research on SWB focused on the external factors as determinants of satisfying lives, such as various demographic factors (Wilson, 1967). In recent years, some psychologists argued that external factors only have a moderate effect on one’s SWB; SWB is stable over time, and it has strong correlation with personality traits (Diener, et al., 2003).

The debate on whether environmental factors or personality factors contribute to individuals’ SWB is not of importance in the present study; however, it is important to point out that immigrants’ SWB status might be affected by the environmental changes after getting in contact with a new culture. In Yoon, Lee, and Goh’s (2008) study on Korean immigrants, acculturation accounted for 45% variance of SWB, which suggested a substantial effect of acculturation on immigrants’ SWB. The authors also added that the relationship between acculturation and SWB is far more complicated than some simple direct or indirect connections, thus it deserves more research attention in the future (Yoon, Lee, & Goh, 2008).

### **Measure of SWB**

Previous research on SWB have demonstrated three independent aspects of its construct, including positive affect, lack of negative affect, and life satisfaction (e.g., Andrews & Withey, 1976). Even though each aspect reflects how people feel or evaluate

certain circumstances in their lives, these aspects still remain independent from one another (Diener et al, 2003). Therefore, one suggestion to measure SWB is to use Positive Affect and Negative Affect Scale (PANAS; Watson, Clark, & Tellegen, 1988) and Satisfaction with life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985), and the combined scores would provide good indication of SWB. The present study adopted this set of SWB measure.

### **Social Connectedness**

Social connectedness was first defined by Lee and Robbins (1995) as an individuals' "internal sense of belonging and subjective awareness of being close in the social world". It could be a sense of closeness with one's family, friends, peers, acquaintances, strangers, community, and society as a whole. This concept was developed based on Kohut's theory (1984) which emphasized greatly on the human need for belongingness. A sense of social connectedness allows people to feel being a part of their world and helps people identify with those who they may perceive as different individuals otherwise. Without much sense of social connectedness, people may feel especially frustrated and disappointed in the social world when they believe no one can understand them. Such individuals may start with social difficulties, and eventually they may distance themselves from the society in extreme cases.

To measure social connectedness, Lee and Robbins (1995) developed the Social Connectedness Scale, which consists of three aspects of belongingness: connectedness, affiliation, and companionship. They asked individuals to indicate the degree to which they feel distant and disconnected from the social world by items such as "I don't feel related to anyone" and "I catch myself losing all sense of connectedness with society". This measurement provided a reliable and valid tool to study the impact of social connectedness on mental health outcomes (Lee & Robbins, 1995). For example, Lee and Robbins (1998)

studied how social connectedness relates to anxiety, self-esteem, and social identity among a sample of undergraduate female students. Their findings show a negative correlation between social connectedness and anxiety and a positive correlation between social connectedness and self-esteem (Lee & Robbins, 1998).

### **Mainstream SC and Ethnic SC**

While social connectedness is a relatively new concept in the acculturation/enculturation research area, the contribution of social support for international students' well-adjustment and adaptation has been widely studied. Social support from new social networks that sojourners established in the host country is suggested to have a positive function on cross-cultural adjustment (e.g., Kim, 1988; Berry, 1997). Social support from long distance social networks from their home countries also showed to have a facilitative effect in the cultural adjustment process (e.g., Ying & Liese, 1991; Ye, 2006b). For example, Cemalcilar, Falbo, and Stapleton (2005) reviewed the role of cyber communication in Chinese international students' adaptation. They found that contacts with the home country through internet affects Chinese international students' maintenance of ethnic identity and their perception of available social support, and that individuals who are more involved in the host cultural customs and traditions and who have better relationships with the host society tend to achieve better psychosocial adjustment (Cemalcilar et al., 2005).

In a systematic review of studies (1990-2009) on predictors of international students' psychosocial adjustment to life in the United States, only five out of 64 studies specifically studied the population of Chinese international students (Zhang & Goodson, 2011). Out of these five studies, two addressed the role of contacts with family and contacts with the host society in Chinese international students' psychosocial adjustment. Kline and Liu (2005)

found that Chinese family communication practices (e.g., phone calls) plays a positive role in becoming acculturated and reducing stress in a new country for Chinese international students. Besides, students who experience more stress tend to communicate more with their family members through communication practices (Kline & Liu, 2005).

Moreover, Ye (2006b) studied the role of traditional and online support networks in Chinese international students' cross-cultural adaptation, and she found that Chinese students reported less social difficulties when they perceive support from interpersonal networks in the host country and from online ethnic social groups, as well as less mood disturbance with more perceived support from interpersonal networks and long distance networks in the home country. She also added that maintaining old ties from the home country may help enhance positive emotion, but does not foster social learning; however, the interpersonal support and online ethnic social groups may promote such learning, thus decrease perceived social difficulties in the new environment. Thus, social contacts in the host society and social contacts in the ethnic community both have some positive impacts on Chinese international students' adaptation, but these effects take place through different paths.

Even though many researchers have looked at the role of social support in cross-cultural adaptation, social connectedness in the mainstream and ethnic communities as coping resources has only recently been examined (e.g., Yoon et al., 2008). Yoon et al. (2008) expanded the concept of general social connectedness to Mainstream SC and Ethnic SC. They found that in the sample of Korean immigrants, the association between subjects' acculturation and subjective well-being (SWB) was mediated by the Mainstream SC with less statistical significance, and the association between subjects' enculturation and SWB was mediated by the Ethnic SC. In another recent study, Yoon and Lee (2010) found that

social connectedness is an important moderator in Korean immigrants' SWB; Mainstream SC and Ethnic SC was only significant predictors for Korean immigrants who highly valued its importance. These studies in a way supported Berry's (1997) argument that some variables (such as coping resources) can be influential in predicting the association between acculturation and outcome.

