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# Disentangling universal and cultural-specific risks to mental health among Asian Americans: A multi-site longitudinal investigation

Pan Priscilla Lui  
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Disentangling Universal and Cultural-Specific Risks to Mental Health Among Asian Americans: A Multi-Site Longitudinal Investigation

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DISENTANGLING UNIVERSAL AND CULTURE-SPECIFIC RISKS TO  
MENTAL HEALTH AMONG ASIAN AMERICANS: A MULTI-SITE  
LONGITUDINAL INVESTIGATION

A Dissertation

Submitted to the Faculty

of

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by

Pan Priscilla Lui

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## ABSTRACT

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**Objective:** Development-based intergenerational conflict related to separation-individuation is normative and similar across ethnocultural groups. Intergenerational cultural conflict related to acculturation mismatch—where intercultural contact leads parents and offspring to diverge in heritage and mainstream American values and behaviors—is specific to immigrant families. Although development-based conflict does not result in serious psychological distress or behavioral problems among healthy adolescents and emerging adults, acculturation-based conflict has been linked to maladjustment among offspring with immigrant parents in cross-sectional studies. The distinct and potentially mutually influential contributions of these types of conflict have not been evaluated as simultaneous processes unfolding during the developmentally significant transition to college. **Method:** A three-wave longitudinal panel design study examined the trajectories and impact of both development- and acculturation-based intergenerational conflicts on Asian Americans' ( $N = 619$ , 55.44% women,  $M_{age} = 17.98$ ) internalizing and externalizing symptoms. Participants reported their own and parents' acculturation strategies, intergenerational conflicts, personality, and mental health outcomes, at three equally spaced occasions during their first six

months of college. **Results:** Latent growth curve modeling and longitudinal SEM indicated that development-based conflict remained stable over time and was unrelated to internalizing symptoms; however, greater conflict predicted higher externalizing symptom levels. Acculturation-based conflict decreased across measurement occasions, and specific dimensions and domains of underlying parent-offspring mismatch prospectively predicted internalizing problems. Internalizing symptoms also contributed to subsequent intergenerational cultural conflict. **Conclusions:** Developmental and culture-specific family issues both contribute to mental health among Asian American emerging adults, though via different pathways, with distinct implications for internalizing and externalizing symptoms.

## INTRODUCTION

Conflict between parents and their progeny is common, but the circumstances under which it precipitates maladjustment may be particularly important among populations who navigate new, unfamiliar, or even hostile sociocultural environments (Portes & Rumbaut, 2006; Szapocznik & Kurtines, 1993). Development-based intergenerational conflict arises from negotiations of family closeness and offspring independence; acculturation-based intergenerational conflict arises from parent-offspring clashes in fundamental cultural values and behavior (Lui, 2015). These two types of conflict represent different dimensions of family functioning, and differentially affect family cohesion (Kwak, 2003) and adolescent offspring outcomes (Juang, Syed, & Cookston, 2012). Unfortunately, mental health consequences of the complex relationships between family systems and larger cultural contexts have received only limited empirical attention (Szapocznik & Kurtines, 1993). Psychological research on acculturation not only has relied heavily on cross-sectional data, but rarely has explored the consequences of concurrent development- and acculturation-based conflicts. Although one study has examined these two forms of conflict on internalizing symptoms over time with Chinese American adolescents (Juang, Syed, & Cookston, 2012), this type of investigation has not been undertaken during the epoch when individuals typically complete the separation-individuation

process: emerging adulthood. These challenges to family roles and relationships may affect mental health risks and overall psychosocial adjustment, therefore this investigation was aimed to (1) disentangle the change trajectories and impact of development- and acculturation-based intergenerational conflicts among Asian American emerging adults from immigrant families, and (2) identify causal relationships among intergenerational conflicts, parent-offspring acculturation mismatch, and mental health.

### **Ethnocultural Contributors to Mental Health Disparities**

Individuals of ethnic minority backgrounds tend to have higher disease prevalence rates than their Euro American counterparts, likely due to additional or different sets of health and mental health risks (Department of Health and Human Services, 2011). Apart from individual distress, mental health disparities across major ethnic groups in the United States therefore present a serious ethical issue and financial burden for the government that is committed to promote physical and mental health of the whole population (Department of Health and Human Services, 2001). In addition to identifying barriers to seeking and accessing standard help sources (Sue, Zane, Hall, & Berger, 2009), an increasingly sophisticated body of research is documenting how disparities may arise from ethnic minorities' unique experiences, or disproportionate exposure to common risks for distress and psychopathology (Suinn, 2010). Specific aspects of broader ethnic minority experiences like immigration (e.g., immigration goals) and intercultural contact and adaptation (e.g., acculturation; racial discrimination) robustly predict a range of mental health outcomes (Greenblatt & Norman, 1982; Inman, Devdas, Spektor, & Pendse, 2014; Leong, Wagner, & Tata,

1995; Lui & Rollock, 2012; Rollock & Lui, 2015a; Schwartz et al., 2015). These contributors to mental health disparities may be particularly acute among Americans of Asian descent, as they comprise the fastest growing population in the U.S.: the vast majority of these individuals are foreign-born immigrants (first- or 1.5-generations) and native-born second-generations (Pew Research Center, 2013). As these acculturating individuals negotiate the social norms and expectations from the mainstream American and their heritage culture, a systematic approach to examine these issues as potential risks to their mental health functioning is critical.

### **Acculturation and Immigrant Paradox**

Acculturation occurs when individuals from various cultural backgrounds come into contact with each other (Berry, Poortinga, Segall, & Dasen, 2002; Schwartz, Unger, Zamboanga, & Szapocznik, 2010). This process can take place in various settings—which themselves are embedded in multiple contexts and environments—and therefore broadly influences individuals' development and mental health outcomes. Individuals interact with the larger mainstream cultural context (*macrosystem*), but also experience shifts of social influences through other nested networks such as family, friends, neighbors, and school/work environments (microsystems; see Bronfenbrenner, 1977). Successful migration from one cultural context to another requires adopting new roles, identities, and behavioral repertoires consistent with norms in the new environment. Ongoing acculturation can optimize transition, but also can result in psychological distress and psychopathology among immigrants. While acculturation itself may not directly affect mental health outcomes (Yoon, Langrehr, & Ong, 2011), high levels of acculturative stress (particularly worries about deportation, guilt over

leaving the country of origin, and new language difficulty) can predict likelihood of depression diagnosis among Asian immigrants (Leong, Park, & Kalibatseva, 2013). At the same time, parenting and socialization strategies seem to mediate the relationship between acculturation and young offspring's internalizing and externalizing problems (Chen et al., 2014; Santisteban, Coatsworth, Briones, Kurtines, & Szapocznik, 2012). Thus, the juxtaposition of influences from these multiple ecological environments can affect individual functioning in complex ways.

Despite the active challenges to psychosocial adaptation facing first- or 1.5-generation immigrants, research consistently has identified a phenomenon known as the *immigrant paradox*. What is paradoxical is that second-generation individuals (native-born with immigrant parents) are more likely to experience psychological distress and maladjustment than their foreign-born first- or 1.5-generation counterparts (Alegria et al., 2008; Lau et al., 2013), even though foreign-born immigrants encounter cultural transition due to immigration. Unfortunately, factors that place second-generation individuals at greater risk for mental health problems remain understudied. Perhaps individuals across immigration generations differ in the amount and sources of social support, goals, and cultural values and identity, which contribute to their differences in health and mental health outcomes (John, de Castro, Martin, Duran, & Takeuchi, 2012). Particularly, second-generations' unique challenges to simultaneously navigate the American macrosystem and the immigrant family-microsystem during acculturation likely pose greater risks for maladjustment.

Family constitutes a universal unit for socialization in all cultures, but takes on particular significance in collectivistic Asian societies and for immigrants. Empirical

investigations of Asian collectivism typically find “family” at the core of the value system (Chang, Natsuaki, & Chen, 2013; Kim, Li, & Ng, 2005; Kim, Atkinson, & Yang, 1999; Lee & Mock, 2005; Lui & Rollock, 2015). As immigrant group members make systematic adjustments (e.g., in language, behaviors, values, and cultural identification) to new environmental contexts, families can help support or hinder this process (Portes & Rumbaut, 2006). On the positive side, social support from family systems buffers deleterious effects of culture-specific risks (e.g., discrimination, ethnic identity crisis; Mossakowski & Zhang, 2014; Ngo & Le, 2007; Oppedal, Røysamb, & Sam, 2004; Rollock & Lui, 2015a). Family support also has been shown to mediate the relationship between intergenerational conflict and offspring well-being (Yang, Haydon, & Miller, 2013). On the negative side, intergenerational conflict has been shown to precipitate psychological distress and maladjustment among acculturating individuals and families. Likely a more proximal predictor than general family support, intergenerational conflict has been demonstrated to predict greater mental health problems and lower levels of subjective well-being across Asian and Hispanic immigrant populations (Juang, Syed, & Takagi, 2007; Lee, Su, & Yoshida, 2005; Lim, Yeh, Liang, Lau, & McCabe, 2009; see Lui, 2015, for review; Su, Lee, & Vang, 2005).

### **Intergenerational Conflicts: Normative Development or Acculturation Mismatch?**

Empirical investigations of the nature and psychological consequences of intergenerational conflict have proceeded along two paths that have failed to intersect (Juang, Syed, & Cookston, 2012; Juang, Syed, Cookston, Wang, & Kim, 2012; Lui, 2015). First, much research focuses on the typical, universal developmental tasks and struggles associated with the separation-individuation process and normative



generational gaps (e.g., divergent views on gender roles, sexual activities, and racial inequality), described primarily among domestic Euro and African American samples. Second, increasing research focuses on group-specific experiences of acculturation, especially among Asian and Hispanic immigrant samples. Although universal and group-specific experiences are concurrent in all individuals, very few studies have examined separation-individuation and acculturation-related intergenerational conflicts simultaneously within the same investigation with the same sample. Consequently, it remains unclear whether these two types of conflict represent aspects of the same fundamental process that has been studied separately in different ethnocultural groups, whether they add to or interact with each other, and whether they reflect completely distinct mechanisms predicting offspring outcomes. It is possible that negotiating two sets of expectations—from the mainstream society, and from family adhering to the heritage culture—generates stress for individuals with immigrant parents only insofar as they are incompatible. Studies that disentangle these universal and culture-specific family processes will shed light on the immigrant paradox, which then can illuminate points for intervention to reduce mental health disparities.

### **Separation-Individuation**

One type of intergenerational conflict appears to stem from the normative separation-individuation process, during which adolescent and emerging adult offspring explore their self-identity, worldviews, values systems (Arnett, 2000; Hoffman, 1984; Kins, Beyers, & Soenens, 2013). Extrapolating from their experiences within various micro- and macro-systems such as family, peers, school, public media, offspring develop a sense of autonomy and perspective independent from their parents.

Referred to as *developmental conflict* or *everyday conflict* (Juang, Syed, & Cookston, 2012; Juang, Syed, Cookston, et al., 2012), intergenerational conflict due to separation-individuation typically manifests itself in arguments related to behavior such as chores, curfews, friend selection, and time spending playing (Robin & Foster, 1989). More nuanced evidence suggests that both parents and middle-adolescent offspring are more likely to report value and belief differences than behavioral differences, and the interaction between dyadic belief discrepancies and behavioral conflict predict offspring's externalizing problems above and beyond behavioral conflict alone (De Los Reyes et al., 2012), implicating the importance of assessing parent-offspring differences in values as well as behaviors.

The process of separation-individuation may be conceptualized on a continuum of healthy adjustment. On the adaptive side, individuals successfully adopt their own sets of values and attitudes, behavioral repertoires, and identity that may or may not be distinct from their parents', and yet they maintain positive and functional relationships with their family members throughout and beyond this process. Most offspring achieve healthy separation-individuation without negative psychological consequences or significant family turmoil (Koepke & Denissen, 2012). For instance, research with national data in the U.S. and Italy has suggested that parent-offspring relationships tend to improve with the usual transition from adolescence into emerging adulthood, resulting in greater mutuality of perspectives, respect, and open communication (Crocetti & Meeus, 2014). On the maladaptive side, individuals who experience barriers to this developmental task may find themselves angry with and detached from their parents, and increasingly alienated from larger social contexts (Bray, Adams,

Getz, & Baer, 2001; Daniels, 1990; Lopez, Watkins, Manus, & Hunton-Shoup, 1992). Greater levels of conflict in the (unhealthy) separation-individuation process predict more internalizing symptoms related to anxiety, depression, and anger, as well as poor self-efficacy (Lopez et al., 1992). Longitudinal data also have shown that healthy individuation is related to a decrease in mental health problems including alcohol use, but disruptive separation and intergenerational conflict are predictive of an increase in drinking among middle adolescents of Euro, African, Hispanic American backgrounds (Bray et al., 2001). Nonetheless, both the frequency and intensity of this kind of development-based intergenerational conflict decrease by late adolescence in normative, non-clinical populations (Laursen, Coy, & Collins, 1998). These findings collectively suggest that this development-based conflict is likely to be universal in nature and similar in the impact on mental health functioning across U.S. ethnocultural groups.

What remains puzzling is the presence of a robust association between intergenerational conflict and mental health problems in immigrant American populations. Contrary to the findings from research on development-based intergenerational conflict, culture-specific conflict in immigrant families has been shown to relate to negative psychological outcomes, including mental health and educational functioning (Lui, 2015). In particular, this relationship is larger among emerging/young adult than adolescent offspring of Asian and Hispanic backgrounds. This kind of discrepancy may lead to the question: does development-based intergenerational conflict adequately explain family and cultural experiences of individuals of all ethnic and immigrant generational backgrounds?

### **Acculturation Gap Distress**

Acculturation gap-distress theory postulates that individuals with immigrant parents are at the crossroads of mainstream American and heritage cultures, and discrepancies in behaviors or values lead to overt arguments (Portes & Rumbaut, 2006). This theory sometimes is invoked to explain the negative consequences of acculturation-based intergenerational conflict, as distinct from the more benign outcomes of development-based conflict. For example, Euro American society values an individualistic orientation that prioritizes personal uniqueness and success, whereas traditional Asian and Hispanic societies value a collectivistic orientation that prioritizes interpersonal connections and group harmony. Parents and offspring in immigrant families adapt to mainstream host culture from different acculturation rates or standpoints, which sets the stage for intergenerational acculturation mismatch (see Lui, 2015; Portes & Rumbaut, 2006; Szapocznik & Kurtines, 1993). For instance, Asian “immigrant Americans” (those who immigrated to the U.S. with their parents; Baptiste, 1990) are more likely to adopt mainstream American behaviors and values at a faster rate than their foreign-born, immigrant parents who arrive in the U.S. at later ages. From an identity perspective, native-born second-generation Asian Americans with immigrant parents are likely to consider themselves as American ethnic minorities of Asian heritage (i.e., “Americans”) while their parents likely identify as Asian individuals (i.e., “immigrants”; Baptiste, 1990; Lui, 2015).

Offspring from immigrant families, therefore, frequently are challenged to navigate the expectations from the American host culture in the macrosystem, and the heritage culture in the family microsystem. The potential for cultural clashes within

parent-offspring dyads thus poses greater risks for intrapersonal and family distress in this population (Kwak, 2003; Vu & Rook, 2013). Intergenerational conflict, whether due to the universal separation-individuation process alone or combined with other culture-specific issues, may be more problematic in immigrant families than other domestic American ethnic groups (Szapocznik & Kurtines, 1993). For example, face and family honor, collectivism, and filial piety are important Asian values (Kim et al., 1999; Lee & Mock, 2005; Lee, 1999; Park & Kim, 2008; Schwartz, Weisskirch, et al., 2010) that make cultural practices and behavioral norms drastically different from those of the mainstream American culture.

