

ABSTRACT

Title of Dissertation: ACCULTURATION AS CONGRUENCE-DISCREPANCY BETWEEN FRAMES OF REFERENCE: POLYNOMIAL REGRESSION AND RESPONSE SURFACE ANALYSIS

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The primary aim of this study was to apply the Self-Discrepancy Theory (Higgins, 1987) to the examination of acculturation orientations for Asian/Asian American populations in the United States. This theoretical application defines one's acculturation orientation as cognitive representations of cultural participation and value adoption on actual, ideal and normative planes. *Actual* acculturation is an individual's perception of their current cultural orientation; *Ideal* acculturation is the cultural orientation someone ideally would like to have; *Normative* acculturation is the cultural orientation that one believes one should have based on expectations of mainstream society and one's ethnic community. I further postulated that the

discrepancy between actual/ideal and actual/normative acculturation orientations would predict psychological outcomes including depressive symptoms, life satisfaction and belongingness. A 16-item scale, the Measure of Ideal and Normative Acculturation (MINA) was developed to measure acculturation on ideal, actual and normative planes. Polynomial regression and response surface analysis was used to comprehensively examine the relationship between acculturation orientation congruence-discrepancy and psychological outcomes. The main findings suggest that a) discrepancy between acculturation planes was prevalent among participants; c) Under conditions of congruence, higher ethnic culture orientation predicted lower depressive symptoms and higher belongingness; d) Discrepancy between actual and ideal ethnic culture orientations predicted negative outcomes including depressive symptoms, lower life satisfaction and lower belongingness; e) Discrepancy between actual U.S. orientation and perceived normative expectation by one's ethnic community predicted depressive symptoms, whereas congruence predicted belongingness; f) Greater discrepancy between ideal/actual U.S. culture orientations was associated with both positive (higher belongingness) and negative (higher depressive symptoms) psychological outcomes. Implications and limitations were discussed.

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FRAMES OF REFERENCE:
POLYNOMIAL REGRESSION AND RESPONSE SURFACE ANALYSIS

by

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Table of Contents

Acknowledgements	ii
Table of Contents	iii
List of Tables	v
List of Figures	vi
Chapter 1: Introduction	1
<i>Acculturation as a Bilinear and Multidimensional Construct</i>	2
<i>Acculturation as a Social-Cognitive Evaluative Process: Self-Discrepancy Theory</i>	4
<i>Theory of Relative and Interactive Acculturation</i>	6
Acculturation planes: ideal, actual, and normative	6
Congruence-discrepancy between acculturation planes	7
<i>Examining Congruence-Discrepancy Between Acculturation Planes</i>	8
<i>Present Study</i>	9
Chapter 2: Method	12
<i>Participants</i>	12
<i>Measures</i>	13
Measure of Ideal and Normative Acculturation (MINA)	13
Abbreviated Multidimensional Acculturation Scale (AMAS-ZABB)	14
Center for Epidemiologic Studies Depression Scale-Revised (CESDR-10)	15
Satisfaction with Life Scale (SWLS)	16
General Belongingness Scale (GBS)	17
<i>Procedures</i>	18
Chapter 3: Results	19
<i>Data Analysis Plan</i>	19
<i>Missing Data Handling</i>	20
<i>Initial Construct Validity Evidence of the MINA</i>	21
Acculturation on U.S. and ethnic culture orientations	21
Acculturation in public and private domains	21
Acculturation from actual, ideal and normative frames of reference	22
Criterion-related evidence	23
<i>Preliminary Analysis</i>	26
<i>Polynomial Regression and Response Surface Analysis</i>	27
Examining assumption of discrepancy	27
Evaluating fit of measurement models	28
Ideal and actual acculturation on ethnic culture orientation.	29
Mainstream-normative and actual acculturation on ethnic culture orientation	30
Ethnic-normative and actual acculturation on ethnic culture orientation	31
Summary of results on ethnic culture orientation	32
Ideal and actual acculturation on U.S. culture orientation	33

Mainstream-normative and actual acculturation on U.S. culture orientation	34
Ethnic-normative and actual acculturation on U.S. culture orientation	35
Summary of results on U.S. culture orientation	36
Chapter 4: Discussion	38
<i>Differentiating Acculturation Orientations on Actual, Ideal, and Normative Planes</i>	38
<i>Prevalence of Discrepancy Between Acculturation Orientations</i>	40
<i>Congruent and High Ethnic Culture Orientation Predicted Positive Outcomes</i>	43
<i>Congruence-Discrepancy on U.S. Culture Orientation: The Benefit and Cost of Fitting in</i>	46
<i>Limitations</i>	48
<i>Implications</i>	50
Appendix A: Measure of Ideal and Actual Acculturation	73
Appendix B: Abbreviated Multidimensional Acculturation Scale	75
Appendix C: Center for Epidemiologic Studies Depression Scale-Revised	77
Appendix D: Satisfaction with Life Scale	78
Appendix E: General Belongingness Scale	79
Appendix F: Demographic Questionnaire	80
Appendix G: Comprehensive Literature Review	82
<i>Acculturation: A Bilinear Multidimensional Construct</i>	82
<i>Assessment of Acculturation</i>	89
<i>The Process of Acculturation Beyond Static Outcomes: The Theory of Planned Behaviors</i>	91
<i>Acculturation on Ideal and Actual Planes</i>	93
<i>Acculturation on Ethnic and Mainstream Normative Planes</i>	95
<i>Congruence-Discrepancy between Acculturation Planes and Psychological Outcomes</i>	99
Bibliography	104

List of Tables

[Table 1.](#) Summary of Means and Standard Deviations for Acculturation Orientations and Intercorrelation with Depression, Subjective Satisfaction, and General Belongingness

[Table 2.](#) Percentage of Discrepancy Between Actual Acculturation Orientation and Ideal and Normative Acculturation Orientation for Ethnic Culture and U.S. Mainstream Culture

[Table 3.](#) Actual/Ideal Ethnic Culture Orientation Discrepancy as a Correlate of Depression, Subjective Satisfaction, and General Belongingness

[Table 4.](#) Actual/Mainstream-Normative Ethnic Culture Orientation Discrepancy as a Correlate of Depression, Subjective Satisfaction, and General Belongingness

[Table 5.](#) Actual/Ethnic-Normative Ethnic Culture Orientation Discrepancy as a Correlate of Depression, Subjective Satisfaction, and General Belongingness

[Table 6.](#) Actual/Ideal U.S. Mainstream Culture Orientation Discrepancy as a Correlate of Depression, Subjective Satisfaction, and General Belongingness

[Table 7.](#) Actual/Mainstream-Normative U.S. Mainstream Culture Orientation Discrepancy as a Correlate of Depression, Subjective Satisfaction, and General Belongingness

[Table 8.](#) Actual/Ethnic-Normative U.S. Mainstream Culture Orientation Discrepancy as a Correlate of Depression, Subjective Satisfaction, and General Belongingness

[Table 9.](#) Summary of Psychological Outcomes in Relation to Congruence-Discrepancy of Acculturation Orientations

List of Figures

[Figure 1.](#) Depressive symptoms (CESDR-10) as predicted by congruence-discrepancy of actual/ideal ethnic culture orientations

[Figure 2.](#) Subjective life (SWLS) satisfaction as predicted by congruence-discrepancy of actual/ideal ethnic culture orientations

[Figure 3.](#) General belongingness (GBS) as predicted by congruence-discrepancy of actual/ideal ethnic culture orientations

[Figure 4.](#) General belongingness (GBS) as predicted by congruence-discrepancy of actual/mainstream-normative ethnic culture orientations

[Figure 5.](#) Depressive symptoms (CESDR-10) as predicted by congruence-discrepancy of actual/ethnic-normative ethnic culture orientations

[Figure 6.](#) General belongingness (GBS) as predicted by congruence-discrepancy of actual/ethnic-normative ethnic culture orientations.

[Figure 7.](#) Depressive symptoms (CESDR-10) as predicted by congruence-discrepancy of actual/ideal U.S. culture orientations.

[Figure 8.](#) General belongingness (GBS) as predicted by congruence-discrepancy of actual/ideal U.S. culture orientations.

[Figure 9.](#) Subjective life satisfaction (SWLS) as predicted by congruence-discrepancy of actual/mainstream-normative U.S. culture orientations.

[Figure 10.](#) Depressive symptoms (CESDR-10) as predicted by congruence-discrepancy of actual/ethnic-normative U.S. culture orientations.

[Figure 11.](#) General belongingness (GBS) as predicted by congruence-discrepancy of actual/ethnic-normative U.S. culture orientations.

Chapter 1: Introduction

The frequency and extent of intercultural contact and interactions are increasing rapidly with technological advances, ease of travel, immigration, war, and economic globalization. With greater appreciation of how voluntary and involuntary, temporary and permanent intercultural transitions impact people's lives, the study of acculturation has received substantial attention in the psychological literature. At the individual level, the psychology of acculturation is defined as a process of cultural and psychological changes that involve various forms of mutual accommodation and longer-term adaptations (Berry, 1997; 2005). In culturally plural societies, acculturation continues long after initial contact where non-dominant ethnocultural communities negotiate maintaining features of their heritage cultures (Berry, 2005).

Acculturation plays an integral part in understanding the mental health needs of the Asian American communities (Kim, 2009). While there is considerable within-group cultural heterogeneity, Asian cultures overall tend to differ considerably from the U.S. mainstream culture, especially on the dimensions of power distance (Asian cultures more hierarchical) and individualism-collectivism (Asian cultures more collectivist; Smith, Dugan, Peterson, & Leung, 1998). Another important context that shapes an ethnic/racial group's experience is their unique sociopolitical and racial history. A salient racism experience Asian American populations face in the U.S. is perpetually prescribed foreign-born status, which insinuates that Asian Americans do not belong in the U.S. or cannot possibly be "real" Americans (Liang, Li, & Kim, 2004; Sue, Bucceri, Lin, Nadal, & Torino, 2007). These insidious racial

microaggressive experiences can further exacerbate the perceived differences between the mainstream U.S. culture and the Asian ethnic culture for Asian Americans. As a result, the perceived cultural distance may complicate the negotiation of bi-cultural experience for Asian Americans. In this study, I examined the psychological vulnerability associated with the congruence-discrepancy between acculturation orientations on ideal, actual and normative planes for Asian/Asian Americans.

Acculturation as a Bilinear and Multidimensional Construct

Decades of conceptual and empirical efforts have delineated acculturation orientation as a bilinear and multidimensional construct. The bilinear acculturation model (Berry, 1980, 1990) posits that migrating individuals and individuals in non-dominant ethnocultural groups employ different acculturation strategies in their daily encounters with respect to two major issues: heritage culture maintenance (the extent to which they prefer to maintain their heritage culture) and mainstream culture contact (the extent to which they prefer to participate in the mainstream culture). The typological approach further classifies people's acculturation strategies based on the combination of responses to heritage culture maintenance and mainstream culture contact: *integration* (Yes/Yes), *assimilation* (No/Yes), *separation* (Yes/No), and *marginalization* (No/No). The bilinear conceptualization has received substantial empirical support for its factor structure (Arends-Tóth & van de Vijver, 2007; Miller, 2010), but the typological operationalization has received conceptual and methodological critiques (Arends-Tóth, van de Vijver, & Portinga, 2006; Rudmin, 2003; Rudmin & Ahmadzadeh, 2001).

Recent research uncovered the variability of acculturation strategies across life domains, which adds dimensionality to the bilinear conceptualization. One way of classifying acculturation domains refers to the distinction between behaviors (e.g., language, social interactions and daily living habits) and values (belief systems and worldviews; Kim, Atkinson, & Yang, 1999; Miller, 2007, 2010; Miller et al., 2013; Yoon et al., 2011). Another conceptual classification distinguishes acculturation in public and private life domains. Arends-Toth and colleagues (2003, 2006) defined the public domain as outside of home and utilitarian activities that aim at participating in social life, and the private domain as at home and value-related matters. Similarly, Navas, Rojas, García and Pumares (2007) theorized that acculturation in the public domain, such as political, work and economic areas, includes the adoption of cultural elements in order to survive in the host society. Acculturation in the private domain (e.g., religious beliefs, ways of thinking), in contrast, involves symbolic representations of the culture. These two overlapping ways of classifying acculturation domains are based on distinctions both in terms of the privacy of location (i.e., behaviors at home versus behaviors outside of home) and the centrality of cultural elements (i.e., behaviors versus values).

Evidence overall suggests that many people choose to approach acculturation differently across life domains (Miller et al., 2013; Navas et al., 2007; Tsai, Ying, & Lee, 2000; Lee, Eunju, & Hsin-Tine Tina, 2006). For example, in a sample of African descent immigrants in Spain, Navas et al. (2007) found that immigrants often preferred *assimilation* in public domains such as work and consumer habits, and preferred *separation* for the private spheres of their culture (e.g., family relations,

religious beliefs, and ways of thinking). In this study, I used the cultural centrality conceptualization (Arends-Toth & Van de Vijver, 2006; Navas et al., 2007) to define public and private life domains: public acculturation is defined as the participation and involvement in a cultural group; private acculturation is defined as adopting values of a cultural group. Acculturation in the public domain is utilitarian in nature and is vital for survival in the host society, whereas acculturation in the private domain is about the essential core of a culture.

Acculturation as a Social-Cognitive Evaluative Process: Self-Discrepancy Theory

A significant amount of the quantitative acculturation literature has examined the psychological outcomes of acculturation by linking acculturation strategies with psychological distress and difficulties in everyday activities (e.g., Zhang & Goodson, 2011). The measurement of acculturation strategies is typically a mixture of preferences (e.g., “It is important to me to preserve my Vietnamese heritage,” Nguyen & Von Eye, 2002) and actual practices (e.g., “I often participate in my heritage cultural traditions,” Ryder, Alden, & Paulhus, 2000). The unclear conceptual differentiation between acculturation preferences and practices in measurement implies an assumption that acculturation related choices equal freely-pursued individual preferences (Navas et al., 2007). In contrast, personal narratives of cultural adjustment, acculturation, and identity development have shed light on an on-going reflective process of negotiation and compromise (Bhatia, 2008; Lu et al., 2019; Park-Taylor et al., 2008; Pyke & Dang, 2003).

It is clear that there is a need to advance the operationalization of acculturation strategies to better capture the psychological nuance of the reflective

and evaluative process. Self-Discrepancy Theory (SDT; Higgins, 1987) provides a conceptual roadmap for understanding how individuals negotiate goals, standards and expectations for themselves to reach a regulated sense of self. SDT posits that the perception of self is not a singular concept but consists of three types of cognitive representations. The *actual* self is the representation of the person someone currently is. The *ideal* self is the representation of the person someone would like to become. The *ought* self is the representation of who someone should or ought to become. It is further theorized that chronic discrepancies between self-states are associated with emotional distress. When one's perception of actual self does not match the ideal state they personally hope to attain (i.e., actual/ideal discrepancy), they may be vulnerable to disappointment and dissatisfaction (i.e., dejection). When one's perception of actual self does not match the state that some significant other considers they should fulfill (i.e., actual/ought discrepancy), they may be vulnerable to feelings of fear and threat (i.e., agitation). The self-state discrepancies consistently emerged as predictors of negative affect in college and clinical samples (Barnett, Moore, & Harp, 2017; Boldero, Moretti, Bell, & Francis, 2005; Higgins et al., 1986; Scott & O'Hara, 1993; Strauman, 1989; Strauman & Higgins, 1987, 1988), although the distinctive association with dejection and agitation has not been consistently supported (Ozgul, Heubeck, Ward, & Wilkinson, 2003; Phillips & Silvia, 2010; Tangney, Niedenthal, Covert, & Barlow, 1998).

Theory of Relative and Interactive Acculturation

Acculturation planes: ideal, actual, and normative

In this study, I applied SDT and proposed a theoretical extension to the current bilinear multidimensional model of acculturation. This conceptual extension, which I named the *Theory of Relative and Interactive Acculturation* (TRIA), distinguishes the cognitive representations of acculturation on ideal, actual, and normative planes. *Actual* acculturation is an individual's perception of their current cultural participation (public) and cultural adoption (private). *Ideal* acculturation is the cultural orientation someone ideally would like to have, and reflects one's hopes, aspirations or wishes for cultural participation and cultural adoption. Ideal acculturation can develop from anticipation and thus may exist prior to actual cross-cultural contact. *Normative* acculturation is the cultural orientation that one believes one should have based on expectations of important collectives.

Normative messages can come from someone's ethnic/racial community. For example, ethnic/racial socializing robustly predicts ethnic/racial minority youths' knowledge about their ethnic traditions and positive attitudes towards ethnocultural behaviors (for a review, see Hughes et al., 2006). *Separation* expectation held by ethnic peers positively predicted Muslim minority individuals' own acculturation strategy of *separation* and negatively predicted their endorsement of *integration* (Kunst & Sam, 2013). In addition to one's ethnic/racial community, the dominant group and mainstream society can communicate and enact normative messages about acculturation through interpersonal and structural ways. Studies conducted in culturally plural European countries indicate that acculturation preferences endorsed

by minority and dominant groups often do not match (Bourhis & Dayan, 2004; Kunst & Sam, 2013; Navas et al., 2007). Furthermore, dominant group members' ideologies of *assimilation* and *separation* have been found to predict their prejudicial beliefs and behaviors (Bourhis & Dayan, 2004; Zick, Wagner, Dick, & Petzel, 2001). Perceiving higher *assimilation* expectations by the dominant group predicted higher distress among Muslim minority groups in Germany, France, and the UK (Kunst & Sam, 2013). In this study, *ethnic-normative* acculturation represents individuals' perceptions of the cultural orientation that their ethnic/racial community expects them to have, whereas *mainstream-normative* acculturation represents individuals' perceptions of the cultural orientation that mainstream U.S. society expects them to have.

Congruence-discrepancy between acculturation planes

TRIA further postulates that the congruence-discrepancy between these frames of reference bear important psychological consequences. Specifically, the discrepancy between actual and ideal acculturation parallels the discrepancy between the one's sense of actual self and the ideal self. The discrepancy between actual and normative acculturation parallels the discrepancy between the actual self as viewed by oneself and the ought self as viewed by a significant other. Chronic acculturation discrepancies are theorized to predict negative emotional state and psychological vulnerability, such as sadness, dissatisfaction and disappointment. Because developing social connection and belongingness is an important process and outcome of acculturation (Viruell-Fuentes & Schulz, 2009; Yeh & Inose, 2003), one's sense of belongingness was an additional psychological outcome included in this study.