### **Acculturation/Enculturation, Mainstream SC and Ethnic SC, and Subjective Well-Being**

As addressed earlier, studies in the acculturation literature are not sufficient enough to explain the complex association between acculturation/enculturation and subjective well-being (SWB) of Chinese international students in the United States. Therefore, the present study aims to explore this association by including Mainstream SC and Ethnic SC as potential mediators. Relationships established in the American society and/or the Chinese ethnic community may directly impact Chinese international students' SWB (e.g., Ye, 2006).

On the one hand, challenges that arise when Chinese international students come to the United States, such as language difficulty, acculturation stress, and discrimination, could be very stressful and anxiety-provoking (e.g., Wang & Mallinckrodt, 2006; Wei et al., 2007). Besides, a sense of "being an outsider" in the mainstream society could also be frustrating, especially when they are from a collective culture entering into an individualistic society. In this case, maintaining connections with the ethnic community (e.g., being friends with other Chinese international students) might eliminate some of the distress and help them perceive less anxiety and threat from the environment, since they would be able to find other international students who share similar study-abroad experiences and cultural backgrounds.

On the other hand, other concerns may arise when Chinese international students enculturate through social connections in their ethnic communities. Students might worry they are not getting enough out of the study-abroad experience and might feel shameful or guilty for wasting their time and their parents' money in the United States, because they are not getting enough exposure to the American culture. Therefore, by making more social connections with Americans and getting more involved in the mainstream society (e.g. actively interacting with Americans, participating in campus organization activities), Chinese international students may gradually gain more self-efficacy in establishing connections with Americans, get more comfortable with the cultural values and life styles in the United States, and may eventually establish a sense of achievement and fulfillment from their study-abroad experiences.

Based on the rationale above, Chinese international students who are more acculturated are likely to have a higher subjective well-being through their Mainstream SC. Similarly, those who are more enculturated are likely to have a higher subjective well-being through their Ethnic SC. In the present study, the longitudinal design (i.e., Time 1 at the fall semester and Time 2 at the spring semester) is adopted to capture mediation effects. Furthermore, the effect of general social connectedness will be controlled in order to specifically study the mediation effect of Mainstream SC and Ethnic SC, not just due to their general capacity of social connectedness. The initial SWB (i.e., Time 1) was also controlled for to rule out the possibility that participants' SWB at Time 2 is due to their SWB in the first place (i.e., Time 1). After taking into all the potential confounds into consideration, the present study aims to continue this line of research on the mechanism between acculturation/enculturation and SWB.



## CHAPTER 3: METHODS

**Participants**

A list of all Chinese international students' contact information was obtained from the registrar's office at a large Midwestern state university in the beginning of the 2011 fall semester. Four hundred and seventeen participants were recruited from the Chinese international student population from mid-September to mid-October, 2011. All students were contacted via emails and/or phone calls. At Time 2, which was the following February of the spring semester, 2012, participants who responded to the Time 1 survey were contacted again and reminded to take the Time 2 survey via email reminders sent from the principle investigator.

In the final dataset, data from participants who responded at both Time 1 and Time 2 were merged. The final sample consisted of 213 participants, with 122 males (57%) and 90 (43%) females (one did not report their sex). Among them, 107 participants were undergraduate students (50%), and 106 were graduate students (50%). The age ranged from 18 to 34 years old ( $M = 23.09$ ,  $SD = 3.08$ ). At Time 1, participants reported their length of stay in U.S. ranging from one month to eight years and one month ( $M = 24.79$  months,  $SD = 18.14$ ). More than half of the participants were single, and close to half of the participants were married or in a dating/committed relationship.

**Instruments**

**Acculturation/Enculturation (Time 1).** Vancouver Index of Acculturation (VIA; Ryder et al., 2000) is a 20-item instrument measuring the extent to which people adhere to the cultural values and behaviors of the mainstream (i.e., North American) culture and the heritage culture, which was used to measure acculturation and enculturation. There are two

subscales included in the inventory, with each subscale containing 10 items. One of the subscales relates to the North American culture, including items such as “I am comfortable working with typical North American people”. The other subscales relates to the heritage culture, with items such as “I often participate in my heritage cultural traditions”. Participants responded each item on a Likert scale from 1 (strongly disagree) to 9 (strongly agree). A higher score suggests a higher level of identification with a corresponding culture. In the only study that used this scale on Chinese international students (in Germany), the Cronbach’s alphas were .85 for the Heritage subscale and .81 for the Mainstream subscale (Zhang, Mandl, & Wang, 2010). For the present study, the Cronbach’s alphas for acculturation and enculturation were .81 and .80, respectively. Significant correlations between the Suinn-Lew Asian Self-Identity Acculturation Scale and the VIA subscales ( $r_s = -.30$  for the Heritage subscale and  $.54$  for the Mainstream subscale) (Ryder et al., 2000) provide evidence for validity.

**Social Connectedness (Time 1).** Social Connectedness Scale (SCS; Lee & Robbins, 1995) is an eight item scale measuring a general emotional sense of lacking connectedness, affiliation, and companionship that may be experienced even among close relationships. Participants responded to eight statements based on a Likert scale from 1 (strongly disagree) to 6 (strongly agree). Sample items were “Even among my friends, there is no sense of brother/sisterhood” and “I feel distant from people”. A higher score suggests more lack of the sense of social connectedness. In a previous study on relationship between social connectedness and family income in Taiwan, the Chinese version of this scale has a test-retest reliability of .87 over two weeks and a high internal consistency of .91 (Chen & Chung, 2007). In the present study, the Cronbach’s alpha was .90, suggesting a good internal

consistency. Also in Chen and Chung's study (2007), scores on the Social Connectedness Scale had significant correlations in the expected directions with scores on the measures of global loneliness, intimate loneliness, and social loneliness, providing evidence of validity of this scale.