Exploring the impact of acculturation on individual and family distress, several studies have suggested that reduction in family closeness and communication breakdown may lead to offspring mental health problems (Bacio, Mays, & Lau, 2013; Hwang, Wood, & Fujimoto, 2010). While these findings appear to imply that acculturation mismatches, family distances, and closeness are separate and unrelated constructs of acculturative experiences in immigrant families, these studies do not explicitly measure or address intergenerational conflict as contemplated in acculturation gap-distress theory (e.g., Hwang et al., 2010). To represent the precise mechanisms of acculturation-based intergenerational conflict as risk factors for the mental health among offspring in immigrant families, investigations must assess acculturation mismatch and intergenerational conflict as two distinct sets of variables (Lui, 2015).

**Differentiating acculturation mismatch and intergenerational cultural conflict.** Research has begun to explore relationships among dimensions of

culture-specific differences among the generations, including distinguishing implications of the mere presence of parent-offspring acculturation mismatch, from the impact of actual overt cultural conflicts, at least in Asian American families (Tsai-Chae & Nagata, 2008). For example, Juang and colleagues (2007) found that acculturation mismatch in Asian cultural values predicted adolescent offspring's depressive symptoms, which was partially mediated by self-reported level of intergenerational conflict. Acculturative gap-distress theory has postulated that acculturation mismatch alone may not be related to offspring mental health problems; rather, the presence of parent-offspring conflict is a consequence of this mismatch, which in turn is the proximal predictor of mental health functioning. Recent meta-analytic review supports the theory and demonstrates that the correlation between offspring mental health outcomes and intergenerational cultural conflict is larger than that between mental health and acculturation mismatch (Lui, 2015).

**Bidimensional and domain-specific acculturation.** Studies also have yielded inconsistent results on the correlational effect sizes among acculturation mismatch, intergenerational cultural conflict, and mental health due to differential operationalization of dimensions and domains of acculturation, cultural transition, and intercultural contact (Lui, 2015). Most studies used older conceptualizations of the acculturation process that relied on a unidimensional perspective: acculturation to the new mainstream culture is seen as the zero-sum, polar opposite of skill and reference to the heritage culture (Keefe & Padilla, 1987; Schwartz, Unger, et al., 2010; Suinn, 2010). Newer conceptualizations of acculturation, however, improve understanding—and precision of predictions—by framing acculturation to the new mainstream culture

and to the original/heritage culture as two distinct processes, whereby individuals can be seen as adopting practices and values of the host (e.g., American mainstream) culture independently of retaining or rejecting those of the heritage (e.g., traditional Asian) culture (Berry et al., 2002). Understanding acculturation from a bidimensional perspective permits more precise categorization and description of the strategies individuals use to adjust to two sets of cultural expectations (Schwartz, Unger, et al., 2010; Schwartz et al., 2011). Specifically, those with a bicultural orientation are most likely to better adapt to various sociocultural contexts (Carrera & Wei, 2014; David, Okazaki, & Saw, 2009). Examining acculturation mismatch in a unidimensional perspective (esp. parent-offspring differences in their acculturation to the mainstream culture) likely misses opportunities to better contextualize how it yields intergenerational cultural conflict and indirectly affect offspring's psychological functioning. In fact, Hwang et al. (2010) has indicated that research related to acculturation gap-distress theory focused on acculturation to the mainstream American culture, and much limited on acculturation to the heritage culture (i.e., enculturation). Bidimensional assessment of acculturation mismatch therefore would add substantially to explanatory power of the current body of literature.

Existing studies also lack a nuanced view of the areas in which parents and offspring across immigration generations diverge. The importance of examining domains of acculturation in terms of identification, behavioral practices, and values and beliefs (Keefe & Padilla, 1987; Schwartz, Unger, et al., 2010) is two-fold. First, research has suggested that an acculturating individual may approach behavioral, value, and identification acculturation tasks at different speeds (cf. Yoon et al., 2011). For

example, learning and adopting the behaviors consistent with the mainstream American culture (such as listening to American pop music rather than Japanese folk songs, and dating outside of the Asian cultural group) may occur prior to appreciating and internalizing the belief systems. Similarly, acculturation to the heritage culture also may differ by domains. For instance, a second-generation Japanese American individual may learn the practices and skills associated with tea ceremony and *Taiko* drumming, but may take longer to acquire the traditional Japanese cultural values. Second, recent findings have indicated that individuals may prefer to use different acculturation strategies depending on the domains of interest (Miller et al., 2013). For example, bicultural individuals may be more comfortable in shifting their behavioral repertoires across settings while retaining a single ethnic identification and set of cultural values. In the context of acculturation-based intergenerational conflict, value discrepancies and behavioral gaps have been found to differ in the strength of relationship with mental health outcomes (Dennis, Basañez, & Farahmand, 2010; Tsai-Chae & Nagata, 2008). Particularly, parent-offspring value discrepancies are more strongly associated with intergenerational cultural conflict and offspring mental health functioning than behavioral gaps (Lui, 2015). Little research has directly examined parent-offspring differences in identification and its impact on offspring mental health outcomes, however. Nonetheless, these results highlight the value of differentiating domains of acculturation in assessing the nuances in intergenerational mismatches.

### **Intergenerational Conflicts as a Function of Time**

The contributions of investigations on all types of intergenerational conflict has been limited not only by nearly-exclusive use of cross-sectional designs, but also by



focus on adolescents living with their parents or emerging/young adults living independently on college campuses (see Lui, 2015, for summary). The occurrences of any conflict, particularly the breakdown of communication between parents and offspring, have been thought of as more salient and problematic during adolescence (Hwang et al., 2010; Juang, Syed, & Cookston, 2012). Findings from Lui's (2015) meta-analyses, however, have illustrated that acculturation-based intergenerational conflict is more detrimental to mental health outcomes among emerging/young adult offspring than among adolescents. Thus, cross-sectional studies that isolate a narrow developmental period without illuminating how processes of intergenerational relationships and acculturation evolve over time may limit meaningful causal conclusions about their impact on offspring's mental health. Thus it is essential that more longitudinal research focused on better understanding of the role of two types of intergenerational conflict among individuals who are transitioning from adolescence to young adulthood (Hwang et al., 2010; Lui, 2015).

Some prospective studies have begun to suggest that self-reported intergenerational conflict—particularly stemming from acculturation mismatch—is a consequence of offspring's psychological distress, rather than vice versa (Juang, Syed, & Cookston, 2012; Nelson, Bahrassa, Syed, & Lee, 2015). These causal conclusions require more evidence, however. First, the study with emerging adult samples (Nelson et al., 2015) failed to account for possible confounding overlap in the change trajectories of development- and acculturation-based intergenerational conflict during the first four years of college. Cultural dimensions of intergenerational conflict also may have been obscured by failure to examine group pattern differences for a sample

that was 56% of Euro American descent, 28% Asian American descent, and 16% uncritically labeled as “other.” Second, the study with Chinese American samples (Juang et al. 2012) was confined to middle adolescents, limiting generalizability to older individuals. For example, during this developmental epoch, individual offspring and families may pay closer attention to development-based conflict than to acculturation-based conflict, actually expecting normative arguments over developmental tasks and offspring individuation (Lui, 2015); whether these results hold true for older adolescents and emerging adults remain unknown. This is especially problematic as the transition to adulthood has been prolonged with more individuals making specific adjustments to college, and delaying entrance into other aspects of adulthood (Arnett, 2000). Finally, all of the longitudinal studies in this area assessed changes in the mean levels of and predictive relationships among variables on a yearly basis (Juang, Syed, & Cookston, 2012; Juang, Syed, Cookston, et al., 2012; Kim, Chen, Wang, Shen, & Orozco-Lapray, 2013; Nelson et al., 2015). This long interval may not be sensitive enough to capture the immediate, delayed, and reciprocal effects of intergenerational conflict on mental health outcomes, particularly during developmental periods of rapid and significant changes in privileges, societal expectations, and social opportunities. Shorter measurement intervals may be required to capture the many psychosocial adaptations that occur during the transition into emerging adulthood.

### **Influences of Personality Traits**

While the theories that underlie the relationships between development- and acculturation-based intergenerational conflicts and mental health functioning are well

established, little is known about individual differences in their interrelationships. Specifically, how personality traits affect Asian Americans' mental health and acculturation remains understudied (Chang, Chang, & Chu, 2007). Understanding the role of personality in individuals' (mal)adjustment to their larger cultural contexts and family relationship would illuminate how these stable characteristics and responses to various environments affect acculturation gap-distress and separation-individuation processes.

The Five Factor Model is a comprehensive and well-established nomothetic network of basic personality traits that include *neuroticism* (emotional instability and vulnerability to negative affect and stress), *extraversion* (level of activity, proneness to socialize and enjoy positive affect), *openness to experience* (likelihood to explore new values, behaviors, and thoughts), *agreeableness* (personal warmth and interpersonal empathy), and *conscientiousness* (goal-orientation, diligence, and organization) (Costa & McCrae, 1992). Overall, a rich body of research has suggested that personality traits, particularly high levels of neuroticism and low levels of conscientiousness, influence individuals' proneness to experience interpersonal stress and appraise situations as more difficult to deal with (Carver & Connor-Smith, 2009; Widiger, 2011). In turn, high levels of intrapersonal vulnerability to psychological distress may perpetuate interpersonal dysfunctions such as intergenerational conflict, whether this is related to the separation-individuation or acculturation process.

Predictions for other domains of personality may be less clear for these populations under these circumstances. In the context of development-based intergenerational conflict, individuals with greater social anxiety and self-criticism are

more likely to experience dysfunctional separation-individuation (Kins et al., 2013), show increasing levels of this development-based intergenerational conflict during adolescence, and subsequently report greater depression (Castellani et al., 2014). Furthermore, individuals with high level of agreeableness are less likely to experience interpersonal conflict and in turn experience lower level of stress and depressive symptoms (Carver & Connor-Smith, 2009; Castellani et al., 2014). Thus, offspring who are agreeable and open to experience may be more likely to imagine their parents' perspectives and cultural orientation, and thereby reduce overall acculturation mismatch and subsequent intergenerational cultural conflict.

While most investigations on the role of personality on intergenerational conflict and mental health functioning have drawn from ethnic majority adolescent (and some emerging adult) samples in the context of normative, separation-individuation process (Castellani et al., 2014; Werneck, Eder, Yanagida, & Rollett, 2014; Zupančič & Kavčič, 2014), there has not been any systematic examination in the context of acculturation and among Asian Americans in immigrant families. As a result, the current study would explore the impact of personality traits as a covariate of intergenerational conflicts and mental health outcomes.

### **The Present Study**

Four main sets of research questions were examined in the present study. First, are there changes in the two types of intergenerational conflict among Asian Americans during the transition from adolescence into emerging adulthood? If so, what are the forms, strength, and rates of these changes? How do changes differ across development- and acculturation-based intergenerational conflicts? Are there individual

variations in personality associated with the changes of these two types of conflict? Second, does the underlying structure of these latent constructs change over time? Third, how are acculturation mismatch, development- and acculturation-based intergenerational conflicts, and mental health outcomes related to each other across time? Lastly, do development- and acculturation-based intergenerational conflicts predict mental health outcomes over time, in different ways?

A graphical representation of the (cross-sectional) conceptual model guiding the current investigation is shown in Figure 1, in which mental health is considered to be affected by the processes associated with acculturation gap-distress and normative separation-individuation. To distinguish development- and acculturation-based intergenerational conflicts during the transition period from late adolescence into young adulthood, a three-wave longitudinal panel design with two independent cohorts of college freshman students was used. New college students navigating changes in their own identity, values, family relationships, sociocultural contexts during this developmental epoch were optimal to allow disentanglement of intergenerational conflict stemming from the separation-individuation and acculturation processes, as well as the impact of these processes on their mental health statuses. Normative, development-based intergenerational conflict has been shown to decrease in frequency, intensity, and impact on mental health by this time (Laursen et al., 1998), therefore reducing the possible additive or synergistic effects of development- and acculturation-based conflict on one's mental health functioning (Lui, 2015). Students in their first year of college not only begin to leave their shared living environment with parents and live independently on a college campus; they also experience other social influences

that may challenge them to be more acculturated to the American mainstream culture. Previous meta-analytic work (Lui, 2015) and longitudinal studies in adolescent and young adult samples (Choi, He, & Harachi, 2008; Juang, Syed, & Cookston, 2012; Kim et al., 2013; Nelson et al., 2015), suggested the following hypotheses:

1. While development-based intergenerational conflict would maintain stable, acculturation-based intergenerational conflict would show a linear change trajectory over time.
2. There would be significant individual variations in the mean level and change trajectory of acculturation-based intergenerational conflict.
3. Measurement models of acculturation mismatch, intergenerational conflicts, and mental health outcomes can be measured reliably and validly over time, evident by factorial invariance across three measurement occasions.
4. Consistent with developmental psychology literature, development-based intergenerational conflict would not significantly predict mental health outcomes across time.
5. Consistent with acculturation gap-distress theory, parent-offspring acculturation mismatch would predict intergenerational cultural conflict, which in turn would predict mental health outcomes across time.

6. Personality characteristics would affect the level of mental health outcomes and perceived intergenerational conflicts.

## METHOD

### Participants

Two consecutive cohorts<sup>1</sup> of participants were recruited from three large public, predominantly White universities in the suburban Midwest<sup>2</sup>. These universities were targeted specifically because the percentages of major ethnic groups mirrored those in the U.S. as a whole.

The sample consisted of 1.5- and second-generation Asian American college freshman students (total  $N = 619$ ; 55.44% women; baseline  $M_{age} = 17.98$ ,  $SD_{age} = .68$ ). Participants came from diverse Asian backgrounds, with the majority of them reporting East Asian heritage (60.81%; e.g., Chinese, Korean), followed by South (26.99%; e.g., Indian, Sri Lankan) and Southeast Asian heritages (11.54%; e.g., Filipino, Vietnamese). Most participants were born in the U.S. to two immigrant parents of Asian descents (second-generation; 66.83%). The remaining participants moved from their Asian country of origin with both immigrant parents before 10 years (1.5-generation; 28.13%). Smaller percentages of participants with one immigrant parent and one native-born Asian parent were U.S.-born (2.93%) and foreign-born (2.11%). Most

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<sup>1</sup> Cohort 1 ( $n = 237$ ) and Cohort 2 ( $n = 382$ ) did not differ significantly in age, or distribution of gender, Asian ethnicity, or generation status.

<sup>2</sup> Participants from the three universities were extremely consistent across these demographic backgrounds, including age, Asian ethnicity, generation status, living arrangements, and gender ratio of the sample (see Appendix C).



participants were from two-parent households (86.99%) and living away from parents (85.67%). Most participants reported high family annual income (38.76% over \$100,000) and fewest reported low income (7.17% below \$20,000); the remaining were evenly distributed.