Examining Congruence-Discrepancy Between Acculturation Planes

Conventionally, congruence has been examined using difference scores by computing the algebraic, absolute, or squared difference between two measures as a single predictor (e.g., $x-y$) of outcomes. Despite their widespread use, difference scores are prone to major methodological problems including reduced score reliability, ambiguous conceptual meaning, and the reduction of a three-dimensional relation to two dimensions (Edwards, 2002). Polynomial regression and response surface analysis (PRRSA; Edwards, 2002; Shanock, Baran, Gentry, Pattison, & Heggestad, 2010) is an emerging statistical technique that allows researchers to comprehensively examine the extent to which combinations of two predictors relate to an outcome variable, especially when the discrepancy between the two predictors is a central interest.

PRRSA has been used to study discrepancies in organizational multisource feedback (e.g., Gentry, Ekelund, Hannum, & de Jung, 2007; Ostroff, Atwater, & Feinberg, 2004), disagreement in therapists' and clients' perceptions of their therapeutic relationship (Kivlighan, Kline, Gelso, & Hill, 2017; Marmarosh & Kivlighan, 2012), and pre- and post-tests of attitude changes (Keum, Hill, Kivlighan, & Lu, 2018). PRRSA has also been applied to SDT studies to examine body image dissatisfaction as a function of discrepancy between one's ideal and actual physical self-images (Cafri, van den Berg, & Brannick, 2010). For example, when boys' and girls' actual body shape was larger than their ideals, greater discrepancy predicted more depressive symptoms (Solomon-Krakus et al., 2017). Mähönen, Leinonen, and Jasinskaja-Lahti (2013) applied PRRSA to examine unmet expectations for diaspora immigrants from Russia to Finland. They found that for social domains such as

family, friendships and leisure, immigrants reported better life satisfaction and mood when their expectations were exceeded by actual experiences. In the current study, PRRSA was used to examine how actual/ideal and actual/normative acculturation discrepancies were related to psychological outcomes.

Present Study

In this study, I extended the bilinear multidimensional conceptualization of acculturation, and proposed that acculturation can be meaningfully differentiated on ideal, actual, and normative planes. First, I developed and validated a scale to measure acculturation on ideal, actual and normative planes: Measure of Ideal and Normative Acculturation (MINA). Next, I employed PRRSA to examine the ways in which the congruence-discrepancy between acculturation planes predicted psychological outcomes.

With regard to the development and initial validation of the MINA:

A1. I expected that acculturation in public and private domains would be related yet distinct constructs. Kim et al. (1999) found a small correlation ($r = .15$) between Asian values acculturation and Asian behavioral acculturation. In contrast, Zhang and Moradi (2013) found moderate to large correlations ($r_s = [.41, .69]$) between language-related behaviors, cultural group association and cultural knowledge for Asian Americans. The correlation between private and public acculturation as measured by the MINA might be higher because the items had similar stems. I thus used correlations below .70 as evidence for non-converging constructs (Carlson & Herdman, 2012).

A2. I expected that the bilinear acculturation structure would be supported. It is theorized that one's ethnic culture and dominant culture orientations would be independent, although evidence is mixed regarding whether these two acculturation orientations were oblique (Lee et al., 2006; Miller, 2007; Nguyen & Von Eye, 2002) or orthogonal (Obasi & Leong, 2010; Ryder et al., 2000; Ward & Rana-Deuba, 1999). Because the frequency format has been found to yield stronger inverse association than endorsement format (Kang, 2006), I expected a small to moderate negative association between U.S. mainstream culture orientation and ethnic culture orientation.

A3. I expected that acculturation on actual, ideal, and normative planes would be adequately differentiated. Self-states (e.g., ideal/own, ought/own, ought/other) in SDT research often had associations higher than .40 and as high as .80 (e.g., Barnett et al., 2017; Burch et al., 1999; Phillips & Silva, 2010). I used correlations below .70 as evidence for non-converging constructs (Carlson & Herdman, 2012).

A4. I expected that the MINA would demonstrate convergent evidence through correlations with an existing acculturation measure, the Abbreviated Multidimensional Acculturation Scale (AMAS-ZABB; Zea, Asner-Self, Birman, & Buki, 2003). Specifically, I expected actual ethnic culture acculturation to correlate the most strongly with the ethnic culture subscales in AMAS-ZABB, followed by ideal ethnic culture orientation. I expected normative ethnic culture acculturation to show no more than small association with the ethnic culture subscales in AMAS-ZABB. Similar hypotheses were made regarding acculturation on the mainstream U.S. culture orientation.

With regard to how the congruence-discrepancy between acculturation planes would relate to psychological outcomes, I expected that:

B1. Discrepancy between perceived ideal and actual acculturation reflected a lack of volitional control over acculturation related choices (Navas et al., 2005, 2007), and would relate to lower subjective life satisfaction, higher depression and lower belongingness. This hypothesis would be supported by a significant negative (positive) curvature along the line of discrepancy for positive (negative) psychological outcome variables.

B2. Discrepancy between perceived actual acculturation and normative acculturation reflected perceived unfulfilled duty and obligation (Higgins, 1987), and would be related to lower subjective life satisfaction, higher depression and lower belongingness. This hypothesis would be supported by a significant negative (positive) curvature along the line of discrepancy for positive (negative) outcome variables.

SDT exclusively focuses on psychological vulnerabilities when individuals experience internal conflict, but does not have predictions regarding how different levels of congruence may relate to emotional outcomes. As a result, the analyses regarding congruence (i.e., linear and curvature relations along the line of congruence) were exploratory.

Chapter 2: Method

Participants

A total of 674 participants who identified as Asian or Asian American currently residing in the U.S. consented to take the online survey. Due to online anonymity and the lack of supervision, online data tend to have higher rates of missingness and lower response rate (Cantrell & Lupinacci, 2007). 82 participants (12.2%) did not provide any data. 23 (3.4%) failed three of the five attention checking items (e.g., “Choose ‘strongly agree’ for this item.”) and were subsequently excluded. 131 participants (19.4%) provided over 50% of missing data, and were excluded from the analyses (See Missing Data Handling Section for details).

The final sample consisted of 438 participants whose age ranged from 18 to 52 years ($M = 22.5$, $SD = 5.1$). 270 (61.6%) identified as woman, 140 (32.0%) identified as men, and 5 identified as other (queer, transman, non-binary). 217 (49.5%) participants identified as East Asian, followed by South Asian (20.1%), Southeast Asian (19.9%), and Multiracial and multiethnic (9.6%). Participants reported diverse immigration background, including 249 (56.8%) U.S. citizens born in the U.S., 92 (21%) international, 60 (13.7%) naturalized U.S. citizens, 25 (5.7%) permanent residents, and 10 other statuses (e.g., U.S. citizen born overseas; adopted). 52.3% of the sample identified as second-generation, followed by 1.5-generation (20.3%), first-generation (18%), and third-generation (3.0%). The sample was predominantly heterosexual (77.6%), and the rest identified as bisexual (6.8%), questioning or uncertain (3.2%), gay (2.1%), asexual (1.4%), queer (1.4%), or lesbian (.7%). The sample predominantly consisted of students (70.1%), followed by full-time workers (11.4%) and part-time workers (10.0%).

Measures

Measure of Ideal and Normative Acculturation (MINA)

The MINA consists of 16 items, each corresponding with a unique domain (public vs. private) of cultural orientation (mainstream U.S. culture vs. ethnic culture) on one frame of reference (actual, ideal, ethnic-normative, or mainstream-normative; Appendix A). Participants were prompted to rate the degree to which they currently participated (i.e., public domain) and adopted values of (i.e., private domain) either the mainstream U.S. culture or their ethnic culture on a 7-point frequency scale ranging from 1 (*almost never*) to 7 (*almost always*). Participants were also asked to rate their ideal cultural orientation and the cultural orientation they were expected to have by mainstream society and their ethnic community using the same rating scale.

The MINA was developed based on the theoretical conceptualization of private and public domains of acculturation (Arends-Toth & Van de Vijver, 2003, 2006; Navas et al., 2007), existing acculturation measures (Berry & Sabatier, 2011; Ward & Kus, 2012), expert feedback, and pilot testing. Three acculturation scholars provided online expert review for the MINA. In addition, three counseling psychology doctoral students who specialized in Asian American psychology and racism research provided written feedback. Experts were provided with the definition of the main constructs (e.g., ideal acculturation) and at least four sample items for each construct. They ranked the face validity of the sample items and provided qualitative feedback. Items that received the highest average ratings were selected. Two experts and one doctoral students recommended giving specific examples in the stem to increase clarity and usability. Based on expert feedback, items were modified

and specific acculturation examples were added (e.g., interacting with people from my ethnic group, watching TV shows from my ethnic culture; Zhang & Moradi, 2013).

One expert reviewer suggested that participants may have difficulty rating the frequency of abstract concepts such as cultural participation, and recommended using Likert-type scales. In contrast, two doctoral reviewers recommended using frequency ratings. To compare the frequency and agreement rating formats, a pilot test was conducted. 15 Asian/Asian American identifying participants (11 East Asian, 2 Southeast Asian, 1 Native Hawaiian, 1 multiracial) were recruited to take both the frequency and agreement versions of the MINA. Frequency ratings overall yielded responses with lower means and greater standard deviation than agreement ratings, which suggested that frequency ratings showed less ceiling effect and yielded more variable responses. As a result, frequency ratings were employed in the MINA.

Abbreviated Multidimensional Acculturation Scale (AMAS-ZABB)

The AMAS-ZABB (Zea et al., 2003) is a 42-item bilinear multidimensional self-report acculturation measure with six subscales: English language, heritage culture language, U.S. identity, heritage culture identity, U.S. competence, and heritage culture competence (Appendix B). Participants were asked to respond to items using a four-point scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*) for the cultural identity subscales, and from 1 (*not at all*) to 4 (*extremely well*) for the language and cultural competence subscales. Although the initial development and validation samples were college students and community participants of Latinx descent, the AMAS-ZABB was developed with focus groups of diverse ethnic/racial

backgrounds and was intended for use with other ethnic racial groups undergoing acculturation (Zea et al., 2003).

The AMAS-ZABB was selected to provide convergent evidence for the MINA because it is one of the few multidimensional acculturation scales with a factor structure and subscale length that support subscale use. Initial EFA revealed a six-factor structure with expected strong primary factor loadings except for the U.S. competence items, which also cross-loaded on the English language factor (Zea et al., 2003). The AMAS-ZABB subscales correlated in theoretically consistent ways with length of residence in the U.S., nativity status, and ethnic identity (Zea et al., 2003). Subsequent studies using the AMAS-ZABB with Mexican Americans, Asian students, and Korean immigrants revealed high internal consistency estimates for the total scores of U.S. cultural orientation and heritage cultural orientation (Cronbach's α = [.90, .95]), Yoon, Jung, Lee, & Felix-Moora, 2012; Yoon, Lee, & Goh, 2008). Miyoshi, Asner-Self, Yanyan, and Koran (2017) validated the Japanese version using EFA in a sample of Japanese sojourners and immigrants in the U.S.. They found the theoretical six-factor simple structure using EFA except for item ten ("I feel that I am part of the U.S. American culture"). The internal consistency estimates in the current study were .94 and .95 for U.S. cultural orientation and heritage cultural orientation, respectively.

Center for Epidemiologic Studies Depression Scale-Revised (CESDR-10)

The CES-D was first developed in the 1970s to assess depressive symptomatology in community-based samples and epidemiological surveys (Radloff, 1977). The CES-D was modified into a 20-item version to better reflect the diagnostic

criteria of the DSM-IV (Eaton, Smoth, Ybara, Muntaner, & Tien, 2004), and was recently reduced to a 10-item version for efficiency (Haroz, Ybarra, & Eaton, 2014; Appendix C). Participants were asked to rate how often they had experienced the list of depressive symptoms in the last week or so using a 5-point scale (0 = *not at all or less than one day*, 1 = *one to two days*, 2 = *three to four days*, 3 = *five to seven days*, and 4 = *nearly every day for two weeks*). The CESDR-10 has demonstrated strong psychometric properties in two national adolescent samples (Haroz et al., 2014) and a diverse cohort of Hispanic/Latinx adults (González et al., 2017), where a unidimensional factor structure emerged with high internal consistency (Cronbach's $\alpha = [.80, .91]$) and theoretically consistent correlations with other measures of anxiety and depression. Measurement invariance was found across adolescent boys and girls (Haroz et al., 2014), and English and Spanish speaking responders (González et al., 2017). The CESDR-10 yielded reliable scores in the current study, Cronbach's $\alpha = .92$.

Satisfaction with Life Scale (SWLS)

The SWLS (Diener, Emmons, Larson, & Griffin, 1985) is a 5-item instrument designed to measure the global cognitive judgment of satisfaction with one's life (Appendix D). Participants responded on a seven-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The SWLS was initially developed and validated using two convenient college samples, where a one-factor structure emerged with theoretically consistent correlations with self-esteem, neuroticism, extraversion, and psychological symptomology (Diener et al., 1985). The SWLS has been subsequently validated, yielding high internal consistency estimates (95% Cronbach's $\alpha = [.77,$

.81], Vassar, 2008), adequate test-retest reliability up to 2 months ($r_s = [.64, .84]$, Pavot & Diener, 1993), and a unidimensional structure in diverse populations and different languages (Pavot & Diener, 1993, 2008). The SWLS yielded reliable scores in the current study, Cronbach's $\alpha = .88$.

General Belongingness Scale (GBS)

The GBS (Malone, Pillow, & Osman, 2012) is a 12-item scale designed to assess achieved global belongingness across various levels of specificity ranging from close friends and family to an overarching sense of belongingness. The GBS has two subscales: Acceptance/Inclusion and Rejection/Exclusion (Appendix E). Due to high inter-factor correlations, Malone et al. (2012) scored the GBS as a total score. The current study only used the Acceptance/Inclusion subscale, which consists of positively worded items (e.g., "When I am with other people, I feel included"). Participants responded to items using a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The GBS was developed using predominantly Hispanic and White college samples, and yielded scores with high internal consistency (Cronbach's $\alpha_s = [.92, .95]$). Convergent evidence was provided by high positive correlations with social connectedness and high negative correlations with loneliness. Discriminant evidence was provided by small correlations with need to belong and social reassurance. The GBS was found to predict life satisfaction, happiness and depression, which provided criterion-related evidence. The GBS yielded reliable scores in the current study, Cronbach's $\alpha = .92$.

Procedures

Participants were recruited in four ways to complete a 20- to 30-minute web-based survey. First, the Office of Registrar at a mid-Atlantic university randomly generated a list of 6000 enrolled Asian and Asian American undergraduate and graduate students for this research. Secondly, I posted advertisement on psychology professional listservs (e.g., Asian American Psychological Association listserv, American Psychological Association Division 17 listserv). Thirdly, several Asian American community and professional organizations were contacted to distribute my study (e.g., Asian American and Pacific Islander Research Coalition, National Japanese American Memorial Foundation). Lastly, directors of the Asian American Studies programs at universities across the nation were contacted to distribute the study link among their faculty and students. Data collection lasted four weeks in March and April of 2019.

To ensure that participants met the inclusion criteria (i.e., Asian/Asian American identifying adults currently residing in the U.S.), participants were prompted to validate their eligibility before they proceeded to read the consent page. After providing consent, participants first provided their racial and ethnic identification as an additional step of validation. To control for order effects, all questionnaires used in this study were randomized except for the demographic questions (Appendix F), which were the last part of the study. At the end of the survey, participants interested in compensation were directed to a separate survey to record their names and email addresses. Registered participants had a 1 in 10 chance to win a \$10 Amazon gift card.

Chapter 3: Results

Data Analysis Plan

Data analysis involved sequential steps performed in SPSS 20 and Mplus 6.12. First, data were screened for patterns of missing. Second, initial evidence of construct validity for the MINA was examined through bivariate correlation at the item level as well as path coefficients with the latent model of an existing acculturation measure, the AMAS-ZABB. Third, nine independent PRRSA models were run to examine the main hypotheses between acculturation orientation congruence-discrepancy and three outcome variables.

In PRRSA (Edwards, 2002; Shanock et al., 2010), a polynomial regression model is run ($z = b_0 + b_1x + b_2y + b_3x^2 + b_4xy + b_5y^2 + e$), and the relationship among predictors x and y , and the outcome z is represented using a three-dimensional response surface. Next, the regression coefficients from the regression model are transformed into four surface values that together summarize the relationship between x , y and z under the conditions of x - y congruence and discrepancy. To control for multicollinearity, predictors in this study were scale mean-centered.

Take actual acculturation (x) and ideal acculturation (y) on the ethnic culture orientation predicting depression (z) as an example ([Figure 1](#)). The line of perfect congruence is defined as $x = y$, and the line of discrepancy is defined as $x = -y$. On the x - y plane, the perpendicular lines of congruence and discrepancy intersect at $x = y = 0$, which corresponds with the value of the scale mean in this study. On the line of perfect congruence, all the dots represent individuals whose actual acculturation matched their ideal acculturation, with values on one side of the intersection point below the scale mean and values on the other side of the intersection point above the

scale mean. On the line of discrepancy, the dots on one side of the intersection point represent individuals whose actual acculturation is higher than their ideal acculturation (i.e., $x > y$), whereas the dots on the other side of the intersection point represent individuals whose actual acculturation is lower than their ideal acculturation (i.e., $x < y$). The shape of the surface directly above the line of congruence represents how depression relates to ethnic culture orientation when one's ideal and actual endorsement is congruent. Similarly, the shape of the surface directly above the line of discrepancy represents how depression relates to ethnic culture orientation when one's ideal and actual endorsement is discrepant. Four surface test coefficients describe the key features of the response surface: the slope along the line of congruence (a_1), the curvature along the line of congruence (a_2), the slope along the line of discrepancy (a_3), and the curvature along the line of discrepancy (a_4).

Missing Data Handling

Missing data were handled following recommended best practices (Schlomer, Bauman, & Card, 2010). Variables had missingness ranging from 16.5% to 23.3%, and seemed to be missing completely at random, Little's MCAR test = 51339.19, $df = 52902$, $p > .99$. Missing data were handled by using Full Information Maximum Likelihood (FIML) to estimate model parameters. Because the FIML estimation bias increases in presence of significant missing (Schlomer et al., 2010), 131 participants whose data had missingness of 50% or above were deleted from the analyses.

Initial Construct Validity Evidence of the MINA

Acculturation on U.S. and ethnic culture orientations

To examine whether the MINA operationalized a bilinear conceptualization of acculturation, bivariate correlations between pairs of corresponding MINA items were calculated. Eight pairs of MINA items asked participants to rate acculturation on either the ethnic culture orientation or the mainstream U.S. culture orientation. For example, the item “how much do you participate in your ethnic culture” parallels the item “how much do you participate in the mainstream U.S. culture” because they measure one’s actual acculturation in either one’s ethnic culture or the mainstream U.S. culture. Except for ideal acculturation in the public domain ($r = .03$) and actual acculturation in the private domain ($r = -.40$), the bivariate correlations between these pairs of items tended to be negative with small effect sizes ranging from $-.01$ to $-.16$, $M = -.13$, $SD = .13$. Results suggest that U.S. and ethnic culture orientations as measured by the MINA were largely orthogonal across domains (private vs. public) and frames of references (ideal, actual, normative). I thus concluded that MINA items differentiated acculturation on U.S. and ethnic culture orientations.