**Social Connectedness in Mainstream Society and Social Connectedness in the Ethnic Community Scales (SCMN and SCETH; Yoon, 2006) (Time 2).** The two sets of five parallel items measured respective Mainstream SC and the Ethnic SC. Participants rated the degree of agreement to each item on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). A higher score represented greater sense of connectedness to the corresponding community. Sample items were "I feel a sense of closeness with U.S. Americans" (SCMN) and "I feel accepted by Chinese community" (SECTH). In a previous study with a sample of Korean immigrants in the United States, the Cronbach's alphas of the SCMN and the SCETH were .92 and .93, respectively (Yoon & Lee, 2010). In the present study, the Cronbach's alpha for SCMN was .88; the Cronbach's alpha for SCETH was .94. This study also revealed positive correlations between the SCMN and acculturation, and between the SCETH and enculturation, and negative or nonsignificant correlations between the SCMN and enculturation, and between the SCETH and acculturation, suggesting good convergent and divergent validity with acculturation/enculturation measures (Yoon & Lee, 2010).

**Satisfaction with Life (Time 1 and Time 2).** Satisfaction with life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) is a 5-item scale measuring global life satisfaction based on participants' cognitive self evaluation. Participants responded to five statements on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*), with a higher score indicating greater life satisfaction. A sample item was "In most ways my life is close to my ideal." In a sample

of Chinese international students in Germany, the Cronbach's alpha for this scale was .93, (Zhang, Mandl, & Wang, 2010). In the present study, the Cronbach's alphas at Time 1 and Time 2 were .85 and .87, respectively. Negative correlations between the SWLF and a checklist of clinical symptoms and neuroticism indicated the construct validity of the SWLS (Diener et al, 1985). Another study on validity of this scale using a sample of Hong Kong university students also suggested good cross-cultural validity of this scale after comparing SWLS scores of university students from U.S., China, Hong Kong, and Korea (Sachs, 2004).

**Positive Affect Negative Affect Scales (PANAS; Watson, Clark, & Tellegen, 1988) (Time 1 and Time 2).** PANAS consists of two 10-item scales measuring aroused states of both positive affect and negative affect. Participants responded their degree of various emotions over a limited period of time on a scale from 1 (very slightly or not at all) to 5 (extremely), with a higher score indicating a stronger emotion (e.g., "interested", "ashamed", etc.). In the previous study with Korean immigrants, the Cronbach's alphas for PA and NA were .89 and .88, respectively. In the present study, the Cronbach's alphas for PA and NA at Time 1 were .86 and .88, and those at Time 2 were .87 and .92. The SWLS had a positive correlation with PA and a negative correlation with NA, suggesting the convergent and discriminant validity, respectively. (Yoon & Lee, 2010).

### **Procedure**

All Chinese international students whose contact information could be obtained from the office of registrar were contact via email or phone and were invited to participate in the online survey. Participants who responded at Time 1 were contacted again in the following semester to be reminded to complete the Time 2 survey online. For each time point, a reminder email was sent to encourage them to participate in this study. To match the data at

different time points, participants needed to leave their last four digits of university ID number and their university email address. In the invitation email/phone call, participants were informed that the study was about Chinese international students' experiences in the United States, and that the study would take about 15-20 minutes to complete at each time point. No monetary reward was given to participants, but their time and effort were greatly appreciated by the principle investigator.

## CHAPTER 4: RESULTS

**Preliminary Statistics**

First, six t-tests were conducted to examine if there were any significant differences in the six measured variables between those who completed Time 1 only and those who completed both Time 1 and Time 2 surveys. These six Time 1 variables were general social connectedness, acculturation, enculturation, life satisfaction, positive affect, and negative affect. A  $p$  value of  $.05/6 = .008$  was used with the consideration of Bonferroni adjustment. No significant differences were found,  $t$  values ranged from  $t(409) = -0.43, p = .67$  to  $t(410) = 1.22, p = .23$ . These results indicated that no biases can be concluded between those who only participated at Time 1 and those who participated in both time points.

Second, after a data set with 213 cases was finalized for preliminary analysis, Bonferroni adjustment was used for a series of independent t-tests to examine whether there were differences in all 11 measured variables due to the sex differences (i.e., male vs. female) and the academic status (i.e., undergraduate vs. graduate). The 11 measured variables are the six variables mentioned above and another five Time 2 variables: Mainstream SC, Ethnic SC, life satisfaction, positive affect, and negative affect. For sex, only positive affect at Time 1 showed a significant difference,  $t(2) = 3.25, p = .001$ . The result indicated that male ( $M = 2.84, SD = 0.58$ ) reported higher positive affect at Time 1 than female ( $M = 2.57, SD = 0.63$ ) participants. A Cohen's  $d$  of 0.45 indicated a small effect size ( $r = .22$ ) (Cohen, 1988). In addition, for academic status, two variables showed significant differences. One is that undergraduate ( $M = 2.11, SD = 0.71$ ) reported a significantly higher negative affect at Time 1 than graduate ( $M = 1.78, SD = 0.57$ ) students,  $t(2) = 3.73, p < .001$ . A Cohen's  $d$  of 0.51 indicated a moderate effect size ( $r = .25$ ). The other is that undergraduate ( $M = 2.14, SD =$

0.76) reported a significantly higher negative affect at Time 2 than graduate ( $M = 1.81$ ,  $SD = 0.68$ ) students,  $t(2) = 3.33$ ,  $p = .001$ . A Cohen's  $d$  of 0.46 indicated a small effect size ( $r = .22$ ).

Third, the chi-square test was used to examine whether the sample ( $N = 213$ ) was representative of the population of Chinese international students at the large Midwestern university ( $N = 1815$ ) with respect to sex and academic status. A non-significant chi-square result,  $\chi^2(1, N = 212) = 0.03$ ,  $p = .86$ , indicated that the proportion of male and female students in the sample did not differ significantly from the expected proportion of students. A significant chi-square analysis result,  $\chi^2(1, N = 212) = 23.43$ ,  $p < .001$ , indicated that the proportion of graduate students (50%) in the sample was significantly greater than the proportion of graduate students in the original population (34%).