### **Measures**

#### **Scale of Ethnic Experience (SEE; Malcarne, Chavira, Fernandez, & Liu, 2006)**

The SEE is a 32-item self-report measure of various aspects of behaviors and identification shared by major American ethnic groups, including Asian Americans from immigrant families. Domains of ethnicity-related experiences assessed were ethnic identity, perceived discrimination, mainstream interethnic comfort, and social affiliation preferences. Participants rated each SEE item in these four areas by indicating both (a) their self-reported experiences and (b) their perception of their parents' experiences on a scale of 1 (*strongly disagree*) to 5 (*strongly agree*). For both self- and perceived-parent ratings, higher mean scores reflected stronger sense of ethnic identification, greater perception of racial discrimination, greater mainstream comfort, and higher preferences to socially associate with same-ethnic groups. Acculturation mismatch in ethnic identity, mainstream comfort, and social affiliation was each measured by absolute difference scores between participants' self-report and perceived parent-report. Greater scores indicated larger parent-offspring gaps in these acculturation domains and all three parent-offspring difference ratings demonstrated adequate internal consistency across time (Cronbach's  $\alpha$ s = .67-.69 for ethnic identity, .76-.78 for mainstream comfort, and .82-.85 for social affiliation). Ethnic identity was used to assess identification with the heritage culture, and mainstream

comfort and social affiliation were used to assess behavioral practices associated with the mainstream and heritage cultures, respectively.

**Horizontal and Vertical Individualism and Collectivism Scale (IND-COL; Singelis, Triandis, Bhawuk, & Gelfand, 1995)**

IND-COL is a 32-item scale assessing values associated with individualism (IND) and collectivism (COL). Each of these two sets of values is further measured on two dimensions: horizontal (social hierarchy where inequalities exist), and vertical (self-view and interpersonal relationships where individuals occupy similar social statuses). Participants rated both their own and their parents' level of individualism and collectivism endorsement on a scale of 1 (*strongly disagree*) to 9 (*strongly agree*). One negative-worded item measuring individualism was reverse coded, so that higher mean scores indicated stronger beliefs in IND and COL, respectively. Acculturation mismatch in these two cultural values was measured by absolute difference scores between self- and perceived parent-reports, with higher scores reflecting greater discrepancies in these cultural values. The IND-COL has been used in Asian American samples (Choi, 2002; Tsai, Knutson, & Fung, 2006) and demonstrated adequate internal consistency in the current parent-offspring difference ratings in each measurement occasion ( $\alpha$ s = .79-.84 for IND and .81-.89 for COL).

**Intergenerational Conflict Inventory (ICI; Chung, 2001)**

The ICI is a 23-item scale that measures intergenerational conflict in issues common in immigrant Asian American families. Participants rated the extent to which they argue with their parents in three content areas (family expectation, education and career, and dating and marriage) on a scale of 1 (*not at all*) to 6 (*all the time*), with

higher scores indicating more arguing. The ICI has been found to reliably explain variances in Asian American offspring's mental health outcomes (cf. Lui, 2015; Lui & Rollock, 2015). The ICI demonstrated excellent internal consistency reliability across measurement occasions ( $\alpha = .95-.96$ ).

### **Psychological Separation Inventory (PSI; Hoffman, 1984)**

The PSI is a 138-item scale assessing the degree to which adolescent and emerging adult offspring psychologically differentiate themselves from their parents in terms of beliefs, emotional attachment, and dependence for instrumental support. The current participants responded to the 14-items of the Attitudinal Separation (PSI-AI) on a scale of 1 (*not at all true of me*) to 5 (*very true of me*), which taps the degree to which offspring see themselves as possessing a set of values, beliefs, and attitudes distinct from their parents. All items were reverse scored so that higher mean scores indicated greater dissimilarities and potential for conflict between participants and their parents. The PSI has been used validly with Asian Americans college student samples (Choi, 2002). The PSI-AI demonstrated excellent internal consistency reliability across measurement occasions ( $\alpha = .91-.93$ ).

### **Depression Anxiety and Stress Scale (DASS; Lovibond & Lovibond, 1993)**

The DASS is a 42-item measure that assesses symptoms associated with general stress, depression, and anxiety. Participants rated their level of psychological distress in these three symptom clusters on a scale of 1 (*did not apply to me at all*) to 4 (*applied to me very much, or most of the time*). The DASS demonstrated excellent internal consistency in its assessment of internalizing symptoms in terms of depression and anxiety ( $\alpha = .97$ ) across three measurement occasions. The brief version of the

DASS (DASS-21) has demonstrated adequate psychometric properties, including factorial invariance among diverse American ethnocultural groups (Norton, 2007).

**Externalizing Spectrum Inventory-Brief Form (ESI; Patrick, Kramer, Krueger, & Markon, 2013)**

The ESI Brief Form is a 160-item inventory measuring externalizing problems in two areas related to callous aggression and substance use. The ESI-Brief Form is a short version of the 415-item Full Form, which has shown adequate psychometric properties in diverse ethnocultural samples including Asian American college and prison samples (Krueger, Markon, Patrick, Benning, & Kramer, 2007). Individuals responded to 15 items assessing core externalizing tendencies—excitement seeking, impatient urgency, rebelliousness, and relational aggression—to reduce participant burden. Participants rated their level of agreement with each item on a scale of 1 (*false*) to 4 (*true*). Negatively worded items were reverse coded so that higher mean scaled scores indicated greater externalizing problems. The current 15 ESI items demonstrated adequate internal consistency reliability across waves ( $\alpha$ s = .80-.91).

**NEO Five Factor Inventory-3 (NEO-FFI-3; Costa & McCrae, 2010)**

The NEO-FFI-3 is a 60-item inventory that assesses the Big 5 basic personality domains, including neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness (12 items per domain). It is a brief form of its parent scale, the 240-item NEO Personality Inventory-3 (NEO-PI-3), and does not assess facets of each personality domain. The NEO-FFI-3 consisted of minor revisions to the NEO-FFI-R (Costa & McCrae, 1992), which has been shown reliable and adequate in the assessment of personality traits in predominantly Euro American individuals (McCrae

& Costa, 2007). Participants rated their own personality tendencies in each of these domains on a Likert scale from 1 (*strongly disagree*) to 5 (*strongly disagree*). All negatively worded items were reverse coded when calculating scale scores; higher scores on all items and their mean scale scores were related to higher levels of the corresponding personality traits. The internal consistency reliabilities of the NEO-FFI-3 scales have been shown to be less than those for NEO-PI-3, with the Cronbach's  $\alpha$ s for the Big 5 domains ranging from .71 to .87 (McCrae & Costa, 2007). There has been limited research on the validity of the NEO family of measures in domestic Asian American samples, and the 60 items in the NEO-FFI-R have been shown to lack measurement invariance with Asian international student samples (Rollock & Lui, 2015b). In this sample, the NEO-FFI-3 demonstrated adequate internal consistency reliability for neuroticism ( $\alpha = .72$ ), extraversion ( $\alpha = .77$ ), and conscientiousness ( $\alpha = .83$ ), but not openness to experience ( $\alpha = .57$ ) or agreeableness ( $\alpha = .30$ ).

### **Procedures**

Three waves of data were collected during the first six months of students' freshman year. Each wave of data was collected over equal, two-month intervals: early September (Wave 1), end of November (Wave 2), and early February of the subsequent year (Wave 3). Participants were asked to respond to each of the questionnaires based on their experiences in the most recent two months. Participants were most likely to have had frequent and face-to-face contact with their parents at Waves 1 and 3: Wave 1 data were collected within one month of their presumed departure from their parents' household to matriculate at school, and Wave 3 were collected within 1 month of students' return to campus following a winter break/holiday season.

Participants were recruited through a mass email from their respective university's Registrar Office. Initial recruitment occurred at Wave 1 (W1), and follow-up emails were sent to enrolled participants at Waves 2 and 3 (W2-W3). Additional recruitment occurred at W2 to increase sample size, and these participants completed measures at W2 and W3. Participants provided consent (or parental consent and assent if under 18 years) at each wave of data collection, where they completed self-report questionnaires via a survey-hosting website. Detailed demographic information was gathered at W1, and participants' responses were matched with personal identifying information.

### **Data Analytic Plan**

#### **Change Trajectories of Intergenerational Conflicts**

To examine the overall change trajectories and their individual differences, univariate latent growth curve models (LGCMs) were computed for development- and acculturation-based intergenerational conflict variables separately. To test Hypothesis 1, the mean level of conflict at baseline (i.e., intercept) and changes in the level of conflict over time (i.e., slope) were examined. To test Hypothesis 2, inter-individual variability of intercepts and of slopes for these two constructs also was evaluated. First, an initial intercept-only LGCM was estimated for development- and acculturation-based intergenerational conflict, respectively, using data across three waves. Acceptable model fit for the intercept-only model would indicate trivial developmental changes over time; inadequate model fit would suggest that the status of the construct changed across time in either a linear or quadratic fashion. Second, a growth curve model was estimated for each form of conflict where the initial status and linear change factors

were estimated. Acceptable model fit for this intercept-and-slope model would indicate that changes in the mean level of construct (a) were a function of the slope factor and (b) followed a linear change trajectory. In the event that this linear growth model did not fit the data, a quadratic growth model would be estimated. Third, with adequate model fit for intercept-and-slope models, time-invariant covariates (i.e., gender, age, and immigration generational status) were entered to examine their impact on the rate of change for each conflict variable. These covariates were explored based on prior findings on their moderating role of intergenerational conflict on mental health outcomes (Lui, 2015). Minor improvements in or decreased model fit as evident by statistical and relative model fit indices would signal nonsignificant impact of these demographic variables on the change trajectories of either form of conflict.

### **Factor Structures of and Predictive Relationships Among Acculturation Mismatch, Intergenerational Conflict, and Mental Health**

To analyze the underlying structures of the two types of intergenerational conflict as well as the structural relationships among the key variables both concurrently and across time, longitudinal structural equation modeling (LSEM) was used. Latent SEM with multiple indicators per variable was used to distinguish shared variance attributable to the constructs across measurement occasions and indicator-specific variances while accounting for measurement imprecision, to better ascertain the true change in structural meaning and relationships among variables (Geiser, 2013; Hoyle & Smith, 1994). Establishing adequacy of the measurement model for each latent construct, testing factorial invariance of the measurements across time, and

evaluation of LSEM were pursued following established procedures (Farrell, 1994; Hays, Marshall, Wang, & Sherbourne, 1994; Little, 2013).

**Measurement models.** First, confirmatory factor analyses (CFAs) with individual scale items were evaluated for the degree of model fit in representing the underlying constructs. In models that demonstrated poor fit due to their complexity, items were grouped to form parcels to increase the degrees of freedom and improve model fit. With multidimensional constructs, items within the same subscale were parceled. With unifactorial constructs, item-construct balance method was used to form parcels<sup>3</sup> (Little, 2013). CFAs with parcel-indicators then were evaluated for model fit.

**Measurement models across waves.** Second, measurement models across all three waves were examined for the stability of meaning and assessment of the construct. To separate the construct- and indicator-specific effects, the same construct was specified to be intercorrelated across measurement occasion, and residual variance of each item- or parcel-indicator was correlated with itself across time to account for indicator-specific variance (Little, 2013). To test Hypothesis 3, increasingly restrictive levels of factorial invariance were specified to evaluate whether the overall structure (*configural invariance*), indicator-factor relationship (*weak invariance*), and ultimately intercept scores (*strong invariance*) were equivalent across measurement occasions (Widaman & Reise, 1997). Partial invariance was modeled in cases where isolated

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<sup>3</sup> Although there have been some controversies surrounding parceling in representing psychological variables' factorial structures (Marsh, Lüdtke, Nagengast, Morin, & Von Davier, 2013), research has demonstrated that parcel-indicators are more reliable without losing information on the measurement of the constructs, and are desirable in complex models by increasing degrees of freedom (Little, Cunningham, Shahar, & Widaman, 2002; Little, Rhemtulla, Gibson, & Schoemann, 2013). To the extent that the ultimate focus of the present study was to examine the relationships among variables, rather than the factorial structure of each construct, parceling was deemed appropriate.



indicators showed noninvariance over time (Byrne, Shavelson, & Muthén, 1989). Consistent with conventions in other longitudinal studies, partial invariance was determined to hold when at least one of all indicators for each factor demonstrated loading and intercept equivalence across measurement occasions (Byrne et al., 1989).

**Structural models across waves.** Longitudinal structural equation models based on the best fitting factorial invariant measurement model then were estimated to test Hypotheses 4 and 5. Saturated models where all stability effects, cross-lagged effects, and covariation/correlated residuals within time were specified in the initial SEM. Statistically nonsignificant paths were removed to arrive at the most parsimonious and yet adequate model (Hays et al., 1994; Little, 2013; Newcomb, 1994). Autoregressive paths were estimated to examine the degree of stability of each construct across time. Nonsignificant paths linking development-based intergenerational conflict and mental health would demonstrate a lack of meaningful influence of the former on the latter construct, as expected in Hypothesis 4. Unidirectional predictive paths from acculturation mismatch to intergenerational cultural conflict, and in turn to mental health would demonstrate support for Hypothesis 5.

Once structural models that demonstrated the most parsimonious representations of the relationships among acculturation mismatch, intergenerational conflicts, and mental health outcomes have been established, personality variables were added as covariates to examine their effects on these relationships. Due to the complexity of the models, manifest personality variables were used.

**Handling of missing data.** In all of the LGCM and LSEM analyses conducted using Mplus 7.2 (Muthén & Muthén, 1998-2014), missing data were handled with full information maximum likelihood (FIML). To examine the potential influences of missing data and estimation using FIML, analyses also were conducted with (a) all available data and (b) only participants with complete data on the current variables by listwise deletion. Findings did not differ, which indicated that missingness and FIML did not affect the results, therefore all available data were analyzed to maximize power.

### **Evaluating the Degree of Model Fit**

Maximum likelihood estimation was used due to (a) the normal distribution of the current data and (b) its ability to handle complex models (Hays et al., 1994). Statistical and practical goodness of fit indices were evaluated to determine the adequacy of the measurement and structural models, including  $\chi^2$  test, comparative fit index (CFI), and root mean square (RMSEA). The practical goodness-of-fit (CFI) and badness-of-fit (RMSEA) indices were given more credence over  $\chi^2$  because the latter tends to increase with sample size and model complexity. Statistically nonsignificant  $\chi^2$  results indicated excellent model fit to the data. General guidelines of CFI  $\geq .90$  (adequate fit) or .95 (excellent fit) and RMSEA  $\leq .08$  (adequate fit) or .05 (excellent fit) were used to evaluate the goodness of fit for all of the LGCM and LSEM results (Hu & Bentler, 1999; Little, 2013). In sequential tests of factorial invariance and longitudinal structural models (where all models were nested),  $\Delta\text{CFI} \leq -.010$  signaled the more restrictive model was not statistically worse than the previously less restrictive model and that the more parsimonious model would be favored. When personality traits were added as potential covariates to the structural models, Akaike

information criterion (AIC) and Bayesian information criterion (BIC) were evaluated, as these models were not nested. Models with smaller AIC and BIC were deemed to demonstrate closer fit for the data, and  $\Delta\text{AIC}$  and  $\Delta\text{BIC} \leq 10$  signaled improvement in the model fit.

## RESULTS

### **Change Trajectories of Intergenerational Conflicts**

Univariate LGCMs revealed different patterns in the change trajectories of development- and acculturation-based intergenerational conflicts (see Table 1 for summary of results). Supporting Hypothesis 1, development-based intergenerational conflict (measured by PSI discrepancies) did not show a significant growth pattern across measurement occasions, as shown by the intercept-only model. By contrast, acculturation-based intergenerational conflict (measured by ICI discrepancies) showed significant changes across time. The initial value of acculturation-based intergenerational conflict was statistically different from zero, and there was a statistically significant speed of change. As expected, a linear trajectory model best fitted the data for intergenerational cultural conflict attributable to acculturation mismatch, with an average decline in the level of this type of conflict across the duration of the study (see Figure 1).