Acculturation in public and private domains

To examine whether the MINA adequately distinguished acculturation in public and private domains, bivariate correlations between pairs of corresponding MINA items were calculated. Eight pairs of MINA items asked participants to report acculturation in corresponding public (i.e., participation) and private (i.e., value adoption) domains. For example, the item “how much does mainstream U.S. society expect you to *adopt values* of your ethnic culture” corresponds with the item “how

much does mainstream U.S. society expect you to *participate* in your ethnic culture” because they both measure ethnic culture orientation as expected by mainstream U.S. society. The bivariate correlations between these pairs of items were positive with large effect sizes, $r_s = [.56, .71]$, $M = .64$, $SD = .07$. Because correlations close to .70 suggest that two measures assess the same construct (Carlson & Herdman, 2012), I conclude that the MINA did not adequately distinguish acculturation in public and private domains. As a result, each aforementioned pair of MINA items were averaged to create eight acculturation scores for the main PRRSA analyses.

Acculturation from actual, ideal and normative frames of reference

To examine whether the MINA adequately distinguished acculturation on actual, ideal and normative planes, bivariate correlations between sets of corresponding MINA items were calculated. MINA items were grouped into four sets, each set consisting of four items that measure actual acculturation, ideal acculturation, acculturation as expected by one’s ethnic community, and acculturation as expected by mainstream U.S. society. The bivariate correlations between actual and ideal acculturation ranged from .53 to .66, $M = .57$, $SD = .06$, with the average association falling about 2 standard deviations below the .70 cutoff for distinct constructs (Carlson & Herdman, 2012). This suggests that actual and ideal acculturation tended to be closely related yet distinct. The bivariate correlations between actual and ethnic-normative frame of reference ranged from .11 to .26, $M = .19$, $SD = .07$, suggesting that acculturation expected by one’s ethnic community was weakly related to actual acculturation. The bivariate correlations between actual and mainstream-normative frame of reference ranged from .11 to .38, $M = .25$, $SD = .15$,

suggesting that acculturation expected by mainstream U.S. society tended to be weakly related to actual acculturation. Overall, findings suggest that the MINA adequately distinguishes acculturation on actual, ideal and normative frames of reference.

Criterion-related evidence

To provide criterion-related evidence for the MINA, I examined the relation between MINA items and the AMAS-ZABB factors. The AMAS-ZABB is a bilinear multidimensional acculturation measure designed to measure one's U.S. culture orientation (i.e., U.S. cultural competence, English competence, U.S. identity) and ethnic culture orientation (i.e., ethnic culture competence, ethnic language competence, ethnic identity) using six subscales. It is hypothesized that actual acculturation items would correlate with AMAS-ZABB factors more strongly than ideal acculturation items. It is also hypothesized that normative ethnic and mainstream society acculturation items would show weak to null relationship with AMAS-ZABB factors.

First, the 6-factor structure of the AMAS-ZABB was tested in the current sample using maximum likelihood estimation robust to non-normality (MLR). I evaluated the fit of the models using fit indices ($RMSEA \leq .06$, $SRMR \leq .08$, $CFI \geq .95$; Hu & Bentler, 1999), and compared model fit based on changes in fit indices (a difference more than .01, .015, and .015 for CFI, RMSEA and SRMR, respectively, indicate differences in model fit; Chen, 2007; Cheung & Rensvold, 2002). The 6-factor oblique structure showed poor fit to the data, $SB\chi^2(804) = 2958.69$, $p < .001$, $RMSEA = .078$ [.075, .081], $SRMR = .065$, $CFI = .864$. Upon inspecting the

modification indices, items in the language competence subscales tended to have significant unique variance covariance. As a result, an 8-factor structure was fit to the data, in which the original English/ethnic language competence factors were further broken up to four factors, each with a speaking factor and an understanding factor. The 8-factor structure showed adequate fit to the data, $SB\chi^2(791) = 1995.696$, $p < .001$, RMSEA = .059 [.056, .062], SRMR = .060, CFI = .924, and fit significantly better than the 6-factor model, $\Delta CFI = .06$. However, the ethnic language understanding and speaking factors, and the English understanding and speaking factors were highly correlated at .86, suggesting that the speaking and understanding factors might not be distinct. As a result, the original 6-factor structure was retained with method effects, in which the unique variance of the language competence items that share the same question stem (e.g., “how well do you speak English at school or work” and “how well do you speak English with American friends”) were allowed to covary. The modified 6-factor model showed adequate fit to the data, $SB\chi^2(772) = 1965.145$, $p < .001$, RMSEA = .060 [.056, .063], SRMR = .059, CFI = .925, and fit significantly better than the original 6-factor model, $\Delta CFI = .06$, $\Delta RMSEA = .018$, $\Delta SRMR = .006$.

Next, two structural equation models (SEM) were run to separately examine MINA items that measure the ethnic culture orientation and the U.S. mainstream culture orientation. In the ethnic culture model, the three AMAS-ZABB factors on the ethnic culture orientation (i.e., ethnic culture competence, ethnic language competence, ethnic identity) were simultaneously regressed on the four MINA items on the ethnic culture orientation (i.e., actual ethnic culture orientation, ideal ethnic

culture orientation, U.S.-normative ethnic culture orientation, ethnic-normative ethnic culture orientation). Ethnic culture competence, which consisted of items that measure one's knowledge about their ethnic culture, significantly predicted actual ethnic culture orientation, $\beta = .51$, $SE = .06$, $p < .001$, but did not predict ideal or normative ethnic culture orientation, $ps > .24$. Similarly, English competence, which consisted of items that measure one's ability to speak and understand English in different contexts, predicted actual ethnic culture orientation $\beta = .47$, $SE = .06$, $p < .001$, but did not predict ideal or normative ethnic culture orientation, $ps > .41$. Ethnic identity, which consisted of items that measure one's sense of affiliation with one's ethnic culture, significantly predicted actual and ideal ethnic culture orientations, $\beta = .42$, $SE = .06$, $p < .001$ and $\beta = .23$, $SE = .07$, $p < .001$, respectively, but did not predict normative ethnic culture orientation, $ps > .32$.

In the U.S. mainstream culture model, the three AMAS-ZABB factors on the U.S. culture orientation were simultaneously regressed on the four MINA items on the U.S. mainstream culture orientation. The U.S. culture competence factor significantly predicted actual and ideal U.S. culture orientations, $\beta = .41$, $SE = .06$, $p < .001$ and $\beta = .13$, $SE = .06$, $p = .02$, respectively, but did not predict normative U.S. culture orientation, $ps > .49$. English competence significantly predicted actual U.S. culture orientation, $\beta = .52$, $SE = .06$, $p < .001$, but did not predict ideal or normative U.S. culture orientations, $ps > .05$. U.S. identity significantly predicted actual and ideal U.S. culture orientations, $\beta = .41$, $SE = .06$, $p < .001$ and $\beta = .24$, $SE = .07$, $p < .001$, respectively, but did not predict normative U.S. culture orientation, $ps > .65$.

Consistent with the hypotheses, results suggest that actual U.S. and ethnic culture orientations as measured by the MINA were consistently predicted by respective AMAS-ZABB factors with moderate effect sizes. Ideal ethnic culture orientation was sometimes predicted by respective AMAS-ZABB factors with small effect sizes. U.S.-normative and ethnic-normative acculturation was not related to AMAS-ZABB factors.

Preliminary Analysis

See [Table 1](#) for the summary of intercorrelation between acculturation orientations and outcome variables. Higher actual and ideal ethnic culture orientation was significantly associated with less depressive symptoms, higher subjective life satisfaction and higher belongingness with small effect sizes, $ps \leq .04$. Higher actual U.S. culture orientation was significantly associated with higher subjective life satisfaction and higher belongingness with small effect sizes, $ps \leq .04$. Higher ideal U.S. culture orientation was significantly associated with higher belongingness, $r = .14, p = .005$. Interestingly, higher ethnic-normative and mainstream-normative U.S. orientation was associated with higher life satisfaction and belongingness, $ps \leq .02$.

Repeated measures ANOVA revealed significant differences between ethnic culture orientation on ideal, actual and normative planes, $F(3, 1311) = 116.70$, partial $\eta^2 = .21, p < .001$. Bonferroni-adjusted comparisons indicated that ethnic-normative ethnic culture orientation ($M = 5.44$) tended to be significantly higher than ideal ethnic culture orientation ($M = 4.74$), actual ethnic culture orientation ($M = 4.55$) and U.S.-normative ethnic culture orientation ($M = 4.00$), $ps < .001$. Ideal ethnic culture

orientation tended to be significantly higher than actual ethnic culture orientation, $p < .001$. U.S.-normative ethnic culture orientation tended to be the lowest, $ps < .001$.

Repeated measures ANOVA revealed significant differences between U.S. culture orientation on ideal, actual and normative planes, $F(3, 1311) = 118.93$, partial $\eta^2 = .30$, $p < .001$. Bonferroni-adjusted comparisons indicated that participants on average reported similar levels of U.S.-normative ($M = 5.44$) and actual U.S. culture orientation ($M = 5.44$), both of which tended to be significantly higher than ideal U.S. culture orientation ($M = 5.06$) and ethnic-normative U.S. culture orientation ($M = 3.95$), $ps < .001$.

Polynomial Regression and Response Surface Analysis

Examining assumption of discrepancy

Before conducting PRRSA, it is important to inspect the base rate of discrepancy between each pair of predictors (e.g., actual U.S. acculturation and ideal U.S. acculturation; Shanock et al., 2010). If it turns out that very few participants have discrepant values, the practical significance of exploring how discrepancies relate to an outcome may be small. Specifically, any participant with a standardized score on one predictor that is half a standard deviation above or below the standardized score on the other predictor is considered to have discrepant values (Fleenor et al., 1996, as cited by Shanock et al., 2010). See [Table 2](#) for the descriptive patterns of congruence-discrepancy. At least 44.7% of participants reported discrepant values for each pair of predictors. Confirming results from bivariate correlation analyses, the discrepancy rate was lower for actual/ideal acculturation (44.7% for U.S. culture orientation and 50% for ethnic culture orientation) and higher

for actual/mainstream-normative (56.6% for U.S. culture orientation and 67.3% for ethnic culture orientation) and actual/ethnic-normative acculturation (67.4% for U.S. culture orientation and 67.3% for ethnic culture orientation). Overall, results suggest that a considerable number of participants reported discrepancy between acculturation frames of reference in the sample.

Evaluating fit of measurement models

All endogenous variables in the PRRSA models were modeled as latent factors using MLR. Because the structural models were just-identified, the model fit of the PRRSA models was the same as the model fit of the measurement models of the endogenous latent variables. The fit of the measurement models was evaluated using fit indices ($RMSEA \leq .06$, $SRMR \leq .08$, $CFI \geq .95$; Hu & Bentler, 1999). The latent factor of depression was modeled as a single-factor structure where all CES items freely loaded onto one factor except for the first item, the factor loading of which was constrained to 1 for model identification. The model exhibited adequate model fit, $RMSEA = .066$, 99% CI = [.056, .076], $SRMR = .034$, $CFI = .935$. The latent factor of subjective life satisfaction was modeled as a single-factor structure where SWLS items freely loaded onto one factor and the factor loading of the first item was constrained to 1. The model exhibited good model fit, $RMSEA = .050$, 99% CI = [.030, .070], $SRMR = .026$, $CFI = .977$. The latent factor of belongingness was modeled as a single-factor structure where GBS items freely loaded onto one factor and the factor loading of the first item was constrained to 1. The model exhibited good model fit, $RMSEA = .060$, 99% CI = [.044, .076], $SRMR = .022$, $CFI = .971$. I thus proceeded with PRRSA.

Ideal and actual acculturation on ethnic culture orientation.

To examine whether the congruence and discrepancy between ideal and actual acculturation on ethnic culture orientation predicted psychological outcomes, polynomial regression models were fit to the data using SEM. The PRRSA model explained 2.9% of variance in the latent construct of depression as measured by the CES, $p = .085$ (Table 3; Figure 1). There was a main effect of ideal ethnic culture orientation, $\beta = -.22$, $SE = .08$, $p = .003$, which suggests that participants who endorsed high ideals of ethnic culture orientation tended to report less depressive symptoms. There was a significant negative slope along the line of congruence ($X = Y$), $a_1 = -.07$, $SE = .02$, $t = -2.67$, $p = .008$, and a significant positive slope along the line of discrepancy ($X = -Y$), $a_3 = .15$, $SE = .07$, $t = 2.14$, $p = .033$. Results suggest that for participants whose ideal and actual ethnic culture orientations matched, higher ethnic culture orientation predicted lower depressive symptoms. For participants whose ideal and actual ethnic culture orientations were discrepant, those whose actual ethnic culture orientation was higher than ideal levels tended to report more depressive symptoms.

The PRRSA model explained 4.0% of variance in the latent construct of life satisfaction as measured by the SWLS, $p = .044$ (Table 3; Figure 2). There was a main effect of ideal ethnic culture orientation, $\beta = .19$, $SE = .08$, $p = .016$, which suggests that participants who endorsed high ideals of ethnic culture orientation tended to report greater life satisfaction. There was a significant negative curvature along the line of discrepancy, $a_4 = -.29$, $SE = .15$, $t = -1.99$, $p = .047$, which suggests

that the more discrepancy one experienced between ideal and actual ethnic culture orientations, the lower life satisfaction one tended to report.

The PRRSA model explained 6.2% of variance in the latent construct of belongingness as measured by the GBS, $p = .009$ (Table 3; Figure 3). There was a main effect of ideal ethnic culture orientation, $\beta = .24$, $SE = .07$, $p = .002$, which suggests that participants who endorsed high ideals of ethnic culture orientation tended to report higher belongingness. There was a significant positive slope along the line of congruence, $a_1 = .12$, $SE = .05$, $t = 2.11$, $p = .035$, which suggests that for those participants whose ideal and actual ethnic culture acculturation matched, higher ethnic culture orientation predicted higher belongingness. There was a significant negative slope ($a_3 = -.26$, $SE = .10$, $t = -2.49$, $p = .013$) and a significant negative curvature ($a_1 = -.31$, $SE = .10$, $t = -3.15$, $p = .002$) along the line of discrepancy. This suggests that the more discrepancy one experienced between ideal and actual ethnic culture orientations, the lower belongingness one tended to report, an effect that was more pronounced for those whose actual ethnic culture orientation was higher than their ideal levels.

Mainstream-normative and actual acculturation on ethnic culture orientation

The PRRSA model explained less than 1% of variance in the latent construct of depression as measured by the CES (Table 4). There was no main effect of actual or mainstream-normative ethnic culture orientation, $ps > .144$. No significant relation was found along the lines of congruence and discrepancy, which suggests that the congruence and discrepancy between actual ethnic culture orientation and that as expected by U.S. mainstream society did not predict one's depressive symptoms.

The PRRSA model explained 1.4% of variance in the latent construct of life satisfaction as measured by the SWLS, $p = .248$ (Table 4). There was no main effect of actual or mainstream-normative ethnic culture orientation, $ps > .086$. No significant relation was found along the lines of congruence and discrepancy, which suggests that the congruence and discrepancy between actual ethnic culture orientation and that as expected by U.S. mainstream society did not predict one's subjective life satisfaction.

The PRRSA model explained 2.8% of variance in the latent construct of belongingness as measured by the GBS, $p = .092$ (Table 4; Figure 4). There was a main effect of actual ethnic culture orientation, $\beta = .12$, $SE = .05$, $p = .022$, which suggests that participants who reported high ethnic culture orientation tended to report higher belongingness. There was a significant positive slope along the line of congruence, $a_1 = .11$, $SE = .05$, $t = 2.00$, $p = .046$, which suggests that for those participants whose actual ethnic culture orientation matched the perceived normative expectation of U.S. mainstream society, higher ethnic culture orientation predicted higher belongingness.

Ethnic-normative and actual acculturation on ethnic culture orientation

The PRRSA model explained 3.7% of variance in the latent construct of depression as measured by the CES, $p = .051$ (Table 5; Figure 5). There was a main effect of actual ethnic culture orientation, $\beta = -.16$, $SE = .08$, $p = .045$, which suggests that participants who reported higher levels of ethnic culture orientation tended to report less depressive symptoms. There was a significant negative slope along the line of congruence, $a_1 = -.11$, $SE = .03$, $t = -3.79$, $p < .001$, which suggests that for those

participants whose actual ethnic culture orientation matched the perceived normative expectation of their ethnic community, higher ethnic culture orientation predicted lower depressive symptoms.

The PRRSA model explained 1.5% of variance in the latent construct of life satisfaction as measured by the SWLS, $p = .225$ (Table 5). There was no main effect of actual or ethnic-normative ethnic culture orientation, $ps > .080$. No significant relation was found along the lines of congruence and discrepancy, which suggests that the congruence and discrepancy between actual ethnic culture orientation and that as expected by one's ethnic community did not predict one's subjective life satisfaction.

The PRRSA model explained 2.9% of variance in the latent construct of belongings as measured by the GBS, $p = .086$ (Table 5; Figure 6). There was no main effect of actual or ethnic-normative ethnic culture orientation, $ps > .052$. There was a significant positive slope along the line of congruence, $a_1 = .15$, $SE = .06$, $t = 2.36$, $p = .019$, which suggests that for those participants whose actual ethnic culture orientation matched the perceived normative expectation of their ethnic community, higher ethnic culture orientation predicted higher belongingness.

Summary of results on ethnic culture orientation

To summarize (Table 9), for those participants whose actual ethnic culture orientation was congruent with their ideal levels, higher ethnic culture orientation predicted lower depressive symptoms and a higher sense of belongingness. Similarly, for those participants whose actual ethnic culture orientation was congruent with normative expectations by their ethnic community, higher ethnic culture orientation

predicted lower depressive symptoms and higher belongingness. For those participants whose actual ethnic culture orientation was congruent with normative expectations by U.S. mainstream society, higher ethnic culture orientation predicted higher belongingness.

Discrepancy between actual and ideal ethnic culture orientations predicted negative outcomes. Specifically, those who reported high actual and low ideal ethnic culture orientation tended to report more depressive symptoms. Those who experienced greater discrepancy between actual and ideal ethnic culture orientation tended to report lower life satisfaction and lower belongingness.