Means, standard deviations, and zero-order correlations among the 11 measured variables were shown in Table 1. As it indicates, the sample appeared to be more enculturated ( $M = 6.38$ ,  $SD = 0.96$ ) than being acculturated ( $M = 5.31$ ,  $SD = 1.01$ ). A Cohen's  $d$  of 1.09 indicated a large effect size ( $r = .48$ ). With respect to correlations, first, acculturation was weakly correlated with enculturation ( $r = .14$ ,  $p = .04$ ). While acculturation was significantly and positively correlated with Mainstream SC ( $r = .35$ ,  $p < .001$ ), acculturation was not significantly correlated with Ethnic SC ( $r = .06$ ,  $p = .37$ ). Similarly, while enculturation was positively and moderately related to Ethnic SC ( $r = .45$ ,  $p < .001$ ), enculturation was not significantly correlated with Mainstream SC ( $r = -.05$ ,  $p = .50$ ). Finally, Mainstream SC was moderately associated with life satisfaction ( $r = .30$ ,  $p < .001$ ) and positive affect ( $r = .32$ ,  $p < .001$ ) at Time 2, but was not significantly associated with negative affect ( $r = .00$ ,  $p = 1.00$ ). Ethnic SC had weak correlations with life satisfaction ( $r$

= .20,  $p = .01$ ), positive affect ( $r = .15$ ,  $p = .03$ ), and negative affect ( $r = -.24$ ,  $p = .001$ ) at Time 2. Conceptually, as described earlier, general social connectedness would be as a covariate to control for because it would associate with Mainstream and Ethnic SC at Time 2 as well as three indices of subjective well-being at Time 2. Statistically, the significant correlations seem to support this conceptual argument. Specifically, general social connectedness at Time 1 was significantly related to Time 2 Mainstream SC, Ethnic SC, life satisfaction and negative affect.

### **Path Analysis**

The statistical package of the Mplus Version 6.1 program (Muthen & Muthen, 2010) was used to test the path model through the maximum-likelihood method. A test of multivariate normality suggested that the data set significantly departed from normality,  $\chi^2$  (2,  $N = 213$ ) = 89.26,  $p < .001$ . To adjust the impact of the nonnormality on the data, the corrected/scaled chi squared statistic was reported (Satorra & Bentler, 1988). Furthermore, we used three fit indices to evaluate the goodness-of-fit of the models (Hu & Bentler, 1999). The first one was the comparative fit index (CFI), with a value of .95 or higher indicating that the model is a good fit to the data. The second one was the root-mean-square-error of approximation (RMSEA), with a value of .06 or less indicating an adequate fit. The third one was the standardized root-mean-square residual (SRMR), with a value of .08 or less suggesting the model is a proper fit to the data.

In addition, based on the recommendation of Holmbeck (1997), I then compared the fully- and partially-mediated model in order to determine the best model (see Table 2). The hypothesized model was a partially-mediated model, in which six direct paths from acculturation/enculturation to life satisfaction, positive affect, and negative affect at Time 2



were not constrained to zero. The alternative model was a fully mediated model with six paths constrained to zero. In Table 2, it showed that when the fully mediated model was compared to the partially mediated model, there was a significant chi-square difference,  $\Delta\chi^2(6, N = 213) = 13.05, p = .04$ . This result indicated that the six direct paths contributed significantly to the model and needed to be kept in the model. Thus, the proposed hypothesized model (i.e., partially mediated model, see Figure 2) was a better fit model,  $\chi^2(6, N = 213) = 10.31$ , scaled  $\chi^2(6, N = 213) = 9.82$ , CFI = .99, RMSEA = .06, and SRMR = .02. Therefore, we selected the partially-mediated model (Figure 2) as the final best model and used it to test the significance of the indirect or mediation effects.

### **Testing the Significance of the Indirect Effects**

Bootstrap was used to test the significance of indirect effects (Mallinckrodt, Abraham, Wei, & Russell, 2006) for the final mediated path model (see Figure 2). We requested 1,000 bootstrap samples in the Mplus program to estimate 12 mean indirect effects (e.g., acculturation Time 1 → Mainstream SC at Time 2 → life satisfaction at Time 2; see Table 3 for all 12 indirect effects). MacKinnon, Lockwood, and Williams (2004) reported that the bootstrap confidence interval (CI) adjusted for bias correction showed the highest levels of statistical power. Therefore, a 95% bias-corrected bootstrap confidence interval (CI) for the indirect effects was reported in this study. If the 95% CI does not include zero, the indirect effect is considered significant at the .05 level.

Results in Table 3 show that 95% CI for five out of 12 indirect effects did not include zero. Indirect effect 1 (acculturation Time 1 → Mainstream SC Time 2 → life satisfaction Time 2) and 3 (acculturation Time 1 → Mainstream SC Time 2 → positive affect Time 2) were statistically significant, providing partial support for the first set of hypotheses that

Mainstream SC at Time 2 would mediate between acculturation at Time 1 and SWB at Time 2 (only for life satisfaction and positive affect, but not for negative affect). However, indirect effect 2 (enculturation Time 1 → Mainstream SC Time 2 → life satisfaction Time 2) and 4 (enculturation Time 1 → Mainstream SC Time 2 → positive affect Time 2) were also statistically significant, which was a surprising result. It was not hypothesized that Mainstream SC at Time 2 would mediate between enculturation at Time 1 and any components of SWB at Time 2. However, in this case, Mainstream SC at Time 2 did mediate the associations between enculturation at Time 1 and life satisfaction and positive affect at Time 2.

Furthermore, only indirect effect 12 (enculturation Time 1 → Ethnic SC Time 2 → negative affect Time 2) was statistically significant in assessing the mediation effect of Ethnic SC at Time 2. This result partially supported the second set of hypotheses. That is, Ethnic SC at Time 2 only mediated the associations between enculturation at Time 1 and negative affect at Time 2 (but not life satisfaction and positive affect at Time 2). Finally, no significant indirect effects of Ethnic SC were found for the associations between acculturation at Time 1 and all components of SWB at Time 2, indicating support for the hypothesis that Ethnic SC at Time 2 would not mediate the association between acculturation at Time 1 and SWB at Time 2.