Hypothesis 2 was partially supported: there were significant individual differences in initial levels of acculturation-based intergenerational conflict, but the change trajectory was uniform across the sample. Even though participants differed in their levels of self-reported intergenerational cultural conflict, changes in their subsequent levels of conflict followed this linear decline trend. Additional analyses that

specified gender, age, and immigration generational status as *a priori* covariates did not significantly improve the fit for the intercept-and-slope model for acculturation-based intergenerational conflict, demonstrating that its change trajectory did not vary as a function of these demographic variables.

### **Measurement Modeling**

#### **Measurement Models Within and Across Construct(s)**

CFAs were conducted to evaluate the degree to which each construct was measured adequately by its respective scale items. Of the nine key constructs included in this study, six failed to demonstrate adequate fit using conventional model fit index guidelines. The only exceptions were ethnic identity, mainstream comfort, and social affiliation, which demonstrated adequate fit using item-indicators. For the sake of consistency, all of the key constructs were subjected to CFAs using parcel-indicators. Parcels were formed using item-construct balance (ethnic identity, mainstream comfort, social affiliation, development-based intergenerational conflict) or by grouping items within the same subscale (acculturation-based intergenerational conflict, internalizing symptoms, externalizing symptoms) or content area (individualism and collectivism). CFAs with these parcel indicators demonstrated adequate to excellent model fit within each measurement occasion.

To examine the impact of method variance on the measurement models, a series of CFAs based on the multitrait-multimethod approach (Eid et al., 2008) were conducted within time. When parcel indicators from (sub)scales assessing acculturation mismatch, development-based intergenerational conflict, acculturation-based intergenerational conflict, and mental health outcomes were subjected to a unifactorial

CFA, this demonstrated extremely poor fit using the evaluation criteria outlined above<sup>4</sup>. The measurement model comprised of four distinct factors achieved adequate to excellent fit, indicating that acculturation mismatch, acculturation-based conflict, mental health, and development-based conflict demonstrated discriminant validity. Therefore, the present conceptualization was supported by the four-factor measurement model.

### **Measurement Models With Key Variables Across Waves and Factorial Invariance**

Table 2 summarizes the model fit indices of the four-factor model across measurement occasions. Each set of models demonstrated adequate to excellent fit with all constructs correlated with each other within and across time, and residual variances of each parcel-indicator were permitted to correlate across time. This baseline model served as the foundation to test factorial invariance.

At the level of configural invariance, all parameters were freely estimated and allowed to differ across waves. Subsequently, factor loadings were constrained to be equal across waves to test weak invariance. For all models involving externalizing symptoms, adding loading constraints significantly worsened the model fit and demonstrated weak noninvariance. A small number of time-noninvariant factor loadings were relaxed to permit partial invariance. All models involving internalizing

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<sup>4</sup> A set of three-factor CFAs where parcel-indicators assessing acculturation mismatch and acculturation-based intergenerational conflict were modeled in a single factor (acculturative stress) along with development-based intergenerational conflict and mental health variables demonstrated poor fit. A second set of three-factor CFAs where parcel-indicators assessing acculturation- and development-based intergenerational conflict variables were modeled within a common factor (general intergenerational conflict) along with acculturation mismatch and mental health outcomes also showed poor model fit. These findings suggest that these variables were not well understood as general intergenerational conflict and acculturative stress; rather distinguishing sources of intergenerational conflict, parent-offspring acculturation mismatch, and mental health outcomes best represent the data.

symptoms, except the one with acculturation mismatch in collectivism, demonstrated nonsignificant worsening in the goodness of fit when loadings constraints were imposed and indicated the presence of weak invariance. Noninvariant loadings were relaxed in the measurement model with acculturation mismatch in collectivism and internalizing symptoms; partial weak invariance was supported as the model fit was nonsignificantly worse than the configural invariance model. Finally, intercepts of parcel-indicators were constrained to be equal across waves. Nonsignificant worsening of model fit from (partial) weak invariance structure would demonstrate evidence for strong invariance across time; however, none of the present measurement models demonstrated strong invariance. Per modification indices, measurement occasion noninvariant parcel-indicator intercepts were relaxed one at a time until the partial strong invariance was not significantly worse than the (partial) weak invariance model.

In support of Hypothesis 3, partial strong invariance models involving externalizing symptoms demonstrated adequate but less than excellent fit, whereas models involving internalizing symptoms demonstrated close to excellent fit (see Table 2 for model fits of factorial invariance tests).

### **Longitudinal Structural Equation Modeling**

The partial strong invariance model served as a basis to test longitudinal structural equation models. Given the similarity in the contexts surrounding contact with parents at W1 and W3, direct W1 → W3 paths were specified to represent possible correlations above and beyond autoregressive paths across consecutive measurement occasions. In addition, autoregressive paths across adjacent waves, directional predictive paths and cross-lagged paths from preceding to later occurrences, and

across-time correlations were estimated, therefore saturated models were specified in the initial SEM.

Table 3 summarizes these model fit indices. Most structural models (see Figure 3) demonstrated nonsignificant worsening in the goodness of fit from their respective strong invariance models (except those involving acculturation mismatch in individualism and collectivism predicting internalizing symptoms). Statistically nonsignificant within-time correlations/covariances and prospective direct paths were removed from the initial structural models. All final models demonstrated adequate to excellent goodness of fit, suggesting that they effectively and parsimoniously explained the covariances across constructs.

Means, standard, deviation, and intercorrelations among manifest variable scores are summarized in Appendix D. Preliminary results showed that participants on average reported small acculturation discrepancies from their parents, and the levels of intergenerational conflicts and mental health problems across three measurement occasions were low. Table 4 summarizes all autoregressive path coefficients as well as statistically significant cross-lagged path coefficients, organized by mental health outcomes and exogenous (acculturation mismatch) variables. Relevant paths are illustrated in Figure 3.

### **Development- Versus Acculturation-Based Intergenerational Conflicts on Mental Health**

Based on differential conceptualization of the processes that underlie development- and acculturation-based intergenerational conflict, these two types of conflict were modeled as parallel risks to mental health outcomes, but were allowed to



covary within each measurement occasion. Results showed systematic differences with regard to the impact of these conflicts on individuals' mental health adjustment.

**Impact of development-based intergenerational conflict on mental health.**

Patterns of findings and conclusion regarding the impact of development-based intergenerational conflict on mental health outcomes differed across externalizing and internalizing symptoms.

*1. Externalizing symptoms.* Contrary to the hypothesis and existing literature on the relationship between development-based conflict and externalizing problems beyond adolescence, this type of conflict predicted significantly Asian Americans' externalizing symptoms across time (paths G1 and G2), even when acculturation-based conflict and parent-offspring mismatch were included in the models. The unidirectional paths between development-based intergenerational conflict and mental health outcomes consistently demonstrated that higher levels of perceived parent-offspring disagreements over separation-individuation issues in previous time(s) resulted in greater externalizing symptoms at later time(s).

*2. Internalizing symptoms.* As hypothesized, with the exception of acculturation mismatch in terms of collectivistic values, all models showed nonsignificant impact of development-based conflict on internalizing symptoms.

**Impact of acculturation-based intergenerational conflict on mental health.**

Overall, Hypothesis 5 was partially supported, but results varied across mental health outcomes in the structural equation models. First, there were more significant paths retained in the final SEM when internalizing symptoms were considered than externalizing symptoms. This suggested that the processes among acculturation,

separation-individuation, and internalizing symptoms were predicted with greater complexity than those involving externalizing symptoms. Second, acculturation mismatch (particularly considering identification and behavioral practices) exerted direct effects on externalizing symptoms even when intergenerational cultural conflict was accounted for. The impact of acculturation mismatch on internalizing symptoms, however, tended to be explained by intergenerational cultural conflict.

*1. Externalizing symptoms.* Development-based intergenerational conflict consistently predicted mental health over time, contrary to Hypothesis 4. Consistent with Hypothesis 5, W1 acculturation mismatch in ethnic identity and social affiliation predicted W2 intergenerational cultural conflict (path E1), which in turn predicted W3 externalizing problems when acculturation mismatch in ethnic identity, mainstream comfort, social affiliation, and collectivistic values was modeled (path F2). In addition, W1 acculturation mismatch (in terms of ethnic identity, mainstream comfort, and social affiliation) also directly predicted W2 externalizing symptoms (positive coefficients for path H1). These findings provided evidence for acculturation gap-distress theory and showed that intergenerational cultural conflict predicted small effects on subsequent externalizing problems, and acculturation mismatch in ethnic social affiliation resulted in greater externalizing problems directly and through intergenerational cultural conflict. Although acculturation mismatch in ethnic identity and mainstream comfort also directly resulted in subsequent increase in intergenerational cultural conflict, such mismatch was related to lower levels of externalizing symptoms (negative coefficients for path H1).

Not specified in acculturative gap-distress theory, however, there were a number of recursive relationships among acculturation mismatch, intergenerational cultural conflict, and externalizing symptoms. W1 externalizing symptoms showed large effects on W2 acculturation-based intergenerational conflict when all five bidimensional acculturation mismatch domains but individualistic values were included in the model (path J1). W2 externalizing symptoms also showed small standardized effects on W3 acculturation-based intergenerational conflict when accounting for acculturation mismatches in ethnic identity and mainstream comfort (path J2). Finally, W2 externalizing problems negatively predicted W3 acculturation mismatch in individualistic and collectivistic values (path K2), and W1 externalizing problems negatively predicted W3 acculturation mismatch in ethnic identity (path K3).

*Variations across types of acculturation mismatch.* Parent-offspring mismatch in acculturation to the heritage culture—but not to the mainstream culture—at W1 predicted intergenerational cultural conflict at W2 when identification and behavioral practices were considered (path E1). W1 acculturation mismatch also directly predicted W2 externalizing symptoms (path H1). Specifically, greater parent-offspring discrepancies in ethnic identity and mainstream comfort were associated with lower levels of externalizing symptoms at subsequent measurement occasion; discrepancies in ethnic social affiliation was associated with higher levels of externalizing symptoms. In turn, greater externalizing symptoms at W1 predicted greater acculturation mismatch in ethnic identity and behavioral practices at W2 (path K1). Results demonstrated whereas externalizing symptoms at W2 predicted lower acculturation mismatch in cultural values at W3 (path K2). Inconsistent with Hypothesis 5 and acculturation

gap-distress theory, although acculturation mismatch predicted acculturation-based intergenerational conflict and externalizing symptoms, this type of conflict did not predict externalizing symptoms directly.

**2. *Internalizing symptoms.*** Divergent from the results with externalizing symptoms, W1 and W2 acculturation mismatch directly predicted W3 intergenerational cultural conflict only when ethnic identity was modeled (path E3). W1 acculturation-based intergenerational conflict in turn reliably predicted W3 internalizing symptoms in all models (path F3). Compared to findings with externalizing symptoms, fewer domains of acculturation mismatch had direct effects on internalizing symptoms. W1 mismatch in individualistic values exerted an effect on W2 internalizing symptoms (path H1), and W2 mismatch in social affiliation and collectivistic values directly affected W3 internalizing symptoms (path H2). Otherwise, it appeared that acculturation mismatch at earlier times predicted subsequent internalizing symptoms through the presence of intergenerational cultural conflict.

Significant cross-lagged paths not postulated in acculturation gap-distress theory emerged more frequently in predicting internalizing than externalizing symptoms. W1 internalizing symptoms positively predicted W2 intergenerational cultural conflict (path J1) and W2 internalizing symptoms predicted W3 intergenerational cultural conflict across models (path J2) with all five forms of acculturation mismatch. W1 internalizing symptoms also predicted W2 acculturation mismatch in ethnic identity, mainstream comfort, social affiliation, and collectivistic values (path K1), while W2 internalizing symptoms predicted W3 acculturation mismatch in ethnic identity and bidimensional acculturative behavioral practices (path

K2). Finally, W2 acculturation-based intergenerational conflict negatively predicted W3 acculturation mismatch in ethnic identification and bidimensional acculturative behaviors (path I2). W1 acculturation-based intergenerational conflict also predicted W3 acculturation mismatch (path I3): there was a negative relationship when social affiliation mismatch was considered, and a positive relationship when collectivistic value discrepancies were considered.

*Variations across types of acculturation mismatch.* Across all types of acculturation mismatch, W2 intergenerational cultural conflict consistently predicted W3 parent-offspring mismatch in identification and behavioral practices, but not cultural values (path I2). The standard path parameters indicated that greater acculturation-based conflict at W2 resulted in smaller offspring-report mismatch. W1 internalizing symptoms also showed a predictive effect on W2 acculturation mismatch when ethnic identity, mainstream comfort and social affiliation behaviors, and collectivistic values were examined (path K1). W2 internalizing symptoms also predicted W3 acculturation mismatch when ethnic identity and bidimensional behavioral practices were assessed (path K2).

In addition to these patterns, there were domain-specific differences in the impact of acculturation mismatch on intergenerational cultural conflict and internalizing symptoms. Most notably, acculturation mismatch at W1 and W2 only predicted intergenerational cultural conflict at W3 when ethnic identity was assessed. While the effect sizes were small, greater discrepancies in identification with the heritage culture at W2 were related to greater acculturation-based conflict (path E2), but greater discrepancies at W2 were related to lesser conflict (path E3).

Acculturation-based conflict attributed to ethnic identity discrepancies, however, did not seem to predict internalizing symptoms significantly. While acculturation mismatch did not exert a direct effect on internalizing symptoms when ethnic identity, mainstream behavioral practices were included in the model, W1 mismatch in individualistic values predicted greater W2 internalizing symptoms (path H1), whereas W2 acculturation mismatch in collectivistic values predicted greater W3 internalizing symptoms (path H2). In the opposite direction, W2 acculturation mismatch in ethnic social affiliation predicted lower levels of W3 internalizing symptoms.

These findings demonstrated that acculturation mismatch in ethnic identity contributed to greater intergenerational conflict but not internalizing mental health outcomes. Internalizing symptoms, however, contributed to greater perception of parent-offspring discrepancies in ethnic identification. While acculturation mismatch in behavioral practices did not lead to greater intergenerational cultural conflict, it exerted a direct effect on internalizing symptoms and vice versa. Furthermore, higher levels of internalizing symptoms predicted lower level of conflict in the context of parent-offspring mismatch in acculturation behaviors. Finally, acculturation mismatch in cultural values appeared to be more salient in terms of collectivism than individualism. While intergenerational cultural conflict did not robustly predicted internalizing symptoms, value discrepancies were affected by intergenerational conflict. Mismatch in cultural values not only predicted internalizing problems as indicated in acculturation gap-distress theory, internalizing problems in turn also predicted perceived parent-offspring differences.

### **Impact of personality traits on intergenerational conflicts and mental**

**health.** The best-fitting structural models predicting internalizing and externalizing symptoms were used as the basis to explore the impact of personality on these relationships. Personality traits were normally distributed around the midpoint of the scale, and participants scored average on all five domains of personality in the current sample. The zero-order correlations among Big 5 personality traits, intergenerational conflict, and mental health variables across time revealed that openness to experience was not associated with any of these variables (see Appendix E). Neuroticism, extraversion, agreeableness, and conscientiousness were consistently associated with both internalizing and externalizing symptoms at W1. Neuroticism and conscientiousness were associated with W1 acculturation-based conflict, while extraversion, agreeableness, and conscientiousness were associated with development-based conflict. As expected, neuroticism correlated positively with intergenerational conflicts and mental health problems, whereas extraversion, agreeableness, and conscientiousness correlated negatively with them.