Ideal and actual acculturation on U.S. culture orientation

The PRRSA model explained 3.1% of variance in the latent construct of depression as measured by the CES, $p = .073$ (Table 6; Figure 7). There was no main effect of ideal or actual U.S. culture orientation, $ps > .056$. There was a significant positive curvature along the line of discrepancy, $a_4 = .17$, $SE = .04$, $t = 3.96$, $p < .001$. This suggests that participants who experienced greater discrepancy between ideal and actual U.S. culture orientations tended to report more depressive symptoms.

The PRRSA model explained 3.8% of variance in the latent construct of life satisfaction as measured by the SWLS, $p = .052$ (Table 6). There was no main effect of ideal or actual U.S. culture orientation, $ps > .118$. No significant relation was found along the lines of congruence and discrepancy, which suggests that the congruence and discrepancy between ideal and actual U.S. culture orientations did not predict one's subjective life satisfaction.

The PRRSA model explained 6.0% of variance in the latent construct of belongingness as measured by the GBS, $p = .011$ (Table 6; Figure 8). There was a significant main effect of actual U.S. culture orientation, $\beta = .28$, $SE = .10$, $p = .006$, which suggests that participants who reported higher levels of U.S. culture orientation tended to report higher belongingness. Contrary to the hypothesis, there was a significant positive slope ($a_3 = .31$, $SE = .13$, $t = 2.28$, $p = .023$) and a significant positive curvature ($a_4 = .19$, $SE = .07$, $t = 2.64$, $p = .009$) along the line of discrepancy. Based on the shape of curvature (Figure 8), results suggest that participants who experienced more discrepancy between ideal and actual U.S. culture orientations, especially those whose actual U.S. culture orientation was much higher than their ideal levels tended to report a greater sense of belongingness.

Mainstream-normative and actual acculturation on U.S. culture orientation

The PRRSA model explained 0.4% of variance in the latent construct of depression as measured by the CES, $p = .517$ (Table 7). No significant relation was found along the lines of congruence and discrepancy, which suggests that the congruence and discrepancy between actual U.S. culture orientation and that as expected by U.S. mainstream society did not predict depressive symptoms.

The PRRSA model explained 3.4% of variance in the latent construct of life satisfaction as measured by the SWLS, $p = .066$ (Table 7; Figure 9). There was no main effect of actual or mainstream-normative U.S. culture orientation, $ps > .107$. Interestingly, there was a positive curvature along the line of congruence, $a_2 = .05$, $SE = .02$, $t = 2.27$, $p = .024$. This suggests that those participants who endorsed low levels of U.S. culture orientation consistent with perceived expectation by U.S.

society and those who endorsed high levels of U.S. culture orientation consistent with perceived expectation by U.S. society tended to report high life satisfaction.

The PRRSA model explained 5.4% of variance in the latent construct of belongingness as measured by the GBS, $p = .017$ (Table 7). There was a significant main effect of actual U.S. culture orientation, $\beta = .20$, $SE = .10$, $p = .037$, which suggests that participants who reported higher U.S. culture orientation tended to report higher belongingness. No significant relation was found along the lines of congruence and discrepancy, which suggests that the congruence and discrepancy between actual U.S. culture orientation and that as expected by U.S. mainstream society did not predict belongingness.

Ethnic-normative and actual acculturation on U.S. culture orientation

The PRRSA model explained 3.2% of variance in the latent construct of depression as measured by the CES, $p = .068$ (Table 8; Figure 10). There was no main effect of actual or ethnic-normative U.S. culture orientation, $ps > .83$. There was a significant positive curvature along the line of discrepancy, $a_4 = .07$, $SE = .03$, $t = 2.242$, $p = .025$, which suggests that participants who experienced more discrepancy between actual U.S. culture orientation and that expected by their ethnic community tended to report more depressive symptoms.

The PRRSA model explained 3.4% of variance in the latent construct of life satisfaction as measured by the SWLS, $p = .065$ (Table 8). There was no main effect of actual or ethnic-normative U.S. culture orientation, $ps > .37$. No significant relation was found along the lines of congruence and discrepancy, which suggests that the

congruence and discrepancy between actual U.S. culture orientation and that as expected by one's ethnic community did not predict life satisfaction.

The PRRSA model explained 5.1% of variance in the latent construct of belongingness as measured by the GBS, $p = .020$ (Table 8; Figure 11). There was a significant main effect of actual U.S. culture orientation, $\beta = .25$, $SE = .09$, $p = .007$, which suggests that participants who reported higher U.S. culture orientation tended to report higher belongingness. There was a significant positive slope along the line of congruence, $a_1 = .18$, $SE = .08$, $t = 2.255$, $p = .025$, which suggests that for those participants whose actual U.S. culture orientation matched that expected by their ethnic community, higher U.S. culture orientation predicted a higher sense of belongingness.

Summary of results on U.S. culture orientation

To summarize (Table 9), for those participants whose actual U.S. culture orientation was congruent with the normative expectation they perceived from U.S. mainstream society, those with low or high U.S. culture orientation reported higher life satisfaction than those with moderate levels. For those participants whose actual U.S. culture orientation was congruent with the normative expectation they perceived from their ethnic community, higher U.S. culture orientation predicted higher belongingness.

For participants whose actual U.S. culture orientation was discrepant from the normative expectation they perceived from their ethnic community, greater discrepancy predicted higher depressive symptoms. For participants whose actual U.S. culture orientation was discrepant from their ideal levels, greater discrepancy

predicted higher depressive symptoms. Participants whose actual U.S. culture orientation was higher than their ideal levels were likely to report a high sense of belongingness.

Chapter 4: Discussion

This study applied the SDT (Higgins, 1987) to the examination of acculturation orientations, and tested if the congruence-discrepancy between actual/ideal and actual/normative acculturation orientations predicted psychological outcomes including depression, subjective life satisfaction, and belongingness. I summarized and discussed the main findings of this study in the following sections.

Differentiating Acculturation Orientations on Actual, Ideal, and Normative Planes

Findings suggest that the MINA differentiated acculturation on actual, ideal, and normative planes. Importantly, the relationship with an existing acculturation measure, the AMAS-ZABB, provided criterion-related evidence for actual acculturation and discriminant evidence for ideal and normative acculturation. Actual U.S. culture and ethnic culture orientations were consistently predicted by all three AMAS-ZABB factors with medium effect sizes. In contrast, ideal acculturation was only significantly predicted by the cultural identity and/or cultural knowledge factors with small effect sizes, and normative acculturation was not significantly related to any AMAS-ZABB factors. Kim and Abreu (2001) broadly classified domains of acculturation into behaviors, cultural identity, knowledge, and values. Zhang and Moradi (2013) extracted three factors of behavior, knowledge, and cultural identity from existing Asian American acculturation measures. Because the AMAS-ZABB encompasses specific questions about language use, cultural knowledge and cultural identity, results suggest that actual acculturation as measured by the single-item format of the MINA can tap into shared variance among multiple facets of acculturation.

Contrary to my hypothesis, the MINA did not effectively differentiate private and public domains of acculturation. Previous research has identified values acculturation to be a distinct aspect of acculturation for Asian Americans that tends to be weakly related to acculturation behaviors, knowledge and identity (Kim et al., 1999, 2001; Miller et al., 2013; Zhang & Moradi, 2013). Results in the current study indicated that cultural participation (i.e., public) and cultural value adoption (i.e., private) were so highly correlated across actual, ideal, and normative planes that these items did not seem to assess distinct constructs. It is possible that the current wording of the MINA lacks the specificity to distinguish acculturation in terms of the utilitarian activities from the value aspects of a culture (Arends-Toth & Van de Vijver, 2006; Navas et al., 2007).

Consistent with the bilinear conceptualization of acculturation orientation (e.g., Berry, 1980; LaFromboise, Coleman, & Gerton, 1993; Ryder et al., 2000), the MINA yielded scores on U.S. and ethnic culture orientations with small negative correlations. Previous studies with Asian Americans have found inconsistent relationships between U.S. and ethnic culture orientations, including medium to large negative correlations in terms of food, language and/or social interactions (Flannery, Reise, & Yu, 2001; Lee et al., 2006; Miller, 2007, 2010; Nguyen & Von Eye, 2002; Tsai, Ying, & Lee, 2000; Zhang & Moradi, 2013) and values (Miller, 2007; Nguyen & Von Eye, 2002), and small positive correlation in terms of values (Miller, 2010). Kang (2006) argued that rating acculturation as the frequency of engaging in cultural practices often yields scores with large negative intercorrelation because the time devoted to practicing U.S. cultural activities and ethnic cultural activities is inherently

dependent. On the other hand, preferences, cultural identity, and values, when rated as endorsement, tend to yield scores that show bilinear independence. Even though the MINA employs frequency ratings, the items consist of abstract evaluation (i.e., cultural participation and value adoption) rather than specific activities, which may have allowed more independence in responses.

Prevalence of Discrepancy Between Acculturation Orientations

Results suggest that the discrepancy between acculturation planes was prevalent among participants, such that between 45% to 67% endorsed discrepant scores for actual/ideal, actual/mainstream-normative, and actual/ethnic-normative acculturation orientations. With regard to actual/ideal acculturation discrepancy, participants tend to report higher ideal than actual levels in ethnic culture orientation, and higher actual than ideal levels in U.S. culture orientation. This pattern was inconsistent with previous research, which found that first-generation immigrants in Spain and New Zealand and Chinese international students in the U.S. tend to desire high levels of *integration* or involvement in the U.S. culture that felt underachieved in reality (Lu et al., 2018; Navas et al., 2007; Ward & Kus, 2012). This inconsistency may be explained by different cultural experiences associated with generational status. Cultural adjustment for first-generation immigrants and sojourners involves socialization to the norms of the dominant culture, whereas cultural adjustment for ethnic minority individuals who have spent the majority of their time in the dominant culture involves socialization to the norms of their ethnic culture, a unique cultural process defined as enculturation (Kim & Abreu, 2001; Kim, 2007; Kim, Ahn, & Lam, 2009). It is thus possible that first-generation immigrants and sojourners desire

greater U.S. culture orientation in social and work domains than they actually have (Lu et al., 2018; Navas et al., 2007; Ward & Kus, 2012), whereas participants in the current study, who were predominantly 1.5-generation and second-generation Asian American young adults, desired greater ethnic culture orientation and lower U.S. culture orientation than they actually had.

In comparison to actual levels, participants perceived that their ethnic community expected them to have higher ethnic culture orientation and lower U.S. culture orientation. These findings were consistent with theories and empirical findings regarding Asian American families. Hwang (2006) proposed that Asian American parents and children may experience Acculturative Family Distancing due to incongruent cultural values. Rosenthal, Demetriou, and Efklides (1989) argued that immigrant parents may retain more values from their culture of origin to gain a sense of control in parenting, whereas their children may adopt more norms of the dominant U.S. culture due to exposure through school, media and peer interactions from an early age. Asian American children who perceived a bigger acculturation gap from their parents reported greater family conflict (Lee, Choe, Kim, & Ngo, 2000). Similarly, larger child-parent differences in Asian values predicted greater conflict (Tsai-Chae & Nagata, 2008). Current findings extended beyond parent-child discrepancy in endorsing Asian values, and captured a general expectation to endorse higher ethnic culture orientation and lower U.S. culture orientation from Asian Americans' ethnic community.

Participants reported that their ethnic community expected greater ethnic culture orientation than mainstream society, whereas mainstream society expected

greater U.S. culture orientation than their ethnic community. The discrepant levels of perceived normative acculturation orientations revealed different, and at times even opposing demands from their ethnic culture and the dominant U.S. culture regarding acculturation. The Interactive Acculturation Model (Bourhis, Moïse, Perreault, & Senécal, 1997) posits that mainstream society members' attitudes toward immigration range depending on how much they accept immigrants to maintain heritage culture and adopt dominant culture. The model further theorizes that the match or mismatch of expected cultural orientations by the mainstream society members and ethnic/immigrant groups relational outcomes ranging from consensual to conflictual. Participants' perceived discrepant acculturation orientations as expected by their ethnic community and mainstream society can be understood as the individual level manifestation of the group relations as described by Bourhis et al.'s model. LaFromboise et al. (1993) defined bicultural competence as the process by which individuals are able to successfully meet the demands of two distinct cultures through cultural knowledge, positive attitudes, self-efficacy, communication skills, and role repertoire. For example, Asian American and Latinx American individuals with high cognitive flexibility have been found to more effectively cope with and reconcile potential conflicts when they function in two different cultural norms (Ahn, Kim, & Park, 2008; Carrera & Wei, 2014).

Overall, findings suggest that Asian Americans often perceive inconsistent acculturation expectations from their ethnic community and mainstream U.S. society, with ethnic community expecting higher ethnic culture orientation and mainstream society expecting higher U.S. culture orientation. In addition, Asian Americans tend

to endorse ideal and actual acculturation orientations that fall between expectations from their ethnic community and mainstream society, which may represent their effort to reconcile and meet demands of different cultural norms.

Congruent and High Ethnic Culture Orientation Predicted Positive Outcomes

Ethnic culture orientation predicted positive psychological outcomes under conditions of congruence. When actual ethnic culture orientation matched one's own ideals, the expectation of one's ethnic community, or the expectation of mainstream society, higher ethnic culture orientation was associated with less depressive symptoms and greater belongingness. In contrast, discrepant actual/ideal ethnic culture orientations predicted negative psychological outcomes. Ethnic culture orientation predicted more depressive symptoms for those whose actual level exceeded their ideal level. Greater discrepancy between actual and ideal ethnic culture orientation predicted lower life satisfaction and belongingness.

Ethnic culture orientation, measured as behaviors, values, and social relationships, has been inconsistently linked to psychological outcomes for Asian Americans. Ethnic culture orientation has been found to predict positive psychological outcomes such as general self-efficacy, cognitive flexibility and collective self-esteem (Kim & Omizo, 2010), unrelated to psychological distress (Ruzek, Nguyen, & Herzog, 2011), and positively associated with psychological symptoms (Alamilla, Kim, Walker, & Sisson, 2017; Wong, Tran, & Lai, 2009). Yoon and colleagues' (2011, 2013) two meta-analyses revealed non-significant relationships between ethnic culture orientation and mental health outcomes. Yoon et al. (2013) argued that ethnic culture behaviors may expose individuals to

discrimination and feeling othered in mainstream society, whereas ethnic culture identification may provide a sense of solidarity. The current findings may provide a nuanced explanation for the inconsistent relationship between ethnic culture orientation and psychological outcomes, namely ethnic culture orientation may be a positive factor for mental health when it is congruent with one's desires and perceived norms, but a source of distress when it is incongruent with one's desires. The importance of experiencing congruence regarding ethnic culture orientation makes sense given Asian Americans' racial experience. Asian Americans are racialized in the U.S. as successful foreigners and have been a persistent target of racial discrimination because of their perpetual foreignness (Liang et al., 2004; Yoo, Steger, & Lee, 2010). In other words, a salient racism experience Asian American populations face in the U.S. is closely related to prescribed and perceived cultural distance from dominant U.S. culture. For Asian Americans who experience congruence between ideal/actual, actual/ethnic-normative, and actual/mainstream-normative ethnic culture orientation, they may feel less internal conflict. As a result, they may derive more pride and meaning in maintaining their ethnic culture, and experience more solidarity and resilience in face of racial discrimination. When Asian Americans' actual ethnic culture orientation is different from their ideals, they may feel greater internal conflict regarding ethnic culture maintenance, and are more likely to internalize shame and blame in face of racial discrimination and otherness.

It is worth noting that contrary to the hypotheses, discrepant actual/normative ethnic culture orientations did not predict psychological outcomes. This is surprising given prior studies that found parent-child conflict in retaining Asian values to predict

emotional distance and family conflict (Ahn et al., 2008; Lee, Choe, Kim, & Ngo, 2000; Tsai-Chae & Nagata, 2008), as well as Kus and Ward's (2009) study that found the mismatch between own and perceived host attitudes toward assimilation predicted lower levels of life satisfaction for first-generation Asian immigrants in New Zealand. It is possible that the link between actual/normative ethnic culture orientation discrepancy and psychological outcomes is moderated by other factors. For example, critical consciousness and collective self-esteem have been found to buffer the psychological distress from racial discrimination (Barrie et al., 2016; Kelso et al., 2014). Cognitive flexibility, parenting styles, and communication have been found to moderate the relationship between family value conflict or family acculturation gap and psychological distress in Asian American families (Kim & Park, 2011; Park, Kim, Chiang, & Ju, 2010; Ahn et al., 2008). It is thus possible that Asian Americans with higher critical consciousness and collective self-esteem are better able to cope with discrepant actual/mainstream-normative ethnic culture orientations (e.g., societal pressure to assimilate), and Asian Americans with greater cognitive flexibility and more communication are better able to cope with discrepant actual/ethnic-normative ethnic culture orientations.

To summarize, the link between ethnic culture orientation and psychological outcomes may depend on the degree of congruence between actual/ideal and actual/normative perceptions. Ethnic culture orientation may be a positive factor for mental health when it is congruent with one's desires and perceived ethnic community and societal norms, but a source of dissatisfaction and disconnection when it is incongruent with one's desires.

Congruence-Discrepancy on U.S. Culture Orientation: The Benefit and Cost of Fitting in

Regarding actual/mainstream-normative orientations, findings suggest that participants with congruent and moderate levels of actual/mainstream-normative U.S. culture orientation may experience more internal conflict and stress than those with low and high levels. For Asian Americans who perceive low societal pressure to assimilate, they may experience satisfaction and comfort with their low levels of U.S. culture orientation. For Asian Americans whose actual U.S. culture orientation matched high levels of societal expectation to assimilate, they may feel satisfied to fit in and take part in the dominant society. In contrast, Asian Americans with congruent and moderate levels of actual/mainstream-normative U.S. culture orientation may experience the most conflict and pressure because moderate ratings may be an average of their continual effort to manage and negotiate their cultural expression between acculturative extremes (Pyke & Dang, 2003). These participants may have rated societal expectation at moderate levels because they perceived conflicting messages and stereotypes. They may have rated their actual U.S. culture orientation at moderate levels because they often found themselves code-switching to “carve out a non-stigmatized identity at the bicultural middle of the acculturative spectrum” (p.149, Pyke & Dang, 2003).

Perceived expectation from one’s ethnic community also played a role in how U.S. culture orientation related to psychological outcomes. Congruent and high actual/ethnic-normative U.S. culture orientation predicted greater belongingness whereas greater discrepancy predicted higher depressive symptoms. Researchers have argued that adopting and participating in mainstream host culture, especially external

behaviors, affords survival utility for immigrants and sojourners (Navas et al., 2007; Yoon et al., 2013). For Asian Americans, high U.S. culture orientation has been linked to better vocational functioning (Kim, 2009) and mental health (Suinn, 2010). Asian Americans with congruent and high levels of actual/ethnic-normative U.S. culture orientations may feel prepared to take advantage of the benefits of participating in mainstream culture while experiencing low levels of value conflict with their family and ethnic community (Hwang, 2006). In contrast, Asian Americans who feel their U.S. culture orientation does not match their ethnic community's expectation may experience greater acculturative conflict and psychological distress.