## CHAPTER 5: DISCUSSION

The purpose of the present study was to examine Chinese international students' Mainstream SC and Ethnic SC as mediators in the association between acculturation/enculturation and subjective well-being (SWB). The first set of the hypotheses was partially supported. Mainstream SC at Time 2 did partially mediate the association between acculturation at Time 1 and life satisfaction and positive affect at Time 2, but not for negative affect at Time 2, after controlling for general social connectedness at Time 1 and subjective well-being (SWB) at Time 1 (i.e., life satisfaction, positive affect, and negative affect). In Yoon, Lee, and Goh (2008)'s cross-sectional study for Korean immigrants, they reported that there was a tendency that Mainstream SC partially mediated the relationship between acculturation and SWB (only measuring life satisfaction and positive affect, but not negative affect). However, this mediating effect was close but not statistically significant (i.e.,  $p = .054$ ) in their study. The present results provided a clear evidence to advance this line of research by controlling for general social connectedness and the initial level of SWB; it demonstrated that acculturation contributes to later building mainstream SC, then predicting two aspects of future SWB (i.e., life satisfaction and positive affect).

The second set of hypotheses was also partially supported. Ethnic SC at Time 2 did partially mediate the association between enculturation (but not acculturation) at Time 1 and negative affect at Time 2 (but not for life satisfaction and positive affect at Time 2), after controlling for general social connectedness and SWB at Time 1. This finding was inconsistent with that of Yoon et al.'s (2008) study. They found that Ethnic SC fully mediated the association between enculturation and SWB, but SWB was only defined by life satisfaction and positive affect. In this study, the result suggested that those who were

enculturated are likely to build later ethnic SC, and that helped them only regulate future negative affect (but not promote their future life satisfaction and positive affect).

We also found that Mainstream SC at Time 2 partially mediated the association between enculturation at Time 1 and SWB (only for life satisfaction and positive affect) at Time 2, which was out of my expectation. This path was not found in Yoon et al.'s (2008) Korean immigrants community sample. However, in Yoon, Hacker, Hewitt, Abrams, and Cleary's (2012) study, acculturation was associated with SWB via connections to both communities. Our study specified that, for those who identified themselves as being more enculturated, they would feel less connected to the American mainstream society, thus experiencing less life satisfaction and positive affect later on.

These results altogether inform readers that (a) those who were more acculturated were more likely to have more future life satisfaction and positive affect through feeling close to Americans; (b) those who were more enculturated were less likely to report more future life satisfaction and positive affect through feeling close to Americans; and (c) those who were more enculturated were more likely to report less future negative affect through feeling close to other Chinese.

The present study contributed to this line of research on acculturation/enculturation in several important ways. First, all previous studies on acculturation and SWB have been only using the cross-sectional design, which failed to conclude causality among variables. As stated by Smith and Khawaja (2011), there is a dearth of longitudinal studies in examining the effect of variables on international students' adaptation over time. Zhang and Goodson (2011) also called for more longitudinal studies to examine the potential mediators in cultural adaptation process of one specific international student group. The present study was able to

fill these gaps and allowed closer and more accurate observation of mediation effects in the acculturation process: students who were acculturated or enculturated at Time 1 revealed differences in SWB at Time 2 through Mainstream SC and Ethnic SC at Time 2. Thus, the longitudinal design of the study contributed to the literature by predicting future SWB and by determining the causal associations among the measured variables.

Second, previous research on acculturation/enculturation and SWB has been focusing on the overall effect on SWB rather than on its three components (i.e., life satisfaction, positive affect, and negative affect) (e.g., Yoon et al., 2012). Even though SWB as a latent variable can be predicted using the three variables, it is still necessary to examine if all three are affected equally and consistently by the two mediators (i.e., Mainstream SC and Ethnic SC). The present study revealed how acculturation/enculturation affects different components of SWB through the two mediators: Mainstream SC mostly contributed to greater life satisfaction and greater positive affect, while Ethnic SC mainly contributed to fewer negative affect. One possible explanation is that the mainstream society is the environment that Chinese international students have to face every day; as their identification with the host country becomes stronger over time (Cemalcila & Falbo, 2008), feeling close to the mainstream society promotes their sense of satisfaction and positive affect. However, most of Chinese international students come into another country highly enculturated and have stable social support from their ethnic community (either in the host country or in their country of origin) (Cemalcila & Falbo, 2008). Having such a stable source of support helps reduce their negative feelings in their daily life. Thus, the present study seems to differentiate the various mechanisms for acculturation/enculturation to have effect on SWB.

This finding could possibly help us comprehend the various contradictory conclusions from previous studies on acculturation/enculturation and psychological outcomes. For example, Jung, Hecht, and Wadsworth (2007) reported that the level of acculturation (i.e., identification with host culture) did not significantly predict depressive mood. In another study, Ward and Rana-Deuba (2000) found that only strong identification with home culture, but not strong identification with the host culture, was negatively related to negative mood states. Zheng, Sang, and Wang (2004) found that both strong identification with host and home cultures were positively related to one's subjective well-being. The seemingly inconsistent findings can be reconciled by applying into our model. Individual who identified highly with the host culture can achieve more satisfaction with life and positive affect if they had a strong sense of Mainstream SC. Conversely, individual who identified strongly with their home culture can reduce their negative affect if they had a strong sense of Ethnic SC. Because none of these studies examined the mediation effects of Mainstream SC and Ethnic SC and all used different types of measures to indicate psychological outcome, their results appeared to be inconsistent while they could potentially be congruent.

Another interpretation from the different effects of acculturation/enculturation on three components of SWB is that, social connectedness with Americans and with other Chinese can both be important tools in terms of improving one's SWB, but they take effect in two different ways. Mainstream SC may mostly contribute to SWB by promoting one's life satisfaction and positive affect, whereas Ethnic SC may affect SWB by regulating one's negative affect in their daily activities. This is similar to the findings in the discrimination literature. For example, Wei, Wang, Heppner, and Du (2012) found a moderation effect for Ethnic SC on the racial discrimination (i.e., a negative-affect-inducing experience) and PTSD

symptoms experienced by a group of Chinese international students. However, Mainstream SC did not have a moderation effect on the same association. Taken these two studies, it might be possible that support from ethnic community would be more helpful to regulate negative mental health outcomes, but support from the mainstream would be more helpful to promote positive mental health outcomes. However, this speculation needs future studies to confirm or disconfirm.