In light of these significant associations, all basic personality traits except openness were entered into the structural models as covariates accounting for the levels of conflict and symptomatology. Personality variables were specified as time-noninvariant covariates explaining individual variability in W1 mental health status (Model 1), W1 intergenerational cultural conflict (Model 2), W1 development-based intergenerational conflict (Model 3), W1 acculturation and development intergenerational conflicts (Model 4), W1 mental health symptoms and acculturation-based intergenerational conflict (Model 5), W1 mental health symptoms and both types

of conflict (Model 6). Given that personality traits are individual characteristics that remain stable across time and situations, and that levels of conflict and mental health outcomes were contingent upon their respective initial status (based on the specified autoregressive paths from W1 to W2 to W3, and occasionally from W1 to W3 directly), personality was specified to account for the level of intergenerational conflict and mental health outcomes at baseline in these models.

**1. Externalizing symptoms.** Adding the four personality traits as covariates to models predicting externalizing symptoms resulted in convergence of only three models: those that involved ethnic identity mismatch, individualism mismatch, and collectivism mismatch. Their model fit was inadequate across CFI and RMSEA, suggesting that the models controlling for personality traits should be rejected.

**2. Internalizing symptoms.** Controlling for personality traits at baseline yielded adequate model fit for models that involved ethnic identity mismatch, mainstream comfort mismatch, and social affiliation mismatch predicting internalizing symptoms (see Table 5). For acculturation mismatch in mainstream and heritage behavioral practices (mainstream comfort and social affiliation, respectively), Model 5 (personality traits that accounted for intergenerational cultural conflict and internalizing symptoms at W1) yielded the best fit according to  $\Delta AIC$  and  $\Delta BIC$ . Model 5 did not converge when the exogenous variable involved acculturation mismatch in ethnic identity; Model 1 demonstrated the best fit across all other structural models.

Results indicated that accounting for the influence of personality on the level of internalizing symptoms (and acculturation-based intergenerational conflict in cases of



acculturation behavioral mismatch) changed the patterns of findings in meaningful ways. Overall, many significant predictive paths became nonsignificant. When acculturation mismatch in ethnic identity was assessed, W1 intergenerational cultural conflict remained the only significant predictor of W2 internalizing symptoms ( $\beta = .17, p < .05$ ) besides autoregressive paths. Higher level of extraversion ( $\beta = .19, p < .001$ ), and lower levels of agreeableness ( $\beta = -.10, p < .05$ ) and conscientiousness ( $\beta = -.11, p < .05$ ) accounted for the initial level of internalizing symptoms. When acculturation mismatch in social affiliation was assessed, patterns were similar. W1 intergenerational cultural conflict remained the only significant predictive path on W2 internalizing symptoms ( $\beta = .18, p < .05$ ). Extraversion and conscientiousness both accounted for the initial levels of acculturation-based intergenerational conflict ( $\beta$ s = .12 and .19,  $p$ s < .05 and < .001, respectively) and internalizing symptoms ( $\beta$ s = -.15,  $p$ s < .05 and < .01, respectively). Neuroticism also explained individual differences in initial level of intergenerational cultural conflict ( $\beta = -.13, p < .05$ ). In the case of acculturation mismatch in mainstream comfort, W1 internalizing symptoms was significantly predictive of W2 acculturation-based intergenerational conflict ( $\beta = .16, p < .05$ ). Neuroticism and conscientiousness accounted for both initial levels of intergenerational conflict ( $\beta$ s = -.15 and -.16,  $p < .05$  and <.01, respectively) and internalizing symptoms ( $\beta = -.14, p < .05$ ). Extraversion did not significantly account for the levels of intergenerational cultural conflict at W1, but accounted for levels of internalizing symptoms ( $\beta = .19, p < .001$ ). Findings indicated that personality traits explained much of the variance in the relationships among acculturation mismatch, intergenerational cultural conflict, and internalizing symptoms. Over and above the effects of these

self-reported characteristics, the deleterious psychological impact of this conflict remained robust in the contexts of acculturation mismatch in ethnic identification and behavioral practices, whereas offspring's initial level of depression and anxiety related symptoms seemed to lead to greater perception of intergenerational cultural conflict.

## DISCUSSION

The present study examined the change trajectories and impact of two types of intergenerational conflict on mental health functioning during the first six months of college experience. Using latent growth curve and longitudinal structural equation modeling, results revealed that intergenerational conflicts due to separation-individuation and acculturation mismatch have differential change patterns and impact on internalizing and externalizing symptoms during the transition period from adolescence to emerging adulthood. This is the first multi-wave longitudinal study that simultaneously examines developmental and acculturation-related risks predicting mental health among emerging adults. Findings highlight the importance of (1) disentangling types and mechanisms of intergenerational conflict within Asian American immigrant families, (2) considering risk factors to offspring's externalizing and internalizing problems, and (3) the nuanced influences of domain-specific acculturation discrepancies.

### **Disentangling Development- and Acculturation-Based Intergenerational Conflict**

To overcome the limitations of previous narrow investigations of the forms of intergenerational conflict, both development- and acculturation-based intergenerational conflicts were assessed three times, during a time frame that might accentuate value and behavioral differences between these emerging Asian American emerging adults

and their immigrant parents. These two types of conflict showed differential change trajectories, construct validities in CFAs, and relationships with offspring's mental health outcomes.

### **Differential Change Trajectories**

The observed stability of development-based intergenerational conflict was consistent with the broader developmental psychology literature in that the extent to which Asian American offspring and their immigrant parents argue about normative separation-individuation tasks did not change during the first six months of college. This suggested that this kind of conflict tends to resolve by late adolescence among healthy individuals, and that it is typical to offspring from various ethnocultural backgrounds (Bray et al., 2001). Although emerging adulthood has been considered a period when individuals more fully differentiate from their parents and explore identities prior to establishment of adult roles, separation-individuation related family conflict does not seem to increase or decrease during this developmental epoch. On the other hand, acculturation-based intergenerational conflict shows a distinct pattern of change over time. Overall, participants experienced a steady decline in their level of arguments over acculturation mismatch with their parents. This is the first study illuminating how intergenerational cultural conflict progresses over time among emerging adults. Although a recent study has revealed that intergenerational conflict across diverse ethnocultural groups decrease throughout the four years in college (Nelson et al., 2015), that investigation failed to tease apart the types of conflict being measured for the overall sample and within specific ethnic groups. These divergent change trajectories reveal that most parents and offspring should expect to see fewer

overt disagreements over acculturation mismatches as offspring enter emerging adulthood; however, these issues are distinct and should not be confused with development-based conflict over separation-individuation.

### **Differential Patterns of Relationships Across Externalizing and Internalizing Symptoms**

This study contributes to the literature by identifying the differential relationships between intergenerational conflicts and internalizing/externalizing symptoms. Most existing studies (Hwang et al., 2010; Kim, Chen, Li, Huang, & Moon, 2009; Kim et al., 2013; Nelson et al., 2015) have focused on internalizing symptoms such as general psychological distress, depression, (social) anxiety, and somatic complaints, but neglected relationships among intergenerational conflict and externalizing problems. When acculturation-based conflict was examined simultaneously with development-based conflict, normative intergenerational conflict associated with the separation-individuation process does not seem to be predictive of or affected by internalizing symptoms. By contrast, this development-based conflict contributes to offspring's non-substance related externalizing symptoms. This stark contrast of interrelationships suggests that Asian American offspring may not blame themselves or feel anxious about separation-individuation issues, likely because they recognize these as developmentally normative and appropriate tasks to accomplish. When this process challenges their autonomy, however, they may be more oppositional and demonstrate relational aggressiveness toward their parents in order to further separate from their influences. On the other hand, acculturation mismatch may be inevitable in immigrant families and yet atypical to all domestic non-immigrant

American families. Even though the average degree and individual variability of offspring-perceived discrepancies between themselves and their parents were small, Asian American offspring who receive dissonant socializations from the host macrosystem and family microsystem may experience this group-specific stress, which in turn can contribute to internalizing problems. Furthermore, when offspring who are vulnerable to stress because of their own diathesis to internalizing symptoms, they may be sensitive in identifying acculturation mismatches with parents and lead to frequent arguments.

### **Identity, Behavioral Practices, and Values Matter**

Although the “big picture” predicting internalizing and externalizing symptoms separately remained consistent across dimensions and domains of acculturation mismatch, as indicated in acculturation gap-distress theory, the present results still revealed greater impact of acculturation mismatch in ethnic identity and heritage cultural values than behavioral and mainstream value discrepancies. Ethnic identity mismatch seems to reflect that offspring and parents differ fundamentally in how they relate to their Asian culture. This divergence seems to generate greater intergenerational cultural conflict and mental health outcomes. Comparatively, parent-offspring mismatch in behavioral practices—particularly mainstream comfort—does not seem to directly relate to greater mental health problems. Finally, larger parent-offspring differences in broad cultural values, especially individualism, yield greater acculturation-based intergenerational conflict and internalizing symptoms (but not externalizing symptoms), whereas higher levels of externalizing symptoms reliably yield greater acculturation-based conflict in an unexpected direction. Perhaps Asian

American offspring who are prone to be defiant toward their parents and others are more likely to argue with their parents when acculturation mismatch is brought up in conversations. The findings with regard to collectivism mismatch are particularly complex. It is likely that various domains of collectivism are not well distinguished (Lui & Rollock, 2015), making it difficult to clarify how Asian Americans navigate intergenerational differences in these cultural orientation. This is an initial step toward identifying nuanced experiences of acculturation mismatch and intergenerational conflicts as risk factors of mental health functioning. This area of research would benefit from more precise and domain-specific assessment of behavioral practices and cultural values.

### **Exploratory Influences of Personality**

Neuroticism, extraversion, agreeableness, and conscientiousness appeared to explain individual variability in the level of acculturation-based (but not development-based) intergenerational conflict and internalizing symptoms. The non-convergence of the models predicting externalizing symptoms may indicate that these models are unstable in the factor structure of externalizing spectrum problems, or that the interrelationships among variables are too complex to be represented adequately in a structural equation. While three sets of models did converge when predicting internalizing symptoms, controlling for these four personality traits removed a number of significant predictive relationships among the key variables of interest previously described.

Personality may underlie the relationships outlined in acculturation gap-distress theory. The complex cross-lagged relationships between internalizing symptoms and

acculturation mismatch, recursive prediction of acculturation mismatch by perceived conflict, as well as delayed psychological consequences of intergenerational cultural conflict seemed to be explained by Asian American offspring's self-reported personality tendencies. Individuals who are disagreeable in adolescence through young adulthood have been shown to be more prone to perceive their close social relationships as hostile and conflictual, without recognizing their own argumentative and defiant interpersonal style (Hafen, Allen, Schad, & Hessel, 2015). It is therefore not surprising that the covariations among intergenerational cultural conflict and internalizing symptoms dropped out once personality was accounted for. Findings with neuroticism and extraversion were contrary to the directions expected, however; individuals with high level of neuroticism have been considered to be more vulnerable to stress and interpersonal difficulties, whereas individuals with high levels of extraversion may be more sociable and outgoing in resolving any potential conflicts (Carver & Connor-Smith, 2009). It is possible that the influence of extraversion was driven by assertiveness rather than gregariousness per se, where offspring's greater assertiveness in their own worldviews and identifications may be related to higher tendencies to disagree with their parents. The current results for neuroticism and extraversion could be interpreted as suppressor effects, as the direction of association changed between zero-order correlations and the standardized paths in structural equation modeling. Perhaps the combination of high neuroticism and low extraversion contribute to greater intergenerational cultural conflict and internalizing symptoms.

Without more information on the mechanism, potential moderating factors, and replication with other independent samples, the present results must be interpreted with



caution. Cultural variations in the meanings of these personality traits, and the reliability and validity of NEO-FFI-3 in assessing them among Asian Americans should be taken into consideration when interpreting these exploratory findings. First, the current internal consistency reliabilities of the NEO-FFI-3 scales were lower than in other samples (e.g., McCrae & Costa, 2007), and the reliability for agreeableness (and to a lesser extent openness) was inadequate in the present sample. Second, recent work examining factorial invariance of NEO-FFI among Euro American and Asian international students has suggested that this measure only demonstrated loading invariance and threshold invariance with a subset of the items. Items that show the largest divergence in their adequacy of assessing the same personality were related to interpersonally oriented domains including extraversion and agreeableness (Rollock & Lui, 2015b). In light of these findings, the present results on these personality effects should be replicated upon establishment of measurement invariance of NEO-FFI-3 in Asian and Euro American samples to aid better understanding of the meaning of these Big 5 personality traits and the processes in which they affect intergenerational conflict.

### **Clinical Implications**

Findings from this investigation can guide clinicians working with emerging adults who may experience psychological problems due to intergenerational conflicts. First, mental health professionals may use the present results to distinguish development- and acculturation-based intergenerational conflicts and recognize that these two types of family issues come from divergent processes and cultural contexts. While intergenerational conflict related to the normative separation-individuation process does not appear to affect internalizing symptoms such as depression and

anxiety among Asian Americans (and other ethnocultural groups as shown in the existing literature; Koepke & Denissen, 2012), it may be related to externalizing symptoms such as rebelliousness and relational aggression. Clinicians also should recognize that intergenerational conflict associated with parent-offspring differences in acculturation strategies may yield internalizing psychological distress, and individuals who seek psychological intervention due to existing mental health problems may be at greater risk of perceiving negative family dynamic and interpersonal stress. One key clinical strategy to identify the types of conflict at play among Asian Americans is to examine the issues of contention, and whether they can be traced to parent-offspring and cross-immigration generational mismatches in cultural identification, behavioral practices, and values. Clinicians should pay particular attention to parent-offspring differences in ethnic identity and cultural values, and not sheer variations in behavioral preferences (Lui, 2015).

To the extent that intergenerational conflict leads to greater levels of delinquent behaviors, conflict resolution strategies would be helpful in clinical interventions (Lam, Solmeyer, & McHale, 2012) regardless of the source of this conflict. Clinicians working with Asian Americans struggling with acculturation-based intergenerational conflict should help them appreciate and empathize with the cultural lenses their immigrant parents possess in order to reduce the likelihood of overt arguments (Hwang et al., 2010). Approach-oriented coping mechanisms (Lee et al., 2005) also would be conducive to mitigate the negative consequences of intergenerational cultural conflict on offspring's internalizing symptoms. Addressing the challenges of acculturation, family adjustment, and normative development in turn may improve these clients'

functioning within this key social microsystem, and ultimately reduce mental health disparities across ethnic groups.