In terms of actual/ideal U.S. culture orientations, greater discrepancy predicted higher depressive symptoms. Asian Americans whose actual U.S. culture orientation is lower than ideal levels may feel distress due to feeling disconnected and isolated from mainstream society, especially in social and occupational realms (Lu et al., 2018; Navas et al., 2007). On the other hand, Asian Americans whose actual U.S. culture orientation is higher than ideal levels may feel distress due to the pressure to act assimilated to fit in. It is especially important to note that those participants whose actual U.S. culture orientation was higher than their ideal levels also reported a higher sense of belongingness, which is the only positive psychological outcome associated with discrepancy found in the current study. Endorsing U.S. culture orientation above and beyond one's ideal levels may protect Asian Americans from experiences of being othered and discriminated while costing their emotional well-being.

In all, the congruence-discrepancy of U.S. culture orientation related to psychological outcomes in a complex way. Endorsing high U.S. culture orientation

may afford Asian Americans general belongingness, although inconsistency with one's desires and perceived expectation from one's community may cost their emotional well-being.

Limitations

Several limitations should be considered for this study. Because all study variables were self-reported data collected in a single sitting, common method variance (CMV), or the systematic error variance shared among variables that are measured with the same source and/or method, can be a major threat to validity and can artificially inflate or deflate correlations (Podsakoff & Organ, 1986; Richardson, Simmering, & Sturman, 2009). For instance, CMV may have inflated the correlations between acculturation orientations on ideal, actual, and normative planes. This study used several recommended procedures and statistical controls to minimize CMV, including ensuring anonymity, counterbalancing the order of questions, using clear and precise scales, informing participants that there is no preferred answer, clear instructions with definitions, presenting similarly formatted questions on separate pages, using cover letters to transition between questionnaires, and modeling variables using confirmatory factor analysis (Reio, 2010; Tehseen, Ramayah, & Sajilan, 2017). Future studies can collect data from different respondents (e.g., have caregiver report expected acculturation orientation) and use other data collection methods (e.g., priming and verbalization) to further minimize CMV.

Three outcome variables were tested in relation to six pairs of acculturation orientations, resulting in a total of 18 PRRSA models. Using the conventional error rate of .05 for response surface coefficients in each PRRSA model may have inflated

Type I error and caused erroneous conclusions. However, I did not use an adjusted familywise error rate because of concerns of Type II error, especially given the small effect size of the acculturation-mental health relationship in the literature and the power needed for PRRSA. A related concern is the small amount of explained variance in outcome variables, which ranged from .4% to 3.7% for depression, 1.4% to 4.0% for subjective life satisfaction, and 2.8% to 6.2% for general belongingness. The low amount of variance explained calls into question the practical significance of the findings. It is possible that discrepant acculturation orientations link to distal and global outcomes through proximal outcomes such as bi-cultural self-efficacy, social connectedness, and satisfaction about cultural adjustment. Although in SDT research, vulnerable affective states are most often operationalized as depression, anxiety, positive and negative affect, and subjective satisfaction, it may be more suitable to examine relational and proximal outcomes with regard to discrepant acculturation orientations.

Participants in this study consisted of Asian and Asian American identifying individuals with a range of immigration background and generational status. However, the sample was predominantly 1.5- and second-generation young adults. In addition, Asian American populations consist of heterogeneous ethnic culture groups with unique culture and immigration history (Kim, 2009). As a result, findings may not apply to other Asian/Asian American subgroups such as first-generation Asian elderly, Asian international students, and Asian American refugees.

Lastly, the SDT generally postulates that discrepant self-states are related to vulnerable affective states of dejection and agitation (Higgins, 1987), but is limited in

explaining why discrepancy may relate to some types of negative emotional vulnerability but not others. Similarly, the acculturation theories posit that acculturation is linked to psychological and sociocultural adaptation, but does not theoretically discriminate between psychological outcomes (Berry, 1997, 2005). Additional research and replication is needed to formulate a comprehensive explanation for why congruence-discrepancy predicted different psychological outcomes.

Implications

Results of this study offered an innovative perspective to understand the psychological process of acculturation for Asian/Asian Americans. Given the prevalence of discrepancy between acculturation orientations, it is important for clinicians and professionals working with Asian/Asian American individuals to normalize and explore receiving discrepant cultural messages and expectation from one's ethnic community and mainstream society, especially assimilative messages from mainstream society and separation messages from one's ethnic community.

Liu et al. (2019) framed acculturation as a process of learning one's racial positionality in relation to White racial space and dominant cultural values through racism, microaggressions, and racial trauma. As a result, clinicians should recognize White supremacist ideology that affords advantages to endorsing U.S. culture orientation for ethnic racial minority individuals. Clinicians may help Asian/Asian Americans examine how their acculturation ideals developed by considering racism, racial discrimination, and internalized racism, with the goal to fortify a congruent and authentic sense of cultural position and ethnic identity. Because the shift of one's

ethnic identity and expression is dynamic and situational (Nagel, 1994), it is especially important to appreciate internalized normative acculturation expectation that may get activated in White and non-White spaces, and the continuing pressure to not appear “too ethnic” or “too assimilated” to avoid feeling othered and alienated (Pyke & Dang, 2003). Furthermore, clinicians should actively work with feelings of sadness, disappointment, and disconnection to help Asian/Asian Americans heal from the psychological cost of managing discrepant normative expectations regarding acculturation.

In terms of research, additional validation of the MINA is needed to examine single-item scale reliability (Wanous & Reichers, 1996), refine public and private domains of acculturation, and provide additional discriminant and criterion-related evidence. For example, perfectionism, especially one’s tendency to perceive that personal high standards are not met (i.e., Discrepancy; Slaney et al., 2001), shares conceptual overlap with falling short of one’s ideal acculturation orientation, and can be examined to provide criterion-related evidence. Maladaptive perfectionism has been found to predict depression (Yoon & Lau, 2008), and exacerbate effect of acculturative stress on depression (Rice et al., 2012; Wei et al., 2007) for Asian international students and Asian American college students.

Another way to extend the current study is to examine the trajectory of ideal, actual, and normative acculturation orientation development in longitudinal designs. A handful of longitudinal studies that examined acculturation and cultural adjustment of Asian international students revealed nuanced subgroups of students with distinctive acculturation and adjustment patterns (Meghani & Harvey, 2016; Wang et

al., 2012; Wang, Wei, & Chen, 2015). Future studies can employ similar methodology to examine how contextual factors (e.g., racial microaggression, school multicultural climate), relational factors (e.g., in-group and out-group social support, family cohesion), and personal factors (e.g., critical consciousness, collective self-esteem, internalized racism) may predict the trajectory of ideal, actual, and normative acculturation orientation development.

Table 1

Summary of Means and Standard Deviations for Acculturation Orientations and Intercorrelation with Depression, Subjective Satisfaction, and General Belongingness

	Ethnic Culture Orientation				U.S. Culture Orientation			
	Actual	Ideal	Ethnic-Normative	Mainstream-Normative	Actual	Ideal	Ethnic-Normative	Mainstream-Normative
Depression	-.10*	-.15**	.02	.01	.01	.07	-.08	-.02
Subjective Satisfaction	.11*	.14**	.01	.01	.10*	.02	.13**	.14**
General Belongingness	.15**	.19**	.08	.04	.17**	.14**	.11*	.17**
<i>M</i>	4.55	4.74	5.44	4.00	5.44	5.06	3.95	5.44
<i>SD</i>	1.36	1.27	1.31	1.54	1.26	1.29	1.34	1.38

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

Table 2

Percentage of Discrepancy Between Actual Acculturation Orientation and Ideal and Normative Acculturation Orientation for Ethnic Culture and U.S. Mainstream Culture

	Discrepancy (%) $\Delta SD < -.5$	Congruence (%) $-.5 < \Delta SD < .5$	Discrepancy (%) $\Delta SD > .5$
Ethnic Culture Orientation			
Actual vs. Ideal	25.8	50.0	24.2
Actual vs. Ethnic-Normative	26.0	37.7	36.3
Actual vs. Mainstream-Normative	31.5	32.6	35.8
U.S. Mainstream Culture Orientation			
Actual vs. Ideal	22.8	55.3	21.9
Actual vs. Ethnic-Normative	34.9	32.6	32.4
Actual vs. Mainstream-Normative	29.2	43.4	27.4

Note. Discrepancy = a standardized score on one predictor that is half a standard deviation above or below the standardized score on the other predictor; Congruence = a standardized score on one predictor that is within half a standard deviation difference from the standardized score on the other predictor (Fleenor et al., 1996, as cited by Shanock et al., 2010).

Table 3

Actual/Ideal Ethnic Culture Orientation Discrepancy as a Correlate of Depression, Subjective Satisfaction, and General Belongingness

Variable	Depression β (SE)	Subjective Satisfaction β (SE)	General Belongingness β (SE)
Actual ethnic culture orientation	.09 (.08)	-.08 (.08)	-.10 (.08)
Ideal ethnic culture orientation	-.22 (.08)**	.19 (.08)*	.24 (.07)**
Actual squared	.07 (.08)	-.10 (.08)	-.07 (.08)
Actual \times Ideal	-.18 (.13)	.30 (.13)*	.39 (.12)**
Ideal squared	.14 (.10)	-.15 (.10)	-.26 (.10)**
R^2	.029	.040*	.062**
Surface Values			
a ₁	-.07 (.02)**	.11 (.06)	.12 (.05)*
a ₂	.00 (.01)	.04 (.04)	.04 (.04)
a ₃	.15 (.07)*	-.26 (.14)	-.26 (.10)*
a ₄	.10 (.06)	-.29 (.15)*	-.31 (.10)**

Note. Actual ethnic culture orientation = actual ethnic culture participation and adoption one currently have; ideal ethnic culture orientation = ethnic culture participation and adoption one wish to have in ideal life; a₁ = slope along the line of congruence; a₂ = curvature along the line of congruence; a₃ = slope along the line of discrepancy; a₄ = curvature along the line of discrepancy.

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

Table 4

Actual/Mainstream-Normative Ethnic Culture Orientation Discrepancy as a Correlate of Depression, Subjective Satisfaction, and General Belongingness

Variable	Depression β (SE)	Subjective Satisfaction β (SE)	General Belongingness β (SE)
Actual ethnic culture orientation	-.08 (.05)	.09 (.06)	.12 (.05)*
Mainstream-normative ethnic culture orientation	.02 (.05)	.00 (.05)	.02 (.05)
Actual squared	.01 (.06)	.04 (.06)	.06 (.06)
Actual \times Mainstream-normative	-.02 (.06)	.02 (.06)*	.02 (.05)
Mainstream-normative squared	.03 (.05)	-.02 (.05)	-.03 (.05)
R^2	.007	.014	.028
Surface Values			
a ₁	-.03 (.03)	.09 (.07)	.11 (.05)*
a ₂	.00 (.02)	.02 (.05)	.03 (.04)
a ₃	-.04 (.03)	.09 (.07)	.08 (.05)
a ₄	.02 (.02)	.01 (.05)	.01 (.04)

Note. Actual ethnic culture orientation = actual ethnic culture participation and adoption one currently have; mainstream-normative ethnic culture orientation = ethnic culture participation and adoption perceived as expected by mainstream society; a₁ = slope along the line of congruence; a₂ = curvature along the line of congruence; a₃ = slope along the line of discrepancy; a₄ = curvature along the line of discrepancy.

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

Table 5

Actual/Ethnic-Normative Ethnic Culture Orientation Discrepancy as a Correlate of Depression, Subjective Satisfaction, and General Belongingness

Variable	Depression β (SE)	Subjective Satisfaction β (SE)	General Belongingness β (SE)
Actual ethnic culture orientation	-.16 (.08)*	.14 (.08)	.16 (.08)
Ethnic-normative ethnic culture orientation	-.09 (.08)	-.07 (.09)	.04 (.08)
Actual squared	-.07 (.06)	.04 (.06)	.07 (.06)
Actual \times Ethnic-normative	.13 (.08)	-.05 (.09)	-.04 (.08)
Ethnic-normative squared	.19 (.09)*	.05 (.09)	-.02 (.09)
R^2	.037	.015	.029
Surface Values			
a ₁	-.11 (.03)**	.07 (.09)	.15 (.06)*
a ₂	.05 (.03)	.02(.06)	.01 (.05)
a ₃	-.03 (.07)	.20 (.13)	.09 (.11)
a ₄	-.01 (.03)	.06 (.06)	.04 (.05)

Note. Actual ethnic culture orientation = actual ethnic culture participation and adoption one currently have; ethnic-normative ethnic culture orientation = ethnic culture participation and adoption perceived as expected by one's ethnic community; a₁ = slope along the line of congruence; a₂ = curvature along the line of congruence; a₃ = slope along the line of discrepancy; a₄ = curvature along the line of discrepancy. * $p < .05$, ** $p < .01$.

Table 6

Actual/Ideal U.S. Mainstream Culture Orientation Discrepancy as a Correlate of Depression, Subjective Satisfaction, and General Belongingness

Variable	Depression β (SE)	Subjective Satisfaction β (SE)	General Belongingness β (SE)
Actual U.S. culture orientation	-.09 (.10)	.11 (.11)	.28 (.10)**
Ideal U.S. culture orientation	.18 (.09)	-.15 (.09)	-.10 (.09)
Actual squared	-.40 (.14)**	.31 (.14)*	.39 (.13)
Actual \times Ideal	.17 (.12)	-.03 (.13)	-.27 (.12)*
Ideal squared	.23 (.09)**	-.16 (.09)	-.11 (.09)
R^2	.031	.038	.060*
Surface Values			
a ₁	.04 (.05)	-.03 (.11)	.14 (.08)
a ₂	.00 (.04)	.05 (.04)	.01 (.03)
a ₃	-.13 (.08)	.25 (.17)	.31 (.13)*
a ₄	.17 (.04)**	.07 (.10)	.19 (.07)**

Note. Actual U.S. culture orientation = actual U.S. mainstream culture participation and adoption one currently have; ideal U.S. culture orientation = U.S. mainstream culture participation and adoption one wish to have in ideal life; a₁ = slope along the line of congruence; a₂ = curvature along the line of congruence; a₃ = slope along the line of discrepancy; a₄ = curvature along the line of discrepancy.

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

Table 7

Actual/Mainstream-Normative U.S. Mainstream Culture Orientation Discrepancy as a Correlate of Depression, Subjective Satisfaction, and General Belongingness

Variable	Depression β (SE)	Subjective Satisfaction β (SE)	General Belongingness β (SE)
Actual U.S. culture orientation	.01 (.10)	-.03 (.10)	.20 (.10)*
Mainstream-normative U.S. culture orientation	-.06 (.08)	.13 (.11)	-.02 (.08)
Actual squared	.04 (.10)	.10 (.10)	-.11 (.10)
Actual \times Mainstream-normative	-.06 (.11)	.02 (.11)	.08 (.10)
Mainstream-normative squared	.09 (.08)	-.01 (.08)	.11 (.08)
R^2	.004	.034	.054*
Surface Values			
a ₁	-.02 (.06)	.09 (.10)	.15 (.09)
a ₂	.01 (.03)	.05 (.02)*	.02 (.05)
a ₃	.03 (.06)	-.14 (.30)	.18 (.11)
a ₄	.04 (.03)	.03 (.09)	-.03 (.05)

Note. Actual U.S. culture orientation = actual U.S. mainstream culture participation and adoption one currently have; mainstream-normative U.S. culture orientation = U.S. mainstream culture participation and adoption perceived as expected by mainstream society; a₁ = slope along the line of congruence; a₂ = curvature along the line of congruence; a₃ = slope along the line of discrepancy; a₄ = curvature along the line of discrepancy.

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

Table 8

Actual/Ethnic-Normative U.S. Mainstream Culture Orientation Discrepancy as a Correlate of Depression, Subjective Satisfaction, and General Belongingness

Variable	Depression β (SE)	Subjective Satisfaction β (SE)	General Belongingness β (SE)
Actual U.S. culture orientation	-.02 (.10)	.01 (.10)	.25 (.09)**
Ethnic-normative U.S. culture orientation	.02 (.09)	.08 (.09)	-.03 (.09)
Actual squared	-.00 (.09)	.11 (.10)	-.06 (.09)
Actual \times Ethnic-normative	-.12 (.09)	.06 (.09)	.14 (.08)
Ethnic-normative squared	.16 (.05)**	.01 (.05)	-.04 (.05)
R^2	.032	.034	.051*
Surface Values			
a ₁	.00 (.04)	.09 (.10)	.18 (.08)*
a ₂	.01 (.03)	.07(.06)	.02 (.05)
a ₃	-.02 (.08)	-.06 (.15)	.23 (.12)
a ₄	.07 (.03)*	.02 (.06)	-.09 (.05)

Note. Actual U.S. culture orientation = actual U.S. mainstream culture participation and adoption one currently have; ethnic-normative U.S. culture orientation = U.S. mainstream culture participation and adoption perceived as expected by one's ethnic community; a₁ = slope along the line of congruence; a₂ = curvature along the line of congruence; a₃ = slope along the line of discrepancy; a₄ = curvature along the line of discrepancy.

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

Table 9*Summary of Psychological Outcomes in Relation to Congruence-Discrepancy of Acculturation Orientations*

		Ethnic Culture Orientation	U.S. Culture Orientation
	<u>Condition of Discrepancy</u>		
Actual/Ideal Planes	Ideal (+) Actual (-) Ideal (-) Actual (+)	Low Life Satisfaction Depression, Low Life Satisfaction	Depression Depression, Belongingness
Actual/Ethnic-Normative Planes	Actual (+) Normative (-) Actual (-) Normative (+)	- -	Depression Depression
Actual/Mainstream-Normative Planes	Actual (+) Normative (-) Actual (-) Normative (+)	- -	- -
	<u>Level of Congruence</u>		
Actual/Ideal Planes	High Congruence Low Congruence	Low Depression, Belongingness -	- -
Actual/Ethnic-Normative Planes	High Congruence Low Congruence	Low Depression, Belongingness -	Belongingness -
Actual/Mainstream-Normative Planes	High Congruence Low Congruence	Belongingness -	Life Satisfaction Life Satisfaction

Note: Actual plane = actual culture participation and adoption one currently have; Ideal plane = ideal culture participation and adoption one ideally would like to have; Ethnic-normative plane = culture participation and adoption perceived as expected by one's ethnic community; Mainstream-normative plane = culture participation and adoption perceived as expected by mainstream society; +/- represents directionality of the discrepancy.