A third contribution of our study is that our results provided an empirical evidence to Berry's (1997) theoretical framework of acculturation. As Berry proposed, individuals in the acculturation process, when first experience cultural differences, would need to use various coping strategies, such as establishing Mainstream SC and/or Ethnic SC, in order to overcome the changes in their life events. When these coping strategies are effective, individuals would feel more satisfied with life and have more positive affect and less negative affect in the adjustment. When the coping strategies are not sufficient to meet individuals' needs (e.g., an enculturated individual only establishing social connection in the mainstream society), individuals would experience less of these positive outcomes manifested as SWB. Furthermore, Zhang and Goodson (2011) encouraged researchers to examine the mediation effects in the area of international students' adjustment and adaptation. Therefore, our study not only partially supported Berry's (1997) framework and answered a call from Zhang and Goodson (2011), but also depicted how Mainstream SC and Ethnic SC function as mediators in an international student's journey of cultural adaptation.

### **Limitations and Suggestions for Future Research**

Several limitations and suggestions for future researchers need to be addressed in understanding the results. First, the results require cautious interpretation considering the

composition of undergraduate and graduate students in the current sample being not representative of those of the population. Future research will benefit more from a larger sample size to improve the sample's representativeness of the population.

Second, many participants identified themselves being more enculturated rather than being more acculturated, which might be related to their relatively short length of stay in U.S. (about 48 percent being two year or less) . This characteristic of the sample might not allow the results to accurately depict more acculturated students' experience. However, all participants' length of stay ranged from one month to about eight years, suggesting one potential strength of this dataset being containing a wide range of international students ( $M = 24.79$  months,  $SD = 18.14$ ). Future researchers can consider collecting data from a specific group of students who have been staying in the U.S. for a set number of years, such as first year international student or students who have been in U.S. for more than four years, in order to give a closer look to the experiences of more acculturated and/or enculturated individuals.

Third, the results of the study can only be applied to other higher education institutions located in the Midwest with predominantly White population. Furthermore, it only applies to the Chinese international students from Mainland China, for this population is the interest of the study. Future research can generalize the findings to other regions of the United States, or to other populations, such as international students from other countries other than Mainland China or other ethnic minorities in the United States such as Mexican immigrants.

Fourth, the measures of three components of subjective well-being are self-report in nature. Therefore, it is unclear whether the measures accurately reflect participants' actual



SWB level. For example, individuals could report high satisfaction with life because of their unhealthy life style (e.g., substance abuse); even though this type of life style could be perceived as a contributing factor of SWB by participants, it is contradictory to the sustainable satisfaction with life that we intended to measure (Yoon & Lee, 2010). Future researchers can think of other objective ways to validate participants' self-report of their SWB, develop new measures that can avoid participants' inaccurate interpretation of their well-being, or examine other positive outcomes such as psychological well-being (e.g., self-acceptance, resilience, positive relations with others, purpose in life, etc.) (Keyes, Shmotkin, & Ryff, 2002).

### **Implications for Clinicians and Educators**

Despite the limitations, the present study also provides several clinical implications for counselors who work closely with this population. First, having an understanding about these students' acculturation and enculturation levels might allow counselors to conceptualize their presenting concerns from a more appropriate approach and come up with relevant treatment plans. Specifically, for acculturated Chinese international students who express a lack of life satisfaction and positive affect, it could be beneficial for counselors to first assess whether their needs to connect with Americans are met. If students express the need to seek/enhance that connection, counselors can attempt to discuss possible channels, such as participating in campus organizations' activities, making friends with Americans in class, and so forth. Similarly, for those who express negative affect being present and identify themselves as enculturated, counselors could help clients evaluate if they have been getting enough support and connection via the relationships with other Chinese international students or friends, families in their home country. If not, counselors can encourage clients to

discuss ways to seek support from their ethnic communities, such as making international phone calls to home, participating international student events, celebrating ethnic holidays, and so forth.

Second, counselors can be informed from the findings of the present study that Mainstream SC and Ethnic SC mediate the association between their clients' acculturation orientations and their SWB in different ways. Counselors might want to identify which element of subjective well-being is missing, and what might be closely related to that outcome. For example, when students report lower SWB, one can assess whether they are reporting a lack of positive affect and satisfaction with life, or they are experiencing more negative affect. After identifying the source of the presenting concerns, counselors can consider which mediation path could potentially take effect for these clients. Eventually, counselors could try to promote these students' SWB by encouraging them to build connections with people from the culture that they desire to have connection with.

Educators from the high education institutions can also benefit from the findings of the study in their work with this population. Knowing the number of Chinese international students' enrollment has been increasing, faculty and staff in U.S. universities should be more aware of these students' needs for connections in both American society and their ethnic community to help them adjust on campus. For example, college professors can be encouraged to break the ice for these students in their interaction with other American students by initiating group activities in class, introducing American cultural background knowledge while teaching, and being interested in learning about Chinese culture when directly interacting with them. Furthermore, staff from offices on campus such as International Student Office can create more campus opportunities for these Chinese

international students learn about the U.S. culture as well as enhancing their ties with their ethnic community members. Staff members can also work directly with these students and help them establish a sense of connection, as well as introducing resources on campus and encouraging them to utilize the services to help them adjust.

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Table 1.