### **Limitations and Future Directions**

Findings from the present study should be interpreted with the following four sets of limitations in mind, which informs directions for future research in this area. First, the instrument used to assess externalizing symptoms addressed only a limited portion of the spectrum of antisocial and disruptive symptomatology. Only four subscales of the ESI Brief Form were included in the survey questionnaires to reduce participant burden; however, these items only tapped into impulsiveness in sensation seeking and immediate gratification, relational aggression, and tendencies to be argumentative and rebellious. These externalizing traits were closely related to poor executive control, but did not tap antisocial behaviors such as substance abuse, physical aggression, and psychopathy. To the extent that the current externalizing symptoms were better considered as stable traits (Krueger et al., 2007), the rebellious personality characteristics may explain subsequent parent-offspring conflict and offspring-perceived differences in identity, and acculturation behaviors. Furthermore, compared to findings on internalizing symptoms, the fit of measurement and structural models predicting externalizing symptoms were less adequate. While the ESI and ESI-Brief Form have been developed and validated with college students from diverse ethnocultural backgrounds (Krueger et al., 2007; Patrick et al., 2013), how they function across time and within Asian American populations of immigrant backgrounds have not been well studied. Future studies that plan to employ this family

of measures among Asian Americans should first examine construct comparability and factorial invariance of the ESI.

Second, the measurement of development-based intergenerational conflict may not be as sensitive to the manifestations of this construct for an emerging adult sample, and this potential measurement issue may reduce the direct comparability to acculturation-based intergenerational conflict for two reasons. The PSI was developed in and for samples of adolescents. Although the scale has been used validly with Asian American emerging adults in college (Choi, 2002), the content areas that face offspring in this developmental epoch may not be captured as well by the PSI. In addition, the Attitudinal Individuation subscale of the PSI was employed in this study as a proxy measure of intergenerational conflict due to separation-individuation, it does not explicitly assess the extent to which offspring and their parents argue over these issues. As acculturation mismatch has been shown to be related to but independent from acculturation-based intergenerational conflict (Juang et al., 2007; Lui, 2015), parent-offspring differences in a range of values may not equate occurrences of development-based intergenerational conflict. Unfortunately, existing measures of intergenerational conflict have been inadequate in assessing this construct in emerging adult populations. For example, the Issues Checklist (Robin & Foster, 1989) assesses the frequency and intensity of parent-adolescent arguments over a number of developmental tasks; many of these issues are more prevalent and normative during early and middle adolescence (e.g., putting feet on the furniture, time spent talking on the phone). While the PSI-AI remains the most appropriate measure currently available to approximate intergenerational conflict as a result of separation-individuation among individuals

transitioning from adolescence to emerging adulthood, future studies with emerging adults from immigrant families should aim to develop sensitive and developmentally appropriate measures to better assess the frequency, intensity, or problems associated with this type of conflict.

Third, changes in the level of intergenerational cultural conflict and its relationship with other key constructs were observed during the six-month duration of this study. Due to the changes in physical environments (high school to college, living with parents to living away from home), psychological adjustment to greater independence, and adjustment to the array of cultural influences, the present findings may reflect these turbulences and individual reactions to said new stressors. While the present investigation assessed changes across shorter intervals than previous studies with yearly measurement occasions, the findings at similarly regular intervals over longer overall duration (e.g., a full year, or the entire four years of college) would allow examination of the effects of maturation and other salient developmental events on intergenerational conflicts and mental health. For instance, as offspring become involved in committed romantic relationships, seek employment, and consolidate their outlook in life, how issues of intergenerational cultural conflict may affect their internalizing and externalizing symptoms can be better explored. While acculturation gap-distress theory suggests that parent-offspring discrepancies breed culture-specific conflict, several findings in this investigation suggest scenarios in which earlier acculturation-based conflict may potentiate later acculturation mismatch, and mental health problems may precipitate conflict. Longer duration of investigation thus may permit more measurement occasions to capture the reciprocal relationships between

internalizing symptoms and intergenerational cultural conflict and thus provide more precise estimation of causality.

Finally, the present study was aimed to identify the average pattern of relationships among acculturation mismatch, development- and acculturation-based conflict, and mental health outcomes across Asian American emerging adults. Future studies should expand on these findings to identify individual differences in the trajectories of intergenerational conflict (Nelson et al., 2015), personality profile, or the direction of intergenerational acculturation mismatch (Lui, 2015; Telzer, 2011) that pose greater vulnerability of mental health problems. Furthermore, replication studies should investigate the relationships of interest here among young adults who are not enrolled in college (Syed & Mitchell, 2013). These individuals may not experience prolonged periods of identity exploration and challenges associated with emerging adulthood due to higher education (Arnett, 2000), and may have lesser acculturation-based intergenerational conflict related to education and career (Chung, 2001), and therefore be at a lower risks of subsequent mental health maladjustments.

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## APPENDICES

Appendix A

Table 1

*Summary of Goodness-of-Fit Indices and Parameter Estimates for Latent Growth Curve Models for Development- and Acculturation-Based*

*Intergenerational Conflicts*

Variable	Model	N	$\chi^2$	df	CFI	RMSEA	i	s	Var (i)	Var (s)
PSI	Intercept-only	523	5.28	4	1.00	.025				
	Intercept & Slope	523	.368	2	1.00	.000	3.26*	.01	.54*	.04
ICI	Intercept-only	515	20.95*	4	.86	.091				
	Intercept & Slope	515	.02	1	1.00	.000	2.86*	-.18**	.66*	-.01

Notes: i = mean of the intercept of growth factor; s = mean of the slope of growth factor; Var (i) = variance of the intercept of growth factor;

Var (s) = variance of the slope of growth factor. PSI = Psychological Separation Inventory (development-based intergenerational conflict), ICI = Intergenerational Conflict Inventory (acculturation-based intergenerational conflict).

Table 2  
*Goodness-of-Fit Indices for Three-Wave Time Invariant Measurement Models*

Exogenous Variable	Model	$\chi^2$	<i>df</i>	CFI	RMSEA [90% CI]	$\Delta$ CFI
<b>Externalizing Symptoms</b>						
1. EI Diff	Configural	862.38*	396	.93	.045 [.041, .050]	
	Weak	953.16*	410	.92	.048 [.044, .052]	-.012
	Partial Weak	933.70*	407	.92	.048 [.044, .052]	-.009
	Strong	1345.66*	421	.86	.062 [.058, .066]	-.061
	Partial Strong	990.51*	417	.91	.049 [.045, .053]	-.008
2. MC Diff	Configural	805.57*	396	.94	.042 [.038, .047]	
	Weak	911.54*	410	.92	.046 [.042, .050]	-.015
	Partial Weak	862.38*	406	.93	.044 [.040, .048]	-.008
	Strong	1217.84*	420	.88	.060 [.054, .061]	-.053
	Partial Strong	927.65*	416	.92	.046 [.042, .050]	-.006
3. SA Diff	Configural	823.38*	396	.93	.044 [.039, .048]	
	Weak	917.94*	410	.92	.047 [.043, .051]	-.013
	Partial Weak	868.65*	407	.93	.045 [.041, .049]	-.006
	Strong	1309.92*	421	.86	.061 [.057, .065]	-.068
	Partial Strong	913.01*	415	.92	.046 [.042, .050]	-.006
4. IND Diff	Configural	922.84*	492	.93	.039 [.035, .043]	
	Weak	1024.36*	508	.91	.042 [.039, .046]	-.015
	Partial Weak	974.47*	505	.92	.040 [.037, .044]	-.007
	Strong	1397.07*	521	.85	.054 [.051, .058]	-.070
	Partial Strong	1034.61*	517	.91	.042 [.038, .046]	-.008
5. COL Diff	Configural	973.92*	492	.93	.042 [.038, .045]	
	Weak	1083.84*	508	.91	.045 [.041, .048]	-.015
	Partial Weak	1033.76*	505	.92	.043 [.039, .047]	-.008
	Strong	1460.68*	521	.85	.056 [.053, .060]	-.064
	Partial Strong	1084.24*	517	.91	.044 [.040, .048]	-.006

(table continues)

Exogenous Variable	Model	$\chi^2$	<i>df</i>	CFI	RMSEA [90% CI]	$\Delta$ CFI
<b>Internalizing Symptoms</b>						
1. EI Diff	Configural	425.68*	231	.96	.039 [.033, .044]	
	Weak	479.22*	241	.96	.042 [.036, .047]	-.008
	Strong	653.31*	251	.93	.053 [.048, .058]	-.030
	Partial Strong	522.10*	249	.95	.044 [.039, .049]	-.006
2. MC Diff	Configural	418.16*	231	.97	.038 [.032, .044]	
	Weak	483.52*	241	.96	.042 [.037, .048]	-.010
	Strong	660.24*	251	.92	.054 [.049, .059]	-.032
	Partial Strong	529.21*	249	.95	.045 [.039, .050]	-.007
3. SA Diff	Configural	392.69*	231	.97	.035 [.029, .041]	
	Weak	446.07*	241	.96	.039 [.033, .044]	-.008
	Strong	544.52*	249	.94	.045 [.041, .051]	-.018
	Partial Strong	479.65*	248	.96	.041 [.035, .046]	-.005
4. IND Diff	Configural	435.29*	309	.97	.027 [.021, .033]	
	Weak	492.26*	321	.96	.031 [.025, .036]	-.009
	Strong	665.63*	333	.93	.042 [.037, .047]	-.034
	Partial Strong	529.00*	330	.96	.033 [.027, .038]	-.006
5. COL Diff	Configural	533.86*	309	.94	.036 [.031, .041]	
	Weak	605.62*	321	.95	.040 [.035, .045]	-.011
	Partial Weak	580.27*	319	.95	.038 [.033, .043]	-.007
	Strong	703.14*	331	.93	.045 [.040, .049]	-.020
	Partial Strong	637.64*	330	.94	.041 [.036, .045]	-.008

*Note.* All models with correlated residuals among parcel-indicators across time. EI = Ethnic identity, MC = Mainstream comfort, SA = Social affiliation, IND = Individualism, COL = Collectivism. Partial measurement invariance at each level was achieved by identifying misfitted parameters and removing them one at the time.

\*  $p < .001$

Table 3

*Model Fit Indices for Structural Equation Models (SEM) Across Three Waves*

Exogenous Variable	Model	$\chi^2$	<i>df</i>	CFI	RMSEA [90% CI]	$\Delta$ CFI
<b>Externalizing Symptoms</b>						
1. EI Diff	Strong	990.51**	417	.91	.049 [.045, .053]	
	Initial SEM	1066.21**	432	.90	.051 [.047, .055]	-.009
	Final SEM	1091.66**	449	.90	.050 [.046, .054]	-.001
2. MC Diff	Strong	927.65*	416	.92	.046 [.042, .050]	
	Initial SEM	993.87*	431	.91	.048 [.044, .052]	-.008
	Final SEM	1046.11*	450	.91	.048 [.044, .052]	-.005
3. SA Diff	Strong	913.01*	415	.92	.046 [.042, .050]	
	Initial SEM	986.72*	430	.91	.048 [.044, .052]	-.009
	Final SEM	1021.53*	448	.91	.047 [.044, .051]	-.003
4. IND Diff	Strong	1034.61*	517	.91	.045 [.038, .046]	
	Initial SEM	1074.94*	532	.91	.042 [.039, .046]	-.004
	Final SEM	1105.39*	553	.91	.042 [.038, .046]	-.002
5. COL Diff	Strong	1084.24*	517	.91	.044 [.040, .048]	
	Initial SEM	1130.84*	532	.91	.045 [.041, .048]	-.004
	Final SEM	1150.01*	551	.91	.044 [.040, .047]	<-.001
<b>Internalizing Symptoms</b>						
1. EI Diff	Strong	522.10**	249	.95	.044 [.039, .049]	
	Initial SEM	579.83**	264	.94	.046 [.041, .051]	-.008
	Final SEM	.598.57**	280	.94	.045 [.040, .050]	-.001

*(table continues)*

Exogenous Variable	Model	$\chi^2$	<i>df</i>	CFI	RMSEA [90% CI]	$\Delta$ CFI
2. MC Diff	Strong	529.21**	249	.95	.045 [.039, .050]	
	Initial SEM	586.69**	264	.94	.046 [.041, .051]	-.008
	Final SEM	606.72**	.82	.94	.045 [.040, .050]	-.001
3. SA Diff	Strong	479.65**	248	.96	.041 [.035, .046]	
	Initial SEM	534.31**	263	.95	.042 [.037, .048]	-.008
	Final SEM	549.04**	278	.95	.042 [.036, .047]	-.008
4. IND Diff	Strong	435.29**	309	.97	.027 [.021, .033]	
	Initial SEM	568.98**	245	.95	.034 [.029, .039]	-.020
	Final SEM	607.16**	368	.95	.034 [.029, .039]	-.004
5. COL Diff	Strong	533.86**	309	.96	.036 [.031, .041]	
	Initial SEM	682.54**	345	.94	.042 [.037, .046]	-.021
	Final SEM	710.98**	364	.94	.041 [.037, .046]	-.002

*Note.* SEM = structural equation model(ing). EI = Ethnic identity, MC = Mainstream comfort, SA = Social affiliation, IND = Individualism, COL = Collectivism. All SEM were based on the final partial strong invariant measurement models for each set of analyses. All final SEMs were not meaningfully different from the initial SEMs by removing statistically nonsignificant paths.

\*  $p < .001$

Table 4

Standardized Parameter Estimates in Longitudinal SEMs Among Acculturation Mismatch, Development- and Acculturation-Based Intergenerational Conflict, and Mental Health Variables

Path	1. EI Diff			2. MC Diff			3. SA Diff			4. IND Diff			5. COL Diff		
	Coef	SE	p	Coef	SE	p	Coef	SE	p	Coef	SE	p	Coef	SE	p
<b>Externalizing Symptoms</b>															
A1: W1 AM→ W2 AM	.34	.16	.032	.06	.17	ns	-.17	.12	ns	.34	.08	<.001	.13	.09	ns
A2: W2 AM→ W3 AM	.49	.11	<.001	.11	.09	ns	.03	.08	ns	.54	.08	<.001	.16	.06	.015
A3: W1 AM→ W3 AM	—	—	—	—	—	—	—	—	—	—	—	—	.32	.06	<.001
B1: W1 ICI→ W2 ICI	.01	.06	ns	.02	.06	ns	.01	.06	ns	-.01	.06	ns	-.01	.06	ns
B2: W2 ICI→ W3 ICI	.04	.05	ns	.03	.05	ns	-.01	.04	ns	-.08	.04	.034	-.04	.04	ns
B3: W1 ICI→ W3 ICI	.08	.03	.001	.08	.03	.003	.09	.02	.001	.08	.03	.002	.09	.03	.001
C1: W1 EXT→ W2 EXT	.12	.14	ns	-.01	.14	ns	.15	.12	ns	-.35	.08	<.001	-.28	.08	.001
C2: W2 EXT→ W3 EXT	.05	.06	ns	.06	.06	ns	.05	.05	ns	-.02	.05	ns	.04	.06	ns
C3: W1 EXT→ W3 EXT	-.06	.05	ns	—	—	—	—	—	—	—	—	—	—	—	—
D1: W1 PSI→ W2 PSI	.52	.06	<.001	.49	.07	<.001	.51	.07	<.001	.48	.07	<.001	.49	.07	<.001
D2: W2 PSI→ W3 PSI	-.06	.05	ns	-.06	.05	ns	.02	.05	ns	-.03	.05	ns	-.02	.05	ns
E1: W1 AM→ W2 ICI	.37	.11	<.001	—	—	—	.26	.10	.010	—	—	—	—	—	—
F2: W2 ICI→ W3 EXT	.19	.06	.001	.18	.06	.004	.12	.05	.023	—	—	—	.17	.06	.005

(table continues)