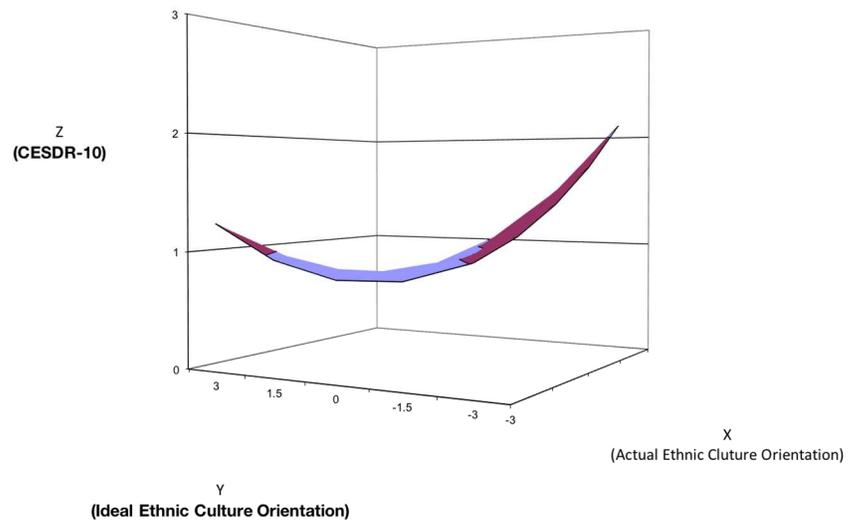


Figure 1. Depressive symptoms (CESDR-10) as predicted by congruence-discrepancy of actual/ideal ethnic culture orientations.

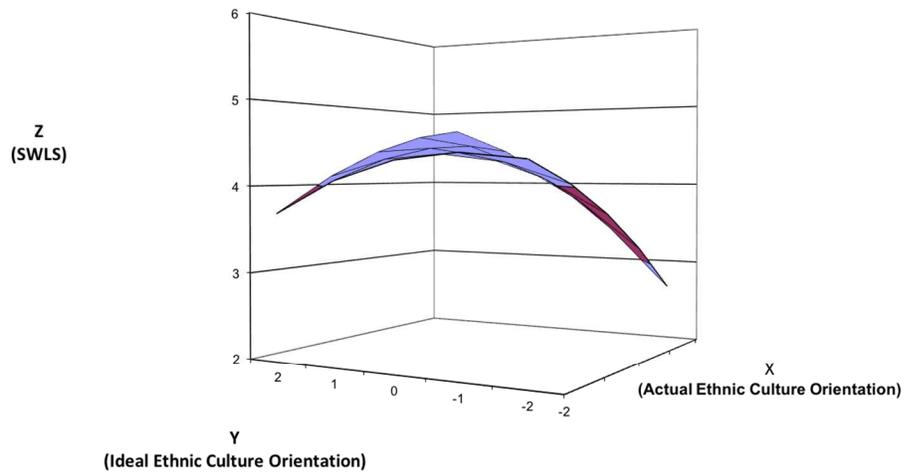


Figure 2. Subjective life (SWLS) satisfaction as predicted by congruence-discrepancy of actual/ideal ethnic culture orientations.

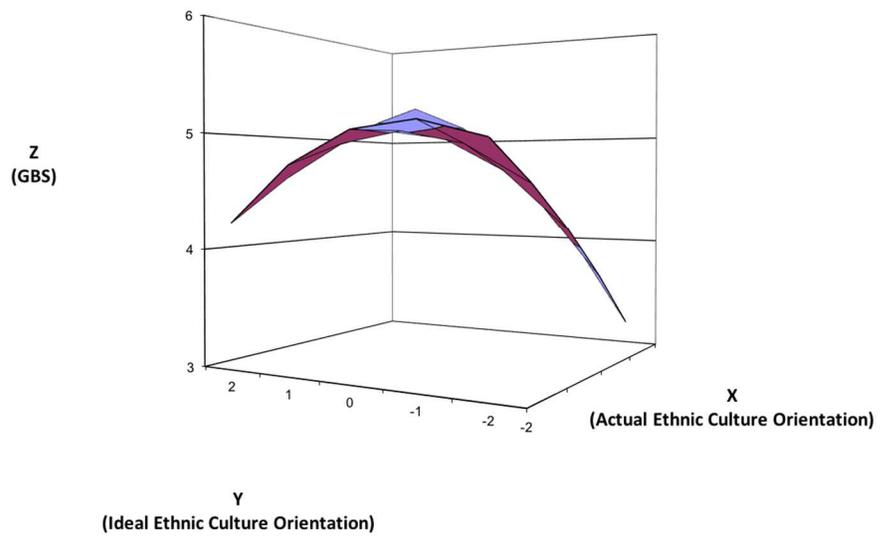


Figure 3. General belongingness (GBS) as predicted by congruence-discrepancy of actual/ideal ethnic culture orientations.

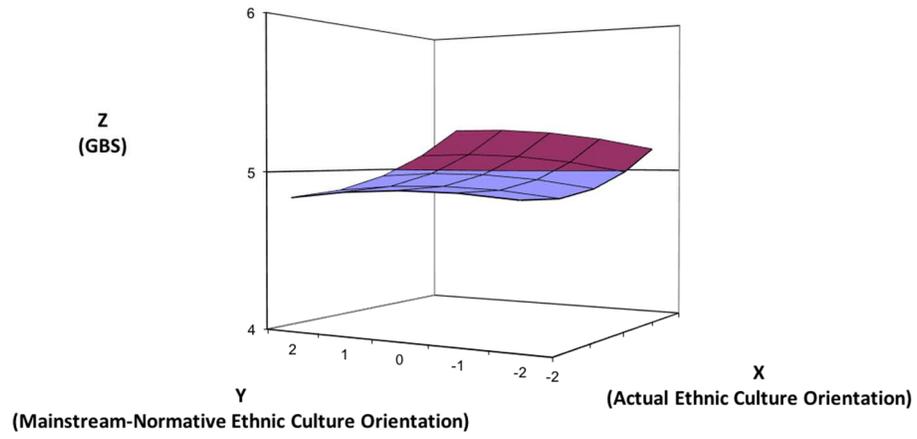


Figure 4. General belongingness (GBS) as predicted by congruence-discrepancy of actual/mainstream-normative ethnic culture orientations.

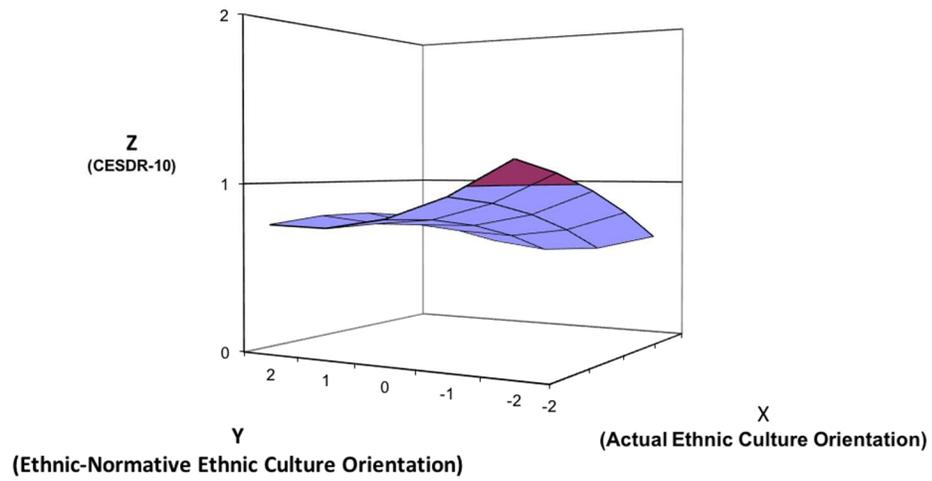


Figure 5. Depressive symptoms (CESDR-10) as predicted by congruence-discrepancy of actual/ethnic-normative ethnic culture orientations.

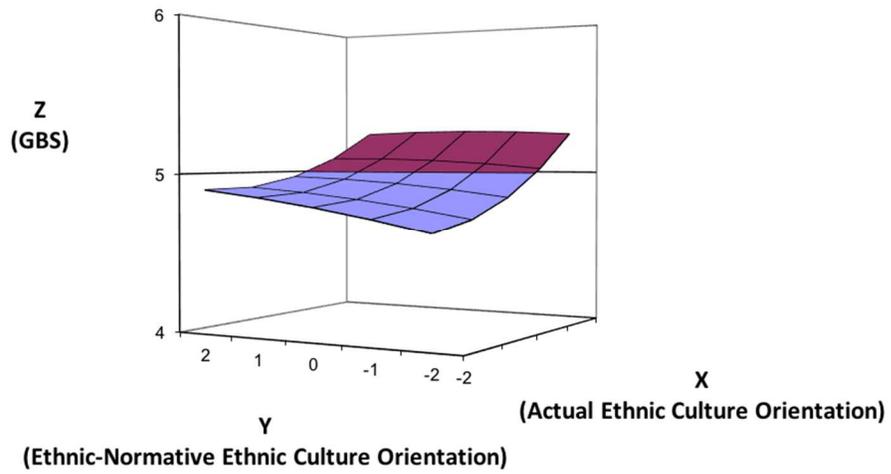


Figure 6. General belongingness (GBS) as predicted by congruence-discrepancy of actual/ethnic-normative ethnic culture orientations.

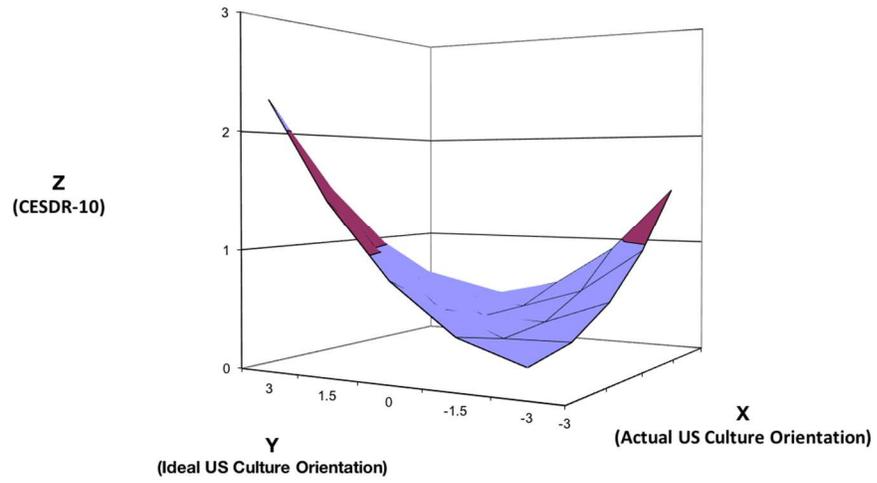


Figure 7. Depressive symptoms (CESDR-10) as predicted by congruence-discrepancy of actual/ideal U.S. culture orientations.

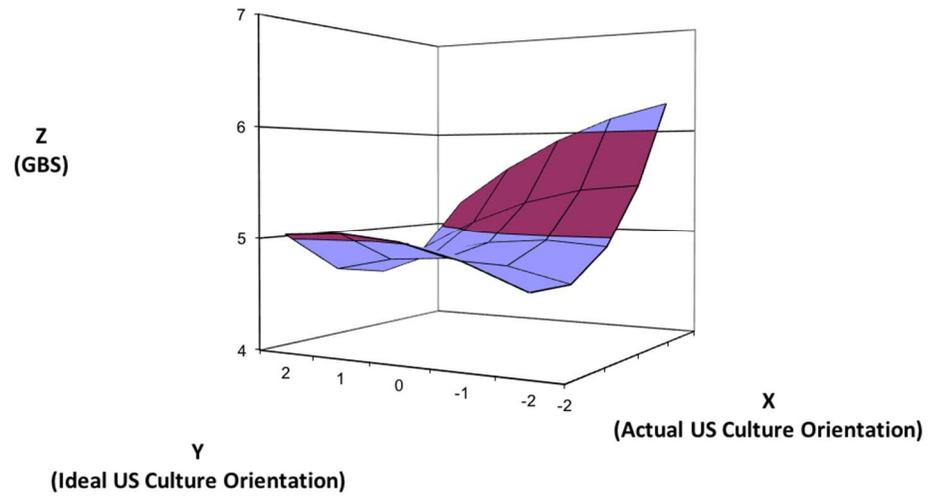


Figure 8. General belongingness (GBS) as predicted by congruence-discrepancy of actual/ideal U.S. culture orientations.

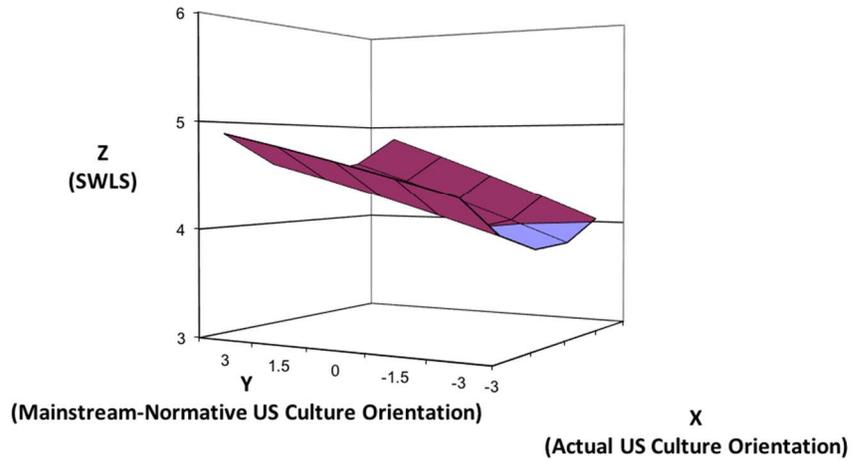


Figure 9.

Subjective life satisfaction (SWLS) as predicted by congruence-discrepancy of actual/mainstream-normative U.S. culture orientations.

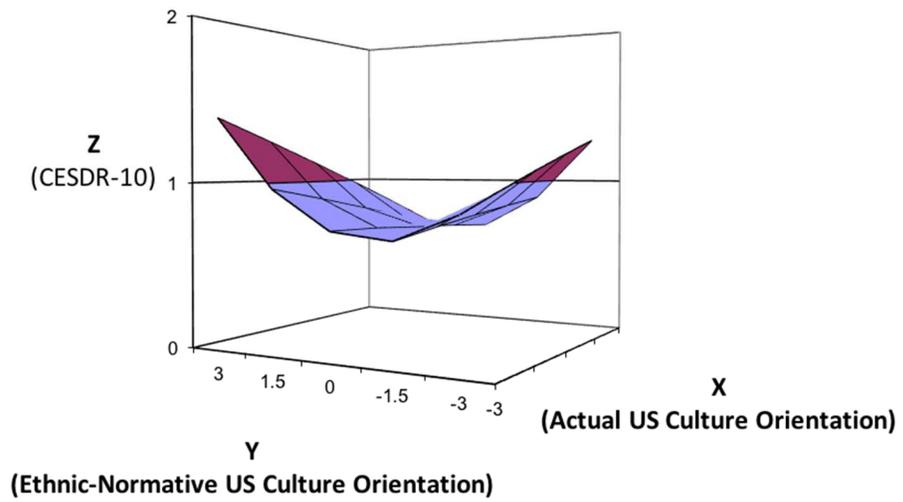


Figure 10. Depressive symptoms (CESDR-10) as predicted by congruence-discrepancy of actual/ethnic-normative U.S. culture orientations.

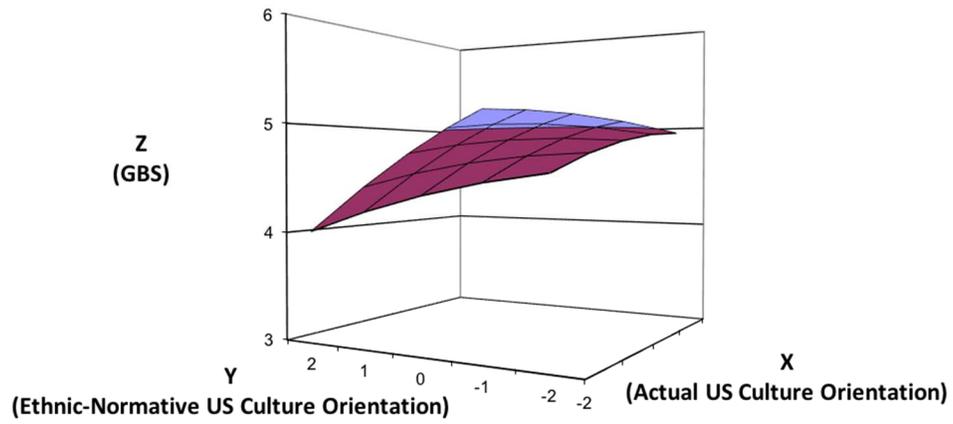


Figure 11.
General belongingness (GBS) as predicted by congruence-discrepancy of actual/ethnic-normative U.S. culture orientations.

Appendix A

The Measure of Ideal and Normative Acculturation (MINA)

The following section contains questions about your ethnic culture, your ethnic racial community, the mainstream U.S. culture, and the mainstream U.S. society. By ethnic culture, we are referring to the culture of the country either you or your family came from. By ethnic community, we are referring to the group of people who you consider to share similar ethnic racial background. By mainstream U.S. culture, we are referring to the dominant culture of the U.S.. By mainstream U.S. society, we are referring to the group of people who you consider to identify with the dominant U.S. culture.

Almost never	Rarely	Occasionally	Sometimes	Frequently	Usually	Almost always
1	2	3	4	5	6	7

1. How much do you participate in **the mainstream U.S. culture** (e.g., interacting with people outside of your ethnic group, watching American TV shows, shopping in American stores, eating American food)?
2. How much do you participate in **your ethnic culture** (e.g., interacting with people from your ethnic group, watching TV shows from your ethnic culture, shopping in Asian stores, eating Asian food)?
3. How much do you adopt values of **the mainstream U.S. culture** (e.g., regarding family structure, dating, career choices, religious beliefs)?
4. How much do you adopt values of **your ethnic culture** (e.g., regarding family structure, dating, career choices, religious beliefs)?
5. In your ideal life, how much do you wish to participate in **the mainstream U.S. culture** (e.g., interacting with people outside of your ethnic group, watching American TV shows, shopping in American stores, eating American food)?
6. In your ideal life, how much do you wish to participate in **your ethnic culture** (e.g., interacting with people from your ethnic group, watching TV shows from your ethnic culture, shopping in Asian stores, eating Asian food)?
7. In your ideal life, how much do you wish to adopt values of **the mainstream U.S. culture** (e.g., regarding family structure, dating, career choices, religious beliefs)?
8. In your ideal life, how much do you wish to adopt values of **your ethnic culture** (e.g., regarding family structure, dating, career choices, religious beliefs)?