*Intercorrelations and Descriptive Statistics for Measured Variables*

Variable	<i>M</i>	<i>SD</i>	Possible Range	Sample Range	2	3	4	5	6	7	8	9	10	11
1. SCSt1	2.74	0.99	1-6	1-6	-.40***	-.23**	.35***	-.21**	-.23**	-.30***	-.34***	-.20**	-.12	.25***
2. SWLSt1	3.84	1.29	1-7	1-6.6	---	.28***	-.22**	.08	.17*	.25***	.23**	.63***	.19**	-.27***
3. PAST1	2.73	0.61	1-5	1.3-3.9	---	---	.11	.19**	.13	.25***	.17*	.22***	.32***	-.03
4. NAST1	1.94	.66	1-5	1-4	---	---	---	.03	-.12	-.08	-.18**	-.13	.05	.49***
5. ACCt1	5.31	1.01	1-9	1.5-8.3	---	---	---	---	.14*	.35***	.06	-.01	.01	.04
6. ENCt1	6.38	0.96	1-9	3.6-9	---	---	---	---	---	-.05	.45***	.12	.16*	-.04
7. M_SCt2	3.93	1.12	1-7	1-7	---	---	---	---	---	---	.05	.30***	.32***	.00
8. E_SCt2	5.02	1.12	1-7	2-7	---	---	---	---	---	---	---	.19**	.15*	-.24**
9. SWLSt2	3.89	1.25	1-7	1-6.8	---	---	---	---	---	---	---	---	.36***	-.23**
10. PAST2	2.68	0.64	1-5	1-4.2	---	---	---	---	---	---	---	---	---	.17*
11. NAST2	1.97	0.74	1-5	1-4.6	---	---	---	---	---	---	---	---	---	---

*Note.* *N* = 213. t1 = Time 1; t2 = Time 2; SCS = general social connectedness; SWLS = life satisfaction; PA = positive affect; NA = negative affect; ACC = acculturation; ENC = enculturation; M\_SC = mainstream social connectedness (Mainstream SC); E\_SC = ethnic social connectedness (Ethnic SC). \* *p* < .05, \*\* *p* < .01, \*\*\* *p* < .001.

Table 2.

*Comparisons between partial mediation model and full mediation model*

Model	$\chi^2$	Scaled $\chi^2$	<i>df</i>	CFI	RMSEA	CI for RMSEA	SRMR	$\Delta\chi^2$ between two models
Partially mediated model	10.31	9.82	6	.99	0.06	0.00, 0.12	0.02	13.05 (6)
Fully mediated model	22.80	22.72	12	.97	0.07	0.02, 0.11	0.03	<i>p</i> = .04

*Note.* *N* = 213. CFI = comparative fit index; RMSEA = root-mean-square-error of approximation; CI = confidence interval; SRMR = standardized root-mean-square residual.

Table 3

*Bootstrap Analysis of Magnitude and Statistical Significance of Indirect Effects*

	Indirect Effect		$\beta$ (Standardized Path Coefficient and Product)	Mean Indirect Effect (b) <sup>a</sup>	SE of Mean <sup>a</sup>	95% CI of bootstrap with bias correction for Mean Indirect Effect (lower, upper)
1. Acculturation t1	Mainstream SC t2	Life Satisfaction t2	$(.32) \times (.21) = 0.067$	0.079	0.030	0.031, 0.147*
2. Enculturation t1	Mainstream SC t2	Life Satisfaction t2	$(-.20) \times (.21) = -0.042$	-0.050	0.024	-0.109, -0.015*
3. Acculturation t1	Mainstream SC t2	Positive Affect t2	$(.32) \times (.33) = .106$	0.065	0.022	0.028, 0.115*
4. Enculturation t1	Mainstream SC t2	Positive Affect t2	$(-.20) \times (.33) = -.066$	-0.041	0.017	-0.087, -0.012*
5. Acculturation t1	Mainstream SC t2	Negative Affect t2	$(.32) \times (.05) = 0.016$	0.012	0.015	-0.014, 0.049
6. Enculturation t1	Mainstream SC t2	Negative Affect t2	$(-.20) \times (.05) = -.010$	-0.008	0.010	-0.033, 0.009
7. Acculturation t1	Ethnic SC t2	Life Satisfaction t2	$(-.10) \times (.07) = -.007$	-0.008	0.011	-0.047, 0.004
8. Enculturation t1	Ethnic SC t2	Life Satisfaction t2	$(.35) \times (.07) = .025$	0.028	0.030	-0.024, 0.092
9. Acculturation t1	Mainstream SC t2	Positive Affect t2	$(-.10) \times (.05) = -.005$	-0.003	0.006	-0.027, 0.003
10. Enculturation t1	Ethnic SC t2	Positive Affect t2	$(.35) \times (.05) = .018$	0.012	0.017	-0.018, 0.049
11. Acculturation t1	Ethnic SC t2	Negative Affect t2	$(-.10) \times (-.17) = .017$	0.011	0.012	-0.004, 0.046
12. Enculturation t1	Ethnic SC t2	Negative Affect t2	$(.35) \times (-.17) = -.060$	-0.042	0.026	-0.098, -0.002*

*Note.*  $N = 213$ . t1 = Time 1; t2 = Time 2; Mainstream SC and Ethnic SC = Mainstream social connectedness and Ethnic social connectedness; CI = Confidence Interval; \* 95% Confidence Interval does not include zero and therefore is significant at  $p < .05$ .

<sup>a</sup>These values are based on the unstandardized path coefficients.