Path	Coef	SE	p	Coef	SE	p	Coef	SE	p	Coef	SE	p			
<b>Externalizing Symptoms</b>															
	<u>1. EI Diff</u>			<u>2. MC Diff</u>			<u>3. SA Diff</u>			<u>4. IND Diff</u>			<u>5. COL Diff</u>		
G1: W1 PSI→ W2 EXT	.20	.08	.008	.19	.08	.016	.23	.08	.002	.26	.08	.001	.28	.07	.001
G2: W2 PSI→ W3 EXT	.16	.05	.001	.13	.05	.008	—	—	—	—	—	—	.12	.05	.030
H1: W1 AM→ W2 EXT	-.67	.15	<.001	-.50	.15	.001	.72	.12	<.001	—	—	—	—	—	—
I2: W2 ICI→ W3 AM	—	—	—	—	—	—	—	—	—	—	—	—	.25	.06	<.001
J1: W1 EXT→ W2 ICI	.40	.10	<.001	.69	.05	<.001	.51	.09	<.001	—	—	—	.66	.05	<.001
J2: W2 EXT→ W3 ICI	.12	.05	.011	.12	.05	.012	—	—	—	.68	.05	.001	—	—	—
K1: W1 EXT→ W2 AM	.36	.13	.007	.50	.15	.001	.73	.09	<.001	—	—	—	—	—	—
K2: W2 EXT→ W3 AM	—	—	—	—	—	—	—	—	—	-.15	.07	.036	-.31	.06	.001
K3: W1 EXT→ W3 AM	-.40	.09	<.001	—	—	—	—	—	—	—	—	—	—	—	—
<b>Internalizing Symptoms</b>															
	<u>1. EI Diff</u>			<u>2. MC Diff</u>			<u>3. SA Diff</u>			<u>4. IND Diff</u>			<u>5. COL Diff</u>		
A1: W1 AM→ W2 AM	.42	.12	.001	.21	.16	ns	-.05	.13	ns	.33	.09	<.001	.15	.09	ns
A2: W2 AM→ W3 AM	.23	.08	.004	.25	.08	.001	.30	.07	<.001	.55	.08	<.001	.16	.07	.013
A3: W1 AM→ W3 AM	.65	.08	<.001	.63	.08	<.001	.54	.07	<.001	—	—	—	.30	.06	<.001

(table continues)



Path	1. EI Diff			2. MC Diff			3. SA Diff			4. IND Diff			5. COL Diff		
	Coef	SE	p	Coef	SE	p	Coef	SE	p	Coef	SE	p	Coef	SE	p
<b>Internalizing Symptoms</b>															
B1: W1 ICI → W2 ICI	-.09	.08	ns	.05	.05	ns	-.08	.08	ns	-.05	.07	ns	-.07	.07	ns
B2: W2 ICI → W3 ICI	.18	.10	ns	.25	.12	.035	.17	.11	ns	.14	.08	ns	.23	.09	.013
B3: W1 ICI → W3 ICI	.13	.04	.002	.15	.04	<.001	.13	.04	.002	.14	.04	.001	.12	.04	.005
C1: W1 INT → W2 INT	-.58	.05	<.001	-.64	.05	<.001	-.50	.07	<.001	-.60	.05	<.001	-.60	.05	<.001
C2: W2 INT → W3 INT	.29	.11	.008	.36	.13	.004	.11	.07	ns	.27	.05	<.001	.28	.05	<.001
C3: W1 INT → W3 INT	-.19	.06	.002	-.18	.06	.005	—	—	—	—	—	—	—	—	—
D1: W1 PSI → W2 PSI	.56	.06	<.001	.59	.06	<.001	.48	.09	<.001	.54	.07	<.001	.57	.06	<.001
D2: W2 PSI → W3 PSI	-.05	.06	ns	-.01	.06	ns	-.03	.06	ns	-.05	.05	ns	.02	.06	ns
E2: W2 AM → W3 ICI	.16	.06	.007	—	—	—	—	—	—	—	—	—	—	—	—
E3: W1 AM → W3 ICI	-.15	.06	.008	—	—	—	—	—	—	—	—	—	—	—	—
F1: W1 ICI → W2 INT	.19	.08	.013	—	—	—	.19	.08	.018	.15	.07	.036	.17	.07	.014
F2: W2 ICI → W3 INT	—	—	—	.30	.14	.028	—	—	—	—	—	—	—	—	—
F3: W1 ICI → W3 INT	.15	.05	.002	.16	.05	.001	.20	.05	<.001	.17	.05	.001	.14	.05	.011
G2: W2 PSI → W3 INT	—	—	—	—	—	—	—	—	—	—	—	—	-.23	.09	.009

(table continues)

Path	Coef	SE	p	Coef	SE	p	Coef	SE	p	Coef	SE	p	Coef	SE	p
	<u>1. EI Diff</u>			<u>2. MC Diff</u>			<u>3. SA Diff</u>			<u>4. IND Diff</u>			<u>5. COL Diff</u>		
	<b>Internalizing Symptoms</b>														
G3: W1 PSI → W3 INT	—	—	—	—	—	—	—	—	—	—	—	—	.16	.07	.017
H1: W1 AM → W2 INT	—	—	—	—	—	—	—	—	—	.11	.06	.050	—	—	—
H2: W2 AM → W3 INT	—	—	—	—	—	—	-.18	.06	.003	—	—	—	.11	.06	.042
I2: W2 ICI → W3 AM	-.41	.11	<.001	-.56	.12	<.001	-.55	.11	<.001	—	—	—	—	—	—
I3: W1 ICI → W3 AM	—	—	—	—	—	—	-.13	.06	.032	—	—	—	.19	.07	.004
J1: W1 INT → W2 ICI	.62	.05	<.001	.66	.05	<.001	.52	.07	<.001	.64	.05	<.001	.64	.05	<.001
J2: W2 INT → W3 ICI	.24	.09	.008	.28	.11	.010	.24	.10	.019	.21	.08	.007	.28	.08	.001
K1: W1 INT → W2 AM	.28	.10	.005	.36	.15	.013	.58	.11	<.001	—	—	—	.19	.06	.003
K2: W2 INT → W3 AM	.47	.10	<.001	.53	.11	<.001	.56	.12	<.001	—	—	—	—	—	—

*Note.* Coef = standardized path coefficient, SE = standard error. W1, W2, and W3 = Wave 1, Wave 2, and Wave 3, respectively. AM = acculturation mismatch, ICI = Intergenerational Conflict Inventory (acculturation-based intergenerational conflict), INT = internalizing symptoms, PSI = Psychological Separation Inventory (development-based intergenerational conflict), EI = ethnic identity, MC = mainstream comfort, SA = social affiliation, IND = individualism, COL = collectivism. Cross-reference Figure 3 for labeling of paths.

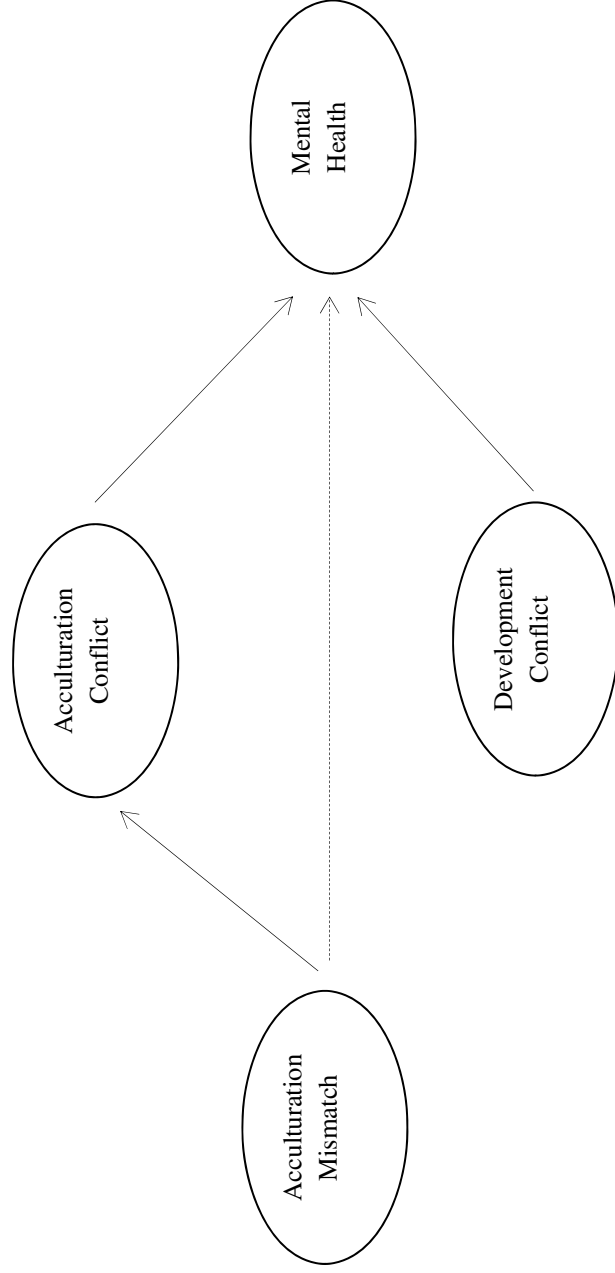
Table 5  
*Model Fit Indices for Longitudinal Structural Equation Models With Personality Variables as Covariates Predicting Internalizing Symptoms*

Exogenous Variable	Model	$\chi^2$	<i>df</i>	CFI	RMSEA [90% CI]	AIC	BIC
<b>1. EI Diff</b>	<b>Model 1</b>	<b>697.99</b>	<b>415</b>	<b>.91</b>	<b>.044 [.039, .050]</b>	<b>13324</b>	<b>13828</b>
	Model 2	708.77	415	.91	.045 [.040, .051]	13335	13839
	Model 3	722.13	415	.90	.046 [.041, .052]	13349	13852
	Model 4	707.88	411	.91	.046 [.040, .051]	13342	13861
	Model 5	No convergence					
	Model 6	673.95	407	.92	.044 [.038, .049]	13316	13851
2. MC Diff	Model 1	664.36	387	.91	.046 [.040, .052]	12302	12785
	Model 2	672.43	387	.91	.046 [.041, .052]	12310	12793
	Model 3	686.97	387	.90	.048 [.042, .052]	12324	12807
	Model 4	671.57	383	.91	.047 [.041, .053]	12317	12815
	<b>Model 5</b>	<b>640.41</b>	<b>383</b>	<b>.92</b>	<b>.044 [.038, .050]</b>	<b>12286</b>	<b>12784</b>
	Model 6	638.97	379	.92	.045 [.039, .051]	12292	12806
3. SA Diff	Model 1	647.85	382	.91	.045 [.039, .051]	10773	11275
	Model 2	655.36	382	.91	.046 [.040, .052]	10780	11283
	Model 3	668.85	382	.91	.047 [.041, .053]	10794	11296
	Model 4	654.17	378	.91	.046 [.040, .052]	10759	11277
	<b>Model 5</b>	<b>626.32</b>	<b>378</b>	<b>.92</b>	<b>.044 [.038, .050]</b>	<b>10759</b>	<b>11277</b>
	Model 6	624.75	374	.92	.044 [.038, .050]	10766	11299

*Note.* EI = Ethnic identity, MC = Mainstream comfort, SA = Social affiliation. Models in boldface were the best-fitting model with personality specified as time-invariant covariates. IND = Individualism, COL = Collectivism. All SEM were based on the final partial strong invariant measurement models for each set of analyses. All final SEMs were not meaningfully different from the initial SEMs by removing statistically nonsignificant paths.

\*  $p < .001$

Appendix B



*Figure 1.* Graphical representation of the conceptual model linking development-based intergenerational conflict, acculturation mismatch, acculturation-based intergenerational conflict, and mental health outcomes within each measurement occasion. Acculturation-based conflict is theorized to partially mediate the relationship between acculturation mismatch and mental health outcome. Development-based conflict represents a risk factor to mental health via a parallel process.

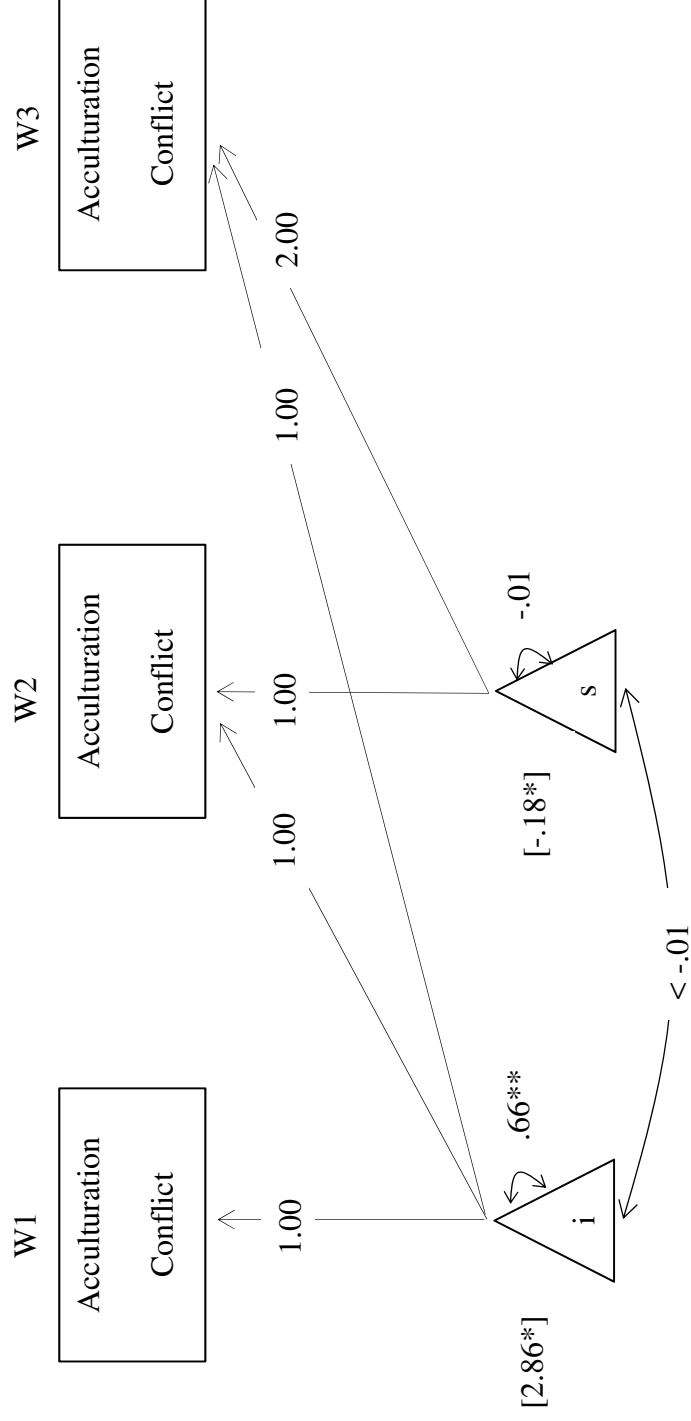
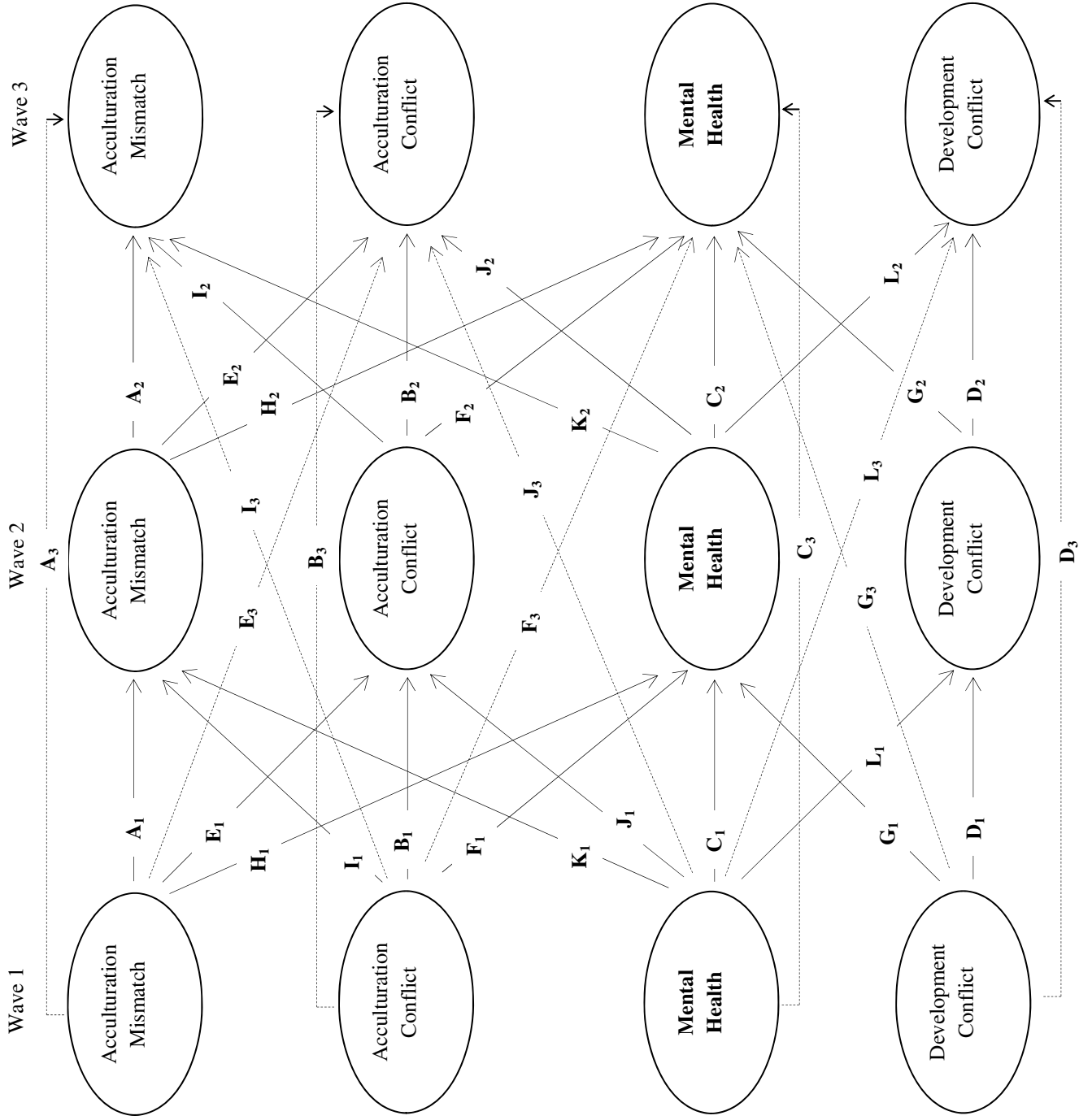


Figure 2. Graphical representation of linear latent growth curve models for acculturation-based intergenerational conflict.  $i =$  intercept of the change factor,  $s =$  slope of the change factor.  $N = 515$ . Unstandardized parameter estimates shown. \*  $p < .001$



*Figure 3.* Summary of the longitudinal structural equation model across three waves among acculturation mismatch, acculturation-based intergenerational conflict, mental health, and development-based intergenerational conflict. Measurement occasions were equally spaced. Paths a-d represent possible autoregressive paths, paths e-h represent possible directional predictive paths based on theory, and paths i-l represent possible reciprocal/cross-lag predictive paths based on the current data. Solid lines represent directional paths between adjacent measurement occasions. Dotted lines represent directional paths between Wave 1 and Wave 3 (for the ease of readability, *H3: W1 acculturation mismatch* → *W3 mental health* and *K3: W1 mental health* → *W3 acculturation mismatch* not shown in the figure). Covariation and correlation paths are not shown. Refer to Table 4 for path coefficients for individual structural model.

## Appendix C

## Participant Demographic Information across Three University Sites

	Purdue	Michigan	Michigan State
	( <i>N</i> = 195)	( <i>N</i> = 309)	( <i>N</i> = 115)
% in Cohort 1	37.44	35.28	47.82
<i>M</i> <sub>age</sub> ( <i>SD</i> <sub>age</sub> )	18.04 (.60)	17.91 (.73)	18.09 (.63)
% Women	47.69	42.81	43.86
% Ethnicity			
East Asian	64.95	63.16	49.56
Southeast Asian	9.79	7.57	25.66
South Asian	25.26	29.28	24.78
% Immigration Generational Status			
1.5 Generation	34.05	24.57	35.85
2 <sup>nd</sup> Generation	65.95	75.43	64.15
% Living on Campus	84.54	88.24	80.70
% Frequency of Contact with Parents			
Once per day	38.97	35.95	42.98
Few times per week	37.44	45.42	38.60
Once per week	15.90	12.75	11.40
Once biweekly	7.18	3.92	6.14
Once per month	.51	1.31	.88

*Note.* % frequency of contact with parents was measured at Wave 1 only



## Appendix D

Means, Standard Deviations, and Correlations among Key Variables across Three Waves

	1.	2.	3.	4.	5.	6.	7.	8.	9.
	<i>M/SD</i> .92/.50								
1. W1 EIDiff	--								
2. W1 MCDiff	.55*	--							
3. W1 SADiff	.44*	.53*	--						
4. W1 IND Diff	.27*	.22*	.31*	--					
5. W1 COL Diff	.34*	.32*	.34*	.72*	--				
6. W1 ICI	.06	.10	.13*	.08	.15*	--			
7. W1 PSI-AI	.14*	.17*	.20*	.05	.10	.27*	--		
8. W1 Internalizing	.12*	.05	.07	.07	.12	.36*	.09	--	
9. W1 Externalizing	.13*	.18*	.05	-.00	.09	.35*	.10	.27*	--
10. W2 EIDiff	.21*	.25*	.08	.07	.17*	.07	-.09	.17*	.12
11. W2 MCDiff	.20*	.34*	.24*	.07	.19*	.14	.04	.15	.17*

	1.	2.	3.	4.	5.	6.	7.	8.	9.	
	<i>M/SD</i>	.92/.50	1.02/.65	1.16/.80	1.62/.85	1.56/.87	2.83/1.05	2.76/.86	1.60/.63	1.98/.58
12. W2 SA Diff	.16	.21*	.38*	.07	.19*	.22*	.15	.14	.14	.05
13. W2 IND Diff	.27*	.11	.05	.16	.24*	.13	.02	.22*	.22*	.23*
14. W2 COL Diff	.25*	.10	.08	.23*	.30*	.14	-.02	.22*	.22*	.32*
15. W2 ICI	.03	.12	.15	.02	.01	.55*	.17*	.35*	.35*	.34*
16. W2 PSI-AI	.05	.10	.23*	.09	.14	.28*	.69*	.15*	.15*	-.01
17. W2 Internalizing	.16*	.15	.14	-.04	.05	.31*	.14	.50*	.50*	.32*
18. W2 Externalizing	.04	.18*	.06	.07	.19*	.30*	.09	.31*	.31*	.66*
19. W3 EI Diff	.35*	.21*	.12	.08	.23*	.03	.08	-.04	-.04	.02
20. W3 MC Diff	.31*	.45*	.22*	.08	.12	.04	-.02	-.08	-.08	.09
21. W3 SA Diff	.16	.32*	.49*	.18	.19	-.04	.12	-.12	-.12	.01
22. W3 IND Diff	.28*	.31*	.22*	.10	.30*	.01	-.01	.15	.15	.07
23. W3 COL Diff	.17	.20*	.19	.06	.34*	.08	.22*	.11	.11	.06
24. W3 ICI	.02	.01	.14	.24*	.10	.57*	.18	.35*	.35*	.28*
25. W3 PSI-AI	.07	.18	.32*	.24*	.29*	.38*	.70*	.12	.12	-.06
26. W3 Internalizing	.16	.08	.12	.31*	.26*	.27*	.17	.60*	.60*	.26*
27. W3 Externalizing	-.08	.01	-.05	.06	.05	.22*	.11	.32*	.32*	.63*

	10.	11.	12.	13.	14.	15.	16.	17.	18.
	<i>M/SD: .78/.55</i>								
10. W2 EI Diff	--								
11. W2 MC Diff	.58*	--							
12. W2 SA Diff	.51*	.63*	--						
13. W2 IND Diff	.25*	.22*	.18*	--					
14. W2 COL Diff	.30*	.28*	.21*	.74*	--				
15. W2 ICI	.21*	.12	.14*	.08	.05	--			
16. W2 PSI-AI	-.06	.12	.09	-.00	-.06	.10	--		
17. W2 Internalizing	.15*	.05	.10	.03	.05	.44*	.02	--	
18. W2 Externalizing	.23*	.13*	.14*	.09	.19*	.31*	.04	.43*	--
19. W3 EI Diff	.27*	.12	.15	.16	.20*	.10	.06	-.01	.16
20. W3 MC Diff	.29*	.43*	.35*	.17	.19*	.15	.09	-.01	.09
21. W3 SA Diff	.15*	.21*	.41*	-.03	.09	.00	.02	-.10	.03
22. W3 IND Diff	.23*	.20*	.23*	.30*	.19*	-.09	.06	.12	.14

	10.	11.	12.	13.	14.	15.	16.	17.	18.
	<i>M/SD</i> :.78/.55	.81/.63	1.02/.82	1.36/.82	1.33/.96	2.64/1.12	2.73/.90	1.74/.73	1.97/.57
23. W3 COL Diff	.21*	.21*	.29*	.24*	.38*	-.02	.10	.09	.09
24. W3 ICI	.07	.03	-.04	.09	.09	.50*	.20*	.36*	.28*
25. W3 PSI-AI	.01	.12	.21*	-.06	-.17	.25*	.76*	.03	.05
26. W3 Internalizing	.15	.07	.03	.23*	.19*	.32*	.16	.65*	.35*
27. W3 Externalizing	.30*	.19*	.14	.11	.22*	.22*	.07	.38*	.68*
	19.	20.	21.	22.	23.	24.	25.	26.	27.
	<i>M/SD</i> :.78/.49	.82/.62	.96/.76	1.27/.75	1.31/.89	2.51/1.15	2.68/.93	1.73/.68	2.02/.62
19. W3 EI Diff	--	--	--	--	--	--	--	--	--
20. W3 MC Diff	.49*	--	--	--	--	--	--	--	--
21. W3 SA Diff	.50*	.58*	--	--	--	--	--	--	--
22. W3 IND Diff	.20*	.18*	.08	--	--	--	--	--	--
23. W3 COL Diff	.33*	.17*	.16	.69*	--	--	--	--	--
24. W3 ICI	.04	.07	-.04	-.07	-.01	--	--	--	--
25. W3 PSI-AI	.16*	.15	.14	.03	.14	.20*	--	--	--
26. W3 Internalizing	.03	-.05	-.04	.14	.11	.42*	.15	--	--
27. W3 Externalizing	.07	.07	-.06	.12	.05	.33*	.04	.43*	--

*Note.* W1 = Wave 1, W2 = Wave 2, W3 = Wave 3. EI = Ethnic identity, MC = Mainstream comfort, SA = Social affiliation, IND = Individualism, COL = Collectivism, ICI = Intergenerational Conflict Inventory, PSI-AI = Psychological Separation Inventory-Attitudinal Individuation. Coefficients in shaded cells represent zero-order correlations within each measurement occasion.

\*  $p < .05$

## Appendix E

Means, Standard Deviations, and Correlations among the Big Five Personality Traits, Intergenerational Conflicts, and Mental Health Variables

	N	E	O	A	C
	<i>M/SD</i> 3.23/.54	3.34/.54	3.35/.46	3.26/.38	3.39/.57
W1 ICI	.25*	-.04	.00	-.04	-.17*
W1 PSI-AI	.10	-.17*	.00	-.13*	.26*
W1 Internalizing	.27*	-.23*	.05	-.15*	-.17*
W1 Externalizing	.11*	.18*	.05	-.20*	-.15*
W2 ICI	.09	-.09	.05	-.15	-.14
W2 PSI-AI	.14	-.33*	-.11	-.29*	-.31*
W2 Internalizing	.25*	-.22*	.03	-.06	-.19*
W2 Externalizing	.05	.06	.02	-.18	-.22*
W3 ICI	.16	-.15	.03	-.07	-.29*
W3 PSI-AI	.17	-.31*	.05	-.29*	-.30*
W3 Internalizing	.31*	-.09	.24*	-.12	-.14
W3 Externalizing	.05	-.02	.04	-.20*	-.21*

*Notes:* W1 = Wave 1, W2 = Wave 2, W3 = Wave 3. ICI = Intergenerational Conflict

Inventory, PSI-AI = Psychological Separation Inventory-Attitudinal Individuation, N =

Neuroticism, E = Extraversion, O = Openness to Experience, A = Agreeableness, C =

Conscientiousness.

\*  $p < .05$

VITA

## VITA

**P. Priscilla Lui, M.A.**

Purdue University  
 Department of Psychological Sciences  
 703 Third Street  
 West Lafayette, IN 47907-2081  
 Tel: 765-494-6996; Fax: 765-496-2670  
 E-mail: [plui@purdue.edu](mailto:plui@purdue.edu)

**EDUCATION**

<b>Bachelor of Science</b>	2007
Majors: Biology and Psychology University of Washington, Seattle, WA	
<b>Master of Arts</b>	2010
Major: Psychology California State University, Los Angeles, CA	
<b>Doctor of Philosophy</b>	2016 (Expected)
<b>Graduate Certificate in Psychological Statistics</b>	2014
Major: Clinical Psychology Purdue University, West Lafayette, IN <i>Dissertation: Disentangling Universal and Culture-Specific Risks to Mental Health among Asian Americans: A Multi-site Longitudinal Investigation</i>	
<b>Predoctoral Psychology Internship (APA Accredited)</b>	2016 (Expected)
Northwestern University McGaw Medical Center, Chicago, IL	

**EXTRAMURAL RESEARCH GRANTS**

<b>APF/COGDOP Graduate Research Scholarship (Awarded: \$1000)</b>	2013
<b>Peter and Malina James &amp; Dr. Louis P. James Legacy Scholarship; PI</b> American Psychological Foundation	



<b>APA Dissertation Research Award; (Awarded: \$1000); PI</b> American Psychological Association Science Foundation	2013
<b>AAPA Dissertation Research Grant (Honorable Mention); PI</b> Asian American Psychological Association	2013

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### INTRAMURAL RESEARCH GRANTS

<b>Department Research Grants (Awarded: \$600); PI</b> Department of Psychological Sciences, Purdue University	2011
<b>Graduate Research Innovation Award Grant (Awarded: \$1200); PI</b> Department of Psychological Sciences, Purdue University	2012
<b>Research Grant (Awarded: \$500); Co-I (PI: David Rollock)</b> Center of Research on Diversity and Inclusion, Purdue University	2012
<b>Purdue Research Foundation Summer Research Grant (Awarded: \$2987.24)</b> Purdue Research Foundation	2013

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### SCHOLARSHIPS, AWARDS & HONORS

#### Department- & College-wide:

<b>Graduate Student