9. How much does **mainstream U.S. society** expect you to participate in **the mainstream U.S. culture** (e.g., interacting with people outside of your ethnic group, watching American TV shows, shopping in American stores, eating American food)?
10. How much does **mainstream U.S. society** expect you to participate in **your ethnic culture** (interacting with people from your ethnic group, watching TV shows from your ethnic culture, shopping in Asian stores, eating Asian food)?
11. How much does **mainstream U.S. society** expect you to adopt values of **the mainstream U.S. culture** (e.g., regarding family structure, dating, career choices, religious beliefs)?
12. How much does **mainstream U.S. society** expect you to adopt values of **your ethnic culture** (e.g., regarding family structure, dating, career choices, religious beliefs)?
13. How much does **your ethnic community** expect you to participate in **your ethnic culture** (interacting with people from your ethnic group, watching TV shows from your ethnic culture, shopping in Asian stores, eating Asian food)?
14. How much does **your ethnic community** expect you to participate in **the mainstream U.S. culture** (e.g., interacting with people outside of your ethnic group, watching American TV shows, shopping in American stores, eating American food)?
15. How much does **your ethnic community** expect you to adopt values of **your ethnic culture** (regarding family structure, dating, career choices, religious beliefs)?
16. How much does **your ethnic community** expect you to adopt values of **the mainstream U.S. culture** (e.g., regarding family structure, dating, career choices, religious beliefs)?

Appendix B

Abbreviated Multidimensional Acculturation Scale (AMAS-ZABB)

The following section contains questions about your ethnic culture and your ethnic culture language. By ethnic culture, we are referring to the culture of the country either you or your family came from (e.g., Puerto Rico, Cuba, China). By ethnic culture language, we refer to the language of that country, spoken by you or your family in that country (e.g., Spanish Quechua, Mandarin). If you come from a multicultural family, please choose the culture you relate to the most.

Please mark the number from the scale that best corresponds to your answer.

1	2	3	4
Strongly disagree	Disagree somewhat	Agree somewhat	Strongly agree

1. I think of myself as being U.S. American.
2. I feel good about being U.S. American.
3. Being U.S. American plays an important part in my life.
4. I feel that I am part of U.S. American culture.
5. I have a strong sense of being U.S. American.
6. I am proud of being U.S. American
7. I think of myself as being a member of my ethnic culture.
8. I feel good about being a member of my ethnic culture.
9. Being a member of my ethnic culture plays an important part in my life.
10. I feel that I am part of my ethnic culture.
11. I have a strong sense of being a member of my ethnic culture.
12. I am proud of being a member of my ethnic culture.

Please answer the questions below using the following responses:

1	2	3	4
Not at all	A little	Pretty well	Extremely well

How well do you speak English

13. at school or work
14. with American friends
15. on the phone
16. with strangers
17. in general

How well do you understand English

18. on television or in movies
19. in newspapers and magazines
20. words in songs
21. in general

How well do you speak your ethnic culture language

- 22. with family
- 23. with friends from the same country as you/your family
- 24. on the phone
- 25. with strangers
- 26. in general

How well do you understand your ethnic culture language

- 27. on television or in movies
- 28. in newspapers and magazines
- 29. words in songs
- 30. in general

How well do you know

- 31. American national heroes
- 32. popular American television shows
- 33. popular American newspapers and magazines
- 34. popular American actors and actresses
- 35. American history
- 36. American political leaders

How well do you know

- 37. national heroes from your ethnic culture
- 38. popular television shows in your ethnic culture language
- 39. popular newspapers and magazines in your ethnic culture language
- 40. popular actors and actresses from your ethnic culture
- 41. history of your ethnic culture
- 42. political leaders from your ethnic culture

Appendix C

Center for Epidemiologic Studies Depression Scale-Revised (CESDR-10)

Below is a list of the ways you might have felt or behaved. Please select options that reflect how often you have felt this way in the past week or so.

- | Not at all or
less than 1 day | 1-2 days | 3-4 days | 5-7 days | Nearly every
day for 2
weeks |
|--|----------|----------|----------|------------------------------------|
| 1. My appetite was poor. | | | | |
| 2. My sleep was restless. | | | | |
| 3. I felt sad. | | | | |
| 4. I felt like a bad person. | | | | |
| 5. I lost interest in my usual activities. | | | | |
| 6. I felt like I was moving too slowly. | | | | |
| 7. I wished I were dead. | | | | |
| 8. I was tired all the time. | | | | |
| 9. I could not focus on important things. | | | | |
| 10. I felt irritable. | | | | |

Appendix D

Satisfaction with Life Scale

Below are five statements that you may agree or disagree with. Please be open and honest in your responding.

1	2	3	4	5	6	7
strongly disagree	disagree	slightly disagree	neither agree nor disagree	slightly agree	agree	strongly agree

1. In most ways my life is close to my ideal.
2. The conditions of my life are excellent.
3. I am satisfied with my life.
4. So far I have gotten the important things I want in life.
5. If I could live my life over, I would change almost nothing.

Appendix E

The General Belongingness Scale (GBS) Acceptance/Inclusion Subscale

Below are six statements that you may agree or disagree with

1	2	3	4	5	6	7
strongly disagree	disagree	slightly disagree	neither agree nor disagree	slightly agree	agree	strongly agree

1. When I am with other people, I feel included.
2. I have close bonds with family and friends.
3. I feel accepted by others.
4. I have a sense of belonging.
5. I have a place at the table with others.
6. I feel connected with others.

Appendix F

Demographic Questionnaire

Age:

What is your primary gender identity?

Man

Woman

Other: Fill in the blank

Race and Ethnicity

East Asian/East Asian American: Fill in the blank

South Asian/South Asian American: Fill in the blank

Southeast Asian/Southeast Asian American: Fill in the blank

Native Hawaiian or Pacific Islander: Fill in the blank

Multiracial and/or multiethnic: Fill in the blank

Other: Fill in the blank

What is your citizenship status?

U.S. citizen – born in the United States

U.S. citizen – naturalized

Permanent resident

International (F-1, J-1, H1B, etc.)

Undocumented

Other: Fill in the blank

What best describes the reason that you moved to/currently reside in the U.S.

Temporarily in the U.S. for a set purpose (e.g., school, work, caretaking)

Offspring of an immigrant (e.g., 3rd generation)

I am the first generation in my family to permanently immigrate to the U.S. on involuntary basis (e.g., refugee, asylum seeker)

I am the first generation in my family to permanently immigrate to the U.S. on voluntary basis

Other: fill in the blank

Are you an international student?

Yes: country of origin

No

How long have you been in the U.S. (years)

When did you move to or start to live in the U.S.?

Before my adulthood

After my adulthood

Are you a non-native English speaker?
Yes: what is your first language?
No

Sexual orientation identity
Bisexual
Lesbian
Gay
Uncertain
Heterosexual
Questioning
Queer
Asexual
Other: fill in the blank

Spiritual/Religious Belief System:
Agnostic
Atheist
Buddhist
Christian
Earth Religion
Hindu
Jewish
Muslim
Other (specify):

Please indicate if you have a disability. (Mark none or all that apply.)
Visual
Hearing
Learning
Mobility
Speech
Medical
Psychological
Other (specify)

Appendix G: Comprehensive Literature Review

THE THEORY OF RELATIVE AND INTERACTIVE ACCULTURATION: NEGOTIATION BETWEEN FRAMES OF REFERENCE

The aim of this literature review is to summarize the psychology of acculturation literature to date, critique and integrate recent theoretical and empirical advances, and propose a theoretical extension to conceptualize acculturation as a process of negotiation between different frames of reference (actual, ideal, and normative) rather than a static state that is freely pursued as decisions completely internal to the individual undergoing cultural adjustment. The theoretical extension draws heavily from the social cognitive literature on attitude, motivation and self-evaluation, with the hope to advance the model of acculturation in a way that better captures the essence of this complex psychological experience.

Acculturation: A Bilinear Multidimensional Construct

The classical concept and definition of acculturation was presented by anthropologists Redfield, Linton, and Herskovits (1936, p.149):

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 culture patterns of either or both groups. In this definition, acculturation is conceptualized as group-level changes resulting from intercultural contact that can take place in both the dominant and the non-dominant groups. Cross-cultural psychologists took this construct, and have investigated the long-term psychological consequences of acculturation at the

individual level. Berry (2005) defined the psychology of acculturation as “a process of cultural and psychological changes that involve various forms of mutual accommodation” (p. 699). Although psychological changes such as values, identity, attitudes and behaviors can happen to members of both cultural groups in contact, the majority of the psychology of acculturation literature has focused on the process of change among non-dominant cultural group members.

Much of the current understanding of the psychological acculturation construct has developed on the basis of Berry’s theory. Berry’s (1980; 1990; 1997; 2005) bilinear acculturation model represents a conceptual advance over the unilinear model, and has offered the theoretical grounding for recent acculturation research. The unilinear model of acculturation places individuals on a continuum of acculturating strategies ranging from identifying exclusively with the heritage culture (culture of origin) to exclusively with the host culture (new mainstream culture). It assumes that acquiring the mainstream culture identity accompanies distancing from one’s heritage culture identity. Berry (1997) argues that a unilinear conceptualization insufficiently captures the complexity and variety of acculturation strategies people employ, as it is ambiguous if a middle point on the scale would represent preferences and behaviors that are half-and-half of each culture, or of neither culture. According to Berry’s bilinear model of acculturation, individuals in non-dominant groups employ different strategies in their daily encounters with respect to two major issues: *cultural maintenance*, or the extent to which they prefer to maintain their heritage culture and identity, and *contact and participation*, or the extent to which they prefer to have contact with and participate in the new cultural context with other

ethnocultural groups. Berry's model also categorizes people's acculturation preferences into one of four acculturation strategies. *Assimilation* occurs when individuals from the non-dominant group do not wish to maintain their heritage cultural identity and prefer to seek daily interaction with those in the new cultural context. In contrast, when individuals prefer to maintain their heritage culture identity and at the same time wish to avoid interaction with other cultural groups, the *separation* alternative is defined. The *integration* strategy is termed when individuals are interested in both maintaining their heritage culture and seeking interactions with other groups. Finally, when there is little interest in neither heritage cultural maintenance nor having relations with other cultural groups, individuals are termed to employ the *marginalization* strategy.

Researchers have critiqued the typological (i.e., four strategies) operationalization of acculturation due to conceptual and methodological issues. From a methodological perspective, the vagueness and ambiguity in analyzing midpoint or medium scores and transferring a bilinear measure to the four acculturation strategies is a major disadvantage (Arends-Tóth, van de Vijver, & Portinga, 2006). Using sample-based midpoint split, *assimilation* in a specific sample may be characterized by either high levels of mainstream culture participation or low levels of heritage culture maintenance, which can cause scale dependence and give rise to moderate levels of correlation among acculturation strategy categories that are theorized to be essentially orthogonal (Rudmin, 2003). Similarly, when *marginalization* is calculated as low levels of heritage culture maintenance and mainstream culture participation, it is mathematically equivalent to low levels of

integration, and thus unclear whether *marginalization* and *integration* represent unique underlying acculturation strategies (Rudmin, 2003, 2009; Nguyen & Benet-Martínez, 2013). When the four acculturation strategies are directly assessed using a four-statement measure, instruments tend to have lengthy and double-barreled items (Rudmin & Ahmadzadeh, 2001). From a conceptual perspective, it is counterintuitive that individuals would freely choose an outcome of *marginalization*. As a result, some researchers suggest that the construct underlying *marginalization* should be more appropriately understood as alienation (Berry, Kim, Power, Young, & Bujaki, 1989), or the manifestation of high levels of acculturative stress (Rudmin, 2003). These conceptual and methodological issues with the typological operationalization likely contribute to the mixed and inconclusive findings in the literature. Some findings suggest that fourfold typological acculturation measures lack predictive power for mental health outcomes (for a review, see Rudmin, 2003), whereas others suggest that *integration*/biculturalism predicts the best adjustment outcomes (for a review, see Nguyen & Benet-Martínez, 2013).

One major advance in the acculturation literature is uncovering the variability of acculturation preferences and practices across life domains and social contexts, which adds dimensionality to the bilinear conceptualization. Domain-specific acculturation models posit that rather than adopting an omnibus acculturation strategy, individuals often use different acculturation strategies depending on context. Researchers have categorized these life domains into behaviors and values (Kim, Atkinson, & Yang, 1999; Miller, 2010; Miller et al., 2013), behaviors, cultural identity, knowledge, and values (Kim & Abreu, 2001), practices, values and

identification (Schwartz et al., 2010), and peripheral and central life domains (Navas, Rojas, García, & Pumares, 2007).

Kim and colleagues (Kim et al., 1999, 2001; Kim & Hong, 2004) developed and validated the Asian Values Scale (AVS; AVS-R) to distinguish behavior-focused and value-focused measurement of acculturation. They found in an Asian American college student sample that values acculturation occurred more slowly than behavioral acculturation, as evidenced by non-significant differences in AVS across generation statuses, but significant differences across generation for behavioral acculturation scores. Researchers have since found that values acculturation predicts psychotherapy process and outcomes. For example, Asian values predict less willingness to see a counselor (Kim & Omizo, 2003), after controlling for previous counseling experience and Euro-American values (Kim, 2007). Asian American clients who scored higher on the AVS rated their Asian American counselors as more empathic (Kim & Atkinson, 2002).

Evidence overall suggests that many people choose to approach acculturation related choices differently in across life domains (Tsai et al., 2000; Lee et al., 2006). For example, Miller and colleagues (2013) found that 67% to 72% of the Asian American college students in two independent samples employed different acculturation strategies in behaviors and values. This means that an individual may use the *separation* strategy within the value domain (e.g., endorsing Asian values for family relations), yet use the *assimilation* strategy in the behavioral domain (e.g., preference to speak English at home). In a sample of African immigrants in Spain, Navas and colleagues (2007) found that immigrants preferred *assimilation* in the

peripheral domains such as work and consume habits, *integration* in the social domain (e.g., social relations and friendships), and *separation* for the central spheres of the culture, such as family relations, religious beliefs, and ways of thinking. Confirmatory factor analyses comparing a general and domain-specific measurement model provided further support for acculturation as a domain-specific process. Miller (2010) found that the four-factor (i.e., Asian values, Asian behaviors, Western values, Western behaviors) bilinear bi-dimensional model explained more variance in both 1st and 2nd generation Asian Americans' acculturation strategies than the two-factor bilinear unidimensional model (i.e., Asian culture, Western culture). Arends-Tóth and van de Vijver (2007) tested the one- (i.e., unilinear), two- (i.e., bilinear) and four-statement (i.e., typological) methods of assessing acculturation. Their conclusion favored a two-statement model assessing both private and public life domains.

Another line of research that supports a domain-specific model of acculturation has found that different conceptualizations of acculturation can impact the classification of individuals' acculturation strategies. In two samples of ethnic minority members in Belgium, for example, the distribution of acculturation strategies varied substantially depending on whether the mainstream culture orientation was termed "host culture contact" or "host culture identification" (Snauwaert, Soenens, Vanbeselaere, & Boen, 2003). *Integration* was the most popular orientation using the contact conceptualization, but *separation* was the most popular orientation using the identification conceptualization. Similarly, Berry and Sabatier (2011) found in a sample of second-generation immigrants in Canada and France that participants had the highest preference for *integration* when using the

contact conceptualization, whereas *integration* was an intermediate preference when defined as host culture adaptation and the lowest preference when defined as host culture identity. Similar findings were found for minority immigrants in New Zealand (Ward & Kus, 2012). These findings suggest that immigrants and ethnic minority individuals were less inclined to identify with or adopt parts of the mainstream culture (i.e., private identification with culture) than to have good and regular interactions in the mainstream culture (i.e., public performance of culture).

In all, mounting evidence suggests that the complexity of acculturation is better operationalized as a bilinear and multidimensional construct. Findings suggest that the simplest classification of the multidimensionality while still retaining complexity and meaningfulness is to differentiate between public and private life domains. This classification corresponds well to the nature of contexts (e.g., public spaces such as workplace and school versus private spaces such as home, religious practices and identity) in which acculturation related decisions were made. It is important to note that private and public dimensions do not fully match the classification of values and behaviors. In fact, individuals often switch between culturally ingrained systems of behaviors across different contexts to conform to internalized norms or create a desired social impression (Molinsky, 2007), so behaviors can be from both private and public life domains. The public-private classification closely corresponds to the conceptualization of peripheral and central life domains by Navas and colleagues (2007), where the peripheral domain include political, work and economic areas, and the central domain include religious beliefs, customs, and ways of thinking. In other words, the public life domains are the

performance and expression of culture in public spaces, such as language use, food, shopping, political involvement, and social relationships at workplace and school.

The private life domains are the valuing and integration of culture in private spaces, such as ways of thinking, religious beliefs, identity, and family relations. However, the words “peripheral” and “central” can imply both the level of privacy and the degree of importance, with the latter not intended. As a result, I recommend the public-private classification as the basis for capturing multidimensionality.

Assessment of Acculturation

The evolving conceptualization of acculturation closely relates to the issue of assessment. The measurement of acculturation typically involves multi-item Likert-type scales that use a one-statement (i.e., unilinear), two-statement (i.e., bilinear), or four-statement (i.e., typological) format to capture either general acculturation or acculturation in one or multiple life domains. As mounting evidence supports a bilinear multidimensional conceptualization of acculturation, the measurement continues to lag behind, largely due to the difficulty to adequately capture life domains while maintaining sound psychometric properties and appropriate scale length. Existing bilinear multidimensional measures of acculturation vary in their inclusion of dimensions such as behaviors (e.g., friendship choice, food, language), cultural identity (e.g., self-identification), cultural knowledge (e.g., history, cultural events), and values (e.g., beliefs about customs and traditions; Arends-Tóth & van de Vijver, 2006; Zea, Asner-Self, Birman, & Buki, 2003). Zhang and Moradi (2013) used exploratory factor analysis (EFA) to evaluate the dimensions of Asian American acculturation as assessed by existing measures. Results suggest a three-factor

structure for heritage culture and mainstream culture orientations along behavior, knowledge, and cultural identity dimensions. In addition, values acculturation was largely orthogonal to the aforementioned three dimensions of acculturation, as evidenced by the small magnitude of correlations. However, when multiple dimensions are included, the number of items assessing each dimension is often not balanced, and the items are often not scored on multiple dimensions but yield only a total score (e.g., the Asian American Multidimensional Acculturation Scale, Gim Chung et al., 2004; the Stephenson Multigroup Acculturation Scale, Stephenson, 2000).