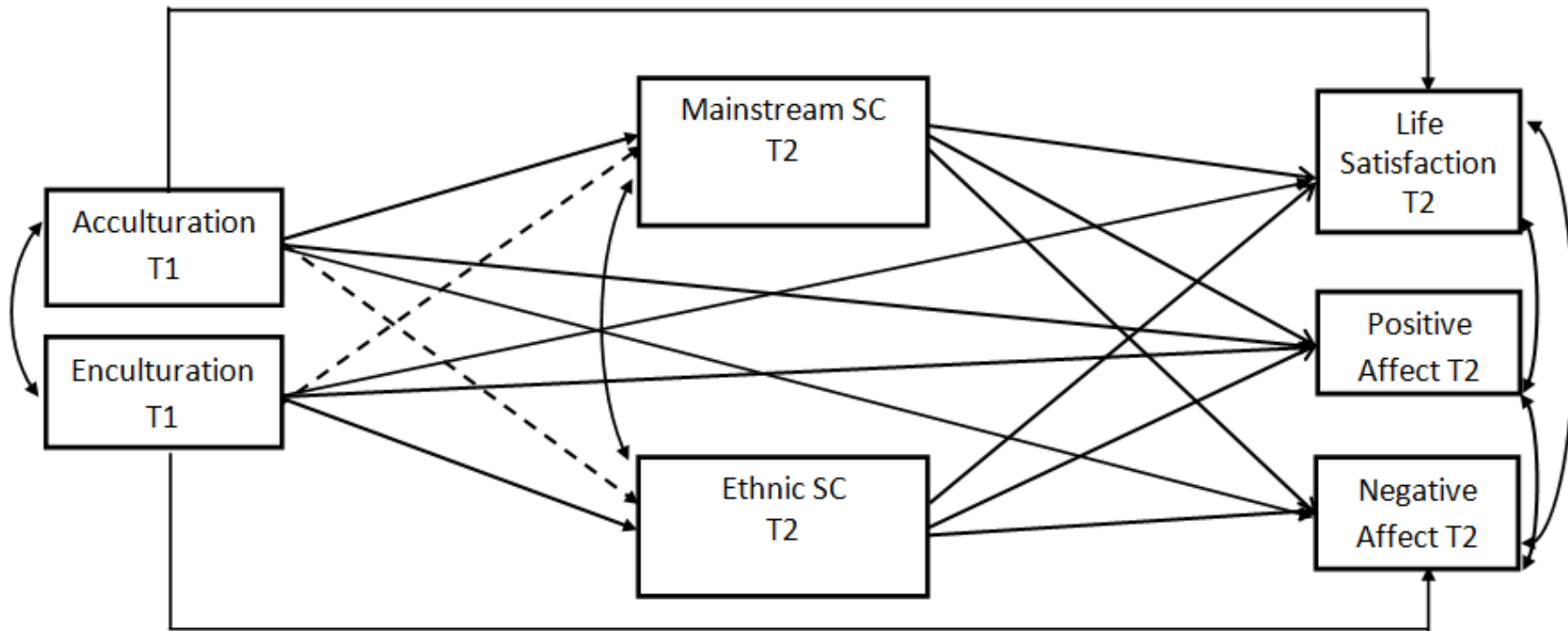


Figure 1. The Hypothetical Partially Mediated Model

Note. General social connectedness at Time 1, life satisfaction at Time 1, positive affect at Time 1, and negative affect at Time 1 were controlled for but not included in the model for demonstration clarity.

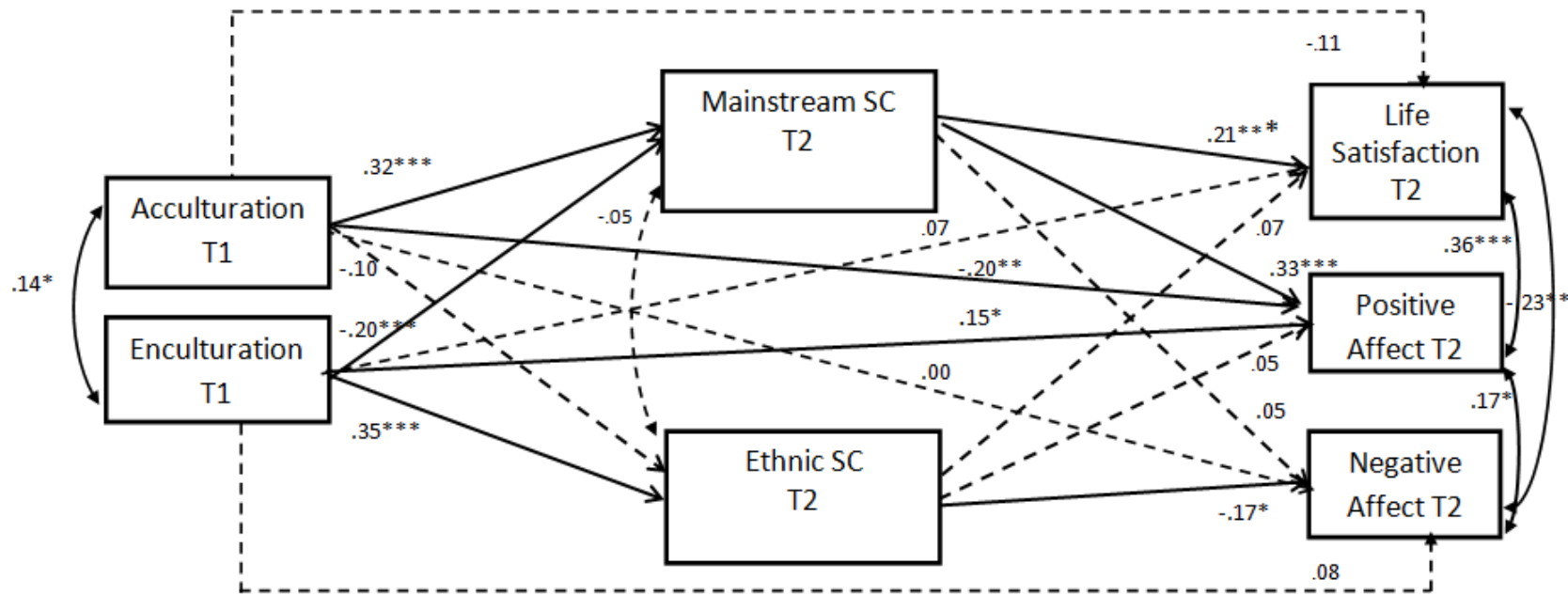


Figure 2. The Final Mediated Model

Note. General social connectedness at Time 1, life satisfaction at Time 1, positive affect at Time 1, and negative affect at Time 1 were controlled for but not included in the model for demonstration clarity. A dashed line indicates a non-significant path, and a solid line indicates a significant path.

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