Single-item measures are often used as proxies of acculturation, such as English proficiency, nativity, generational status, and length of stay (Zane & Mak, 2003). Such single-item measures reflect a unilinear unidimensional conceptualization of acculturation, where greater English proficiency, U.S.-born status, and longer years in the U.S. represent greater exposure to the mainstream culture. The *immigrant risk hypothesis* suggests that immigration experiences play an important role in mental health, such that foreign-born immigrants will be at higher risk of developing mental health problems and that the risk would decrease as immigrants are exposed to the mainstream culture. Contrary to this hypothesis, epidemiological studies have found that U.S.-born Hispanic (Dey & Lucas, 2006), Latinx (Alegría et al., 2008), and Asian Americans (Takeuchi et al., 2007) had higher rates of psychological disorders and substance use compared to their foreign-born counterparts. U.S.-born Mexicans showed worse biological risk profile than foreign-born Mexicans, which was not accounted for by other acculturation measures

including English use, social integration, and Mexican cultural knowledge (Peek et al., 2010). English competency or preference, on the other hand, has been identified as protective factors against acquired depressive disorders for immigrants (Szaflarski et al., 2016). Alegría et al. (2008) termed this set of conflicting findings *immigrant paradox*. Leong, Park, and Kalibatseva (2013) argued that relying on demographic variables strips acculturation and immigration of their psychological meaning and mechanisms, which may explain the paradoxical findings.

The Process of Acculturation Beyond Static Outcomes: The Theory of Planned Behaviors

It is clear that there is a need to move beyond and further develop Berry's acculturation framework to explore the nuance and variances of human psychology in relation to contextual changes. Static measures of acculturation as attitudes and behaviors inadequately capture the dynamic process of acculturation and its variability in different contexts. In the social psychology literature, an abundance of research attempts to explain why attitudes often do not predict corresponding behaviors due to other psychological processes and environmental influences.

The Theory of Planned Behavior (Ajzen, 1988, 1991) posits that general attitudes often lack predicative validity for specific behaviors because their influence is attenuated by people's intention, subjective norm, and perceived behavioral control. People's intention to perform a given behavior captures the motivational factors that indicate how hard people are willing to try. In general, stronger intention leads to higher likelihood of performance. This process is supported by strong correlations between previously expressed intentions and actual behaviors in both lab and naturalistic studies (e.g., voting behaviors) when the behaviors pose no serious

issues of control. Perceived behavior control refers to people's perception of the ease or difficulty of performing the task at hand. When the behavior is not under volitional control, people's behavior is also predicted by the non-motivational factors, such as available opportunities and resources. Thus, intentions would be expected to influence performance to the extent that people perceive to have behavioral control. Lastly, subjective norm is a social factor that refers to the perceived social pressure to perform or not perform the behavior. Less favorable normative beliefs are theorized to lead to weaker intention and attenuate the relationship between attitudes and behaviors.

The Theory of Planned Behavior offers a useful framework to organize and advance the conceptualization of acculturation. According to this theory, the discrepancy between acculturation attitudes and behaviors can be explained by perceived normative pressures and control beliefs. I propose that subjective norm and control beliefs are two individual level factors that are closely related to the acculturation context. Subjective acculturative norm refers to individuals' perceived expectations regarding how they should go about acculturation. Because migrating individuals constantly navigate cultural differences in their heritage culture and the mainstream culture, it is likely that they perceive normative pressures from both their ethnic-racial community and the mainstream society. Control beliefs refer to individuals' perceived difficulty to carry out their preferred acculturation strategy. Consistent with the Theory of Planned Behaviors, control beliefs regarding acculturation can be operationalized as bicultural self-efficacy. It is expected that the lower the perceived volition of acculturation options, the greater the discrepancy

between acculturation attitudes and behaviors. I discuss in the following sections how the existing bilinear multidimensional conceptualization of acculturation can be extended using the Theory of Planned Behavior.

Acculturation on Ideal and Actual Planes

Even though scholars agree that acculturation entails changes due to intercultural contact (Berry, 1990), it is less clear what these changes actually are. In Berry's (1997) original conceptual framework of acculturation strategies, he theorized that acculturation strategies can be responded to on the attitudinal level as preferences. Although Berry theorized that individuals' acculturation is influenced by the acculturation context, and thus is often not freely chosen and successfully pursued by non-dominant groups, his original conceptualization assumed complete correspondence between attitudes and behaviors.

One consistent finding in the literature using attitudinal measures is that immigrant groups overall hold the highest preference for "integration" (Montreuil & Bourhis, 2001; Rudmin, 2003). These findings contradict Berry's original conceptualization of acculturation strategies, which hypothesized that "integration" as a strategy can only be pursued in a receiving society with widespread acceptance to cultural diversity and multiculturalism (Berry, 1997, 2005). In his 2005 article, Berry stated that acculturation attitudes and behaviors should be "kept distinct, both conceptually and empirically, since there is not usually a complete correspondence between them" (p. 704). In his 2006 chapter, Berry further distinguished attitudes and behaviors as two components of acculturation, because "there is rarely a one-to-one

match between what an individual prefers and seeks and what one is actually able to do.” (p. 33)

Navas et al.’s (2007) Relative Acculturation Extended Model theoretically differentiates between acculturation behaviors and attitudes. The model posits that acculturation attitudes exist on the ideal plane and refer to those options that the immigrants would use if they could choose, whereas acculturation behaviors exist on the real plane and involve acculturation options immigrants have put into practice. The discrepancy between ideal and actual acculturation is theorized to be caused by a range of factors that condition immigrant preferences, such as individual (e.g., age, sex, time in the host country), psychosocial (e.g., intergroup contact, perceived similarity, mutual prejudice), or group/context (e.g., political context, cultural distance).

Research has offered initial support for the importance to examine the congruence-discrepancy between ideal and actual acculturation. Using a measurement equivalence approach, Arends-Tóth and colleagues (2006) examined the congruence of acculturation attitudes and behaviors in three samples of Turkish-Dutch adults. They found that although there was overall structural equivalence, which implied that acculturation attitudes and behaviors can be conceptualized using a single underlying construct, metric and scalar equivalence varied much depending on life domains (public versus private), measurement methods (one-statement versus two-statement), and response scales (identical versus different response scales). They concluded that the attitude-behavior correspondence is higher in the private domain than in the public domain, and that the mean scores of attitudes and behaviors can be

substantially different. In a sample of 1523 first-generation African descent immigrants in Spain, Navas et al. (2007) found that participants on average desired *integration* in their public social relations and work domains, but felt like their mainstream culture participation was underachieved in reality.

Acculturation on Ethnic and Mainstream Normative Planes

Another assumption in acculturation research is that acculturation attitudes and behaviors reflect personal preferences. This assumption, however, does not appropriately reflect the complex relationships that may exist among individuals and groups undergoing acculturation. Riemer, Shavitt, Koo and Markus (2014) argued that the theorizing of attitudes as internal to the person primarily reflects Western philosophical views. They proposed an additional normative-contextual model of attitudes to account for normative and contextual processes that can also drive behaviors. Normative pressures can be fundamental in shaping and reshaping attitudes, with more pronounced influence among individuals who grew up in more collectivistic and interdependent cultural contexts (Cohen & Gunz, 2002; Pyke & Dang, 2003).

Acculturation in the U.S. happens in a racialized society where differences in power, access and status are associated with racial/ethnic group membership. Accumulating evidence sheds light on the normative influences on acculturation and ethnic identity development. For example, second generation Korean and Vietnamese Americans reported using terms such as “FOB” and “whitewashed” to describe their Asian peers as either “too ethnic” or “too assimilated” while casting those at the bicultural middle as the “normals” (Pyke & Dang, 2003). They repeatedly invoked a

monolithic image of the “Normal American Family” as an interpretive framework in giving meaning to their own family life (Pyke, 2000). Adolescents from East Asian immigrant families discussed the cultural split they experienced between their ethnic community versus society in general (Yoon et al., 2017). They often received strong ethnic socialization messages from their family and ethnic community, while experiencing hurtful racial discrimination and feeling the need to not conform to stereotypical portrayals of Asians in mainstream society. These findings suggest that the meaning of one’s ethnic identity is often constructed under normative beliefs of acculturation related values and behaviors as “ethnic” or “American” (e.g., social relationships, clothing, familial roles, food choices, language), and individuals likely differ in their perceptions of the compatibility and tension between these normative expectations.

Normative acculturation related messages can come from both one’s ethnic-racial community and the mainstream society. One’s family and ethnic-racial community often play an important role in transmitting cultural values, history and practices (Ward, Fox, Wilson, Stuart, & Kus, 2009), but little research has examined acculturation on the heritage culture normative plane. The line of research on ethnic-racial socialization has found that racial ethnic minority parents often transmit information, values, and perspectives about ethnicity and race to children to foster cultural pride and prepare them for discrimination (for a review, see Hughes et al., 2006). For example, African American (Thomas & Speight, 1999) and Latinx American (Hughes, 2003; Romero, Cuéllar, & Roberts, 2000) parents who had stronger attachment to their ethnic group were more likely to emphasize cultural

socialization with their children. Ethnic-racial socialization in turn robustly predicts youths' ethnic identity across age groups, including knowledge about one's cultural traditions and positive attitudes toward ingroup members and ethnic cultural behaviors (Hughes et al., 2006). It is likely that normative attitudes about acculturation (i.e., how one's ethnic community expects one to go about acculturation) form in the ethnic-racial socialization process, such as through conversations about the family's history and cultural heritage, participation in cultural settings and events, and interaction in social relationships. Kunst and Sam (2013) found that perceived ethnic peer group's expectations about acculturation is related with ethnic minority individuals' acculturation preferences. Specifically, perceived ethnic peers' *separation* expectations predicted one's higher preference for *separation*, lower preference for *integration*, and higher preference for *assimilation* for Muslim youths in German, France, and Britain.

Although ethnic-racial socialization is mostly theorized as a protective factor for racial ethnic minority youth development, research suggests that racial ethnic minority and immigrant families also experience acculturation related challenges, such as pressure on traditional gender and familial roles and heightened levels of intergenerational conflict (Ward et al., 2009). Lui's (2015) meta-analytic review concluded that parent-offspring acculturation mismatch in Asian and Latinx families poses acculturative stress and contributes to intergenerational conflict, which in turn predicts offspring's negative mental health outcomes. One possibility is that the extent to which one's racial-ethnic community is perceived as a source of support and/or conflict depends on the degree of congruence-discrepancy between practices

on the individual plane and expectations on the ethnic normative plane, such that higher discrepancy would be associated with heightened relationship tension and negative mental health outcomes.

The dominant groups and mainstream society may communicate and enact normative messages about acculturation through interpersonal (e.g., inclusion, discrimination, microaggression) and structural ways (e.g., policy, political environment). The Interactive Acculturation Model (Bourhis et al., 1997) highlights the interactive nature of immigrants and host society relations in influencing acculturation. It is theorized that immigrants and dominant group members can adopt different acculturation orientations (i.e., attitudes and preferences with regard to how immigrants should acculturate). It is posited that intergroup relationships can range from consensual to conflictual depending on the level of attitude concordance between the immigrant and the dominant groups. Studies on different ethnic minority groups in Israel (Bourhis & Dayan, 2004), Germany (Kunst & Sam, 2013; Piontkowski, Rohmann, & Florack, 2002; Zick, Wagner, Dick, & Petzel, 2001), Spain (Navas et al., 2007), France (Kunst & Sam, 2013; Maisonneuve & Testé, 2007) and England (Kunst & Sam, 2013) have shown that acculturation preferences of minority and dominant groups often do not match. Furthermore, dominant group members' ideologies of *assimilation* and *separation* have been found to relate to perceived threat (Piontkowski et al., 2002), prejudicial beliefs and behaviors (Zick et al., 2001), and less favorable attitudes toward diversity (Bourhis & Dayan, 2004).

Ethnic minority individuals form perceptions of dominant group normative acculturation expectations (i.e., how the dominant group expects one to go about

acculturation). Kunst and Sam (2013) hypothesized that ethnic minority individuals may counteract societal *assimilation* expectations by lowering their preference for *integration* and *assimilation* and by increasing their preference for *separation*.

Contrary to their hypothesis, they found that perceived societal *assimilation* expectations has a weak relationship with preferences for *integration* among German-Turks. One explanation is that the interaction between dominant group expectation and individual preference for acculturation is not well represented by a linear relationship. It is important to examine this relationship as the congruence-discrepancy between acculturation on the individual and the mainstream normative planes, and test whether it is associated with mental health outcomes.

Congruence-Discrepancy between Acculturation Planes and Psychological Outcomes

Many psychological theories postulate that self-evaluation processes are associated with vulnerabilities to psychological distress. If the congruence-discrepancy of acculturation between different frames of reference represents a cognitive process of negotiation and compromise when individuals make acculturation related choices, what psychological consequences would it bear? The self-discrepancy theory proposes that inconsistencies in cognitive representations of self result in emotional vulnerabilities (Higgins, 1987; Higgins, Bond, Klein, & Strauman, 1986). According to this theory, there are three domains of self representation (i.e., actual self, ideal self, ought self) from the standpoint of oneself (own) and the standpoint of a normative reference group (other). Although there are a total of six theoretical sets of self representations where a discrepancy can exist, the

ideal-own/actual-own discrepancy and the actual-own/ought-other discrepancy is most often studied and has received the most empirical support.

A discrepancy between one's ideal and actual self represents a cognitive state where the individual's actual attributes do not match the ideal state the individual personally wishes or aspires to attain. The individual is predicted to be vulnerable to negative affect, especially dejection-related emotions such as sadness, disappointment, dissatisfaction, and feelings of failure (Higgins, 1987). A chronic ideal-own/actual-own discrepancy is theorized to predict depression. On the other hand, a discrepancy between one's actual self and ought self as expected by others represents a self-state where the individual's actual attributes do not match the state that the individual believes some significant other person considers to be their duty or obligation to fulfill. The individual is predicted to be vulnerable to negative affect, especially agitation-related emotions, such as feeling threatened, apprehension, fear of punishment, and panic (Higgins, 1987). A chronic actual-own/ought-other discrepancy is theorized to predict anxiety.

A number of correlational and experimental investigations have largely been supportive (e.g., Barnett, Moore, & Harp, 2017; Boldero et al., 2005; Higgins et al., 1986; Scott & O'Hara, 1993; Strauman, 1989; Strauman & Higgins, 1987, 1988). For example, college students with a predominant ideal-own/actual-own discrepancy felt more dejected and wrote more slowly when asked to imagine a negative situation compared to a positive situation, whereas college students with a predominant actual-own/ought-parent discrepancy felt more agitated and wrote faster when asked to imagine a negative situation compared to a positive situation (Higgins et al., 1986).

Participants with clinical depression reported greater ideal-own/actual-own discrepancy, and participants with clinical social phobia reported greater actual-own/ought-other discrepancy (Strauman, 1989). Some studies, however, failed to support the distinctive associations with dejected and agitated affect. Rather, these studies showed that both ideal-own/actual-own and actual-own/ought-other discrepancy non-discriminately predicted negative emotions, including shame (Ozgul, Heubeck, Ward, & Wilkinson, 2003; Tangney, Niedenthal, Covert, & Barlow, 1998), depression (Ozgul et al., 2003; Phillips & Silvia, 2010), and anxiety (Ozgul et al., 2003). Despite these inconsistent findings, the self-state discrepancies consistently emerged as predictors of negative affective states.

The self-discrepancy theory shares much theoretical underpinning with the Relative and Interactive Acculturation Model. The congruence-discrepancy between acculturation on ideal and actual planes parallels the discrepancy between the actual self and the ideal self as viewed by oneself. The greater the discrepancy between perceived ideal and actual acculturation, the more the individual's actual cultural position does not match the ideal cultural position the individual personally wishes or aspires to achieve. Chronic ideal-actual acculturation discrepancies are thus theorized to predict negative emotional state and psychological vulnerability, such as sadness, dissatisfaction, disappointment, and feelings of failure. The congruence-discrepancy between perceived acculturation on actual and normative planes parallels the discrepancy between the actual self as viewed by oneself and the ought self as viewed by a significant other. The greater the discrepancy between perceived actual and normative acculturation, the more the individual's actual cultural position does not

match the cultural position that the individual believes their ethnic racial community and the mainstream culture considers to be their duty or obligation to fulfill. Chronic actual/normative acculturation discrepancies are thus theorized to predict negative emotional state and psychological vulnerability, such as shame, fear, tenseness, and apprehension.

One fundamental difference between the self-discrepancy theory and the Relative and Interactive Acculturation Model is that the meaning of the acculturation related choices are conditioned by a system of power of oppression, whereas the valence of self attributes is not systemically conditioned. As a result, the direction of the discrepancies between acculturation planes (i.e., overachieve and underachieve) is hypothesized to bear psychological consequences. In the U.S., the role of heritage culture transmission often falls on the ethnic racial minority communities, while the pressure to assimilate to the mainstream culture is maintained by differential access to power and privilege associated with the proximity to the White middle-class social location. As a result, although I hypothesize that discrepancies between ideal and actual acculturation in general predict dejected emotions, under-achieved heritage culture orientation in the private domain and under-achieved mainstream culture orientation in the public domain is hypothesized to be especially distressing and dissatisfying. Over-practiced mainstream culture orientation and under-practiced heritage culture orientation one perceives from one's ethnic racial community is hypothesized to be especially distressing, because one's ethnic racial community is often a primary heritage culture educator and transmitter. Over-practiced heritage culture orientation and under-practiced mainstream culture orientation one perceives

from the mainstream culture is hypothesized to be especially distressing, because racism is uniquely associated with *assimilation* ideologies.

In addition to sharing similar conceptual underpinnings with the general cognitive appraisal processes in predicting psychological outcomes, the congruence-discrepancy between acculturation planes is also theorized to relate to psychological outcomes that are specific to the process of acculturation. For example, because the ideal-actual discrepancy is theorized to be due to restricted volitional control, the ideal-actual discrepancy is hypothesized to be related to factors such as bi-cultural self-efficacy, where higher discrepancy is associated with lower self-efficacy beliefs. The discrepancy of perceived acculturation between actual and ethnic normative planes is hypothesized to be related to intergenerational conflict, where higher discrepancy is associated with higher intergenerational tension. The discrepancy of acculturation between actual and mainstream normative planes is hypothesized to be related to experiences of discrimination, where higher discrepancy is associated more experiences of discrimination. The extent to which over-practiced heritage culture orientation and under-practiced mainstream culture orientation on the mainstream normative plane predicts agitation may be moderated by one's racial identity and critical consciousness development. Those who over-practice heritage culture orientation and under-practice mainstream culture orientation because they choose to counteract dominant group assimilation expectations are not expected to experience negative affect.

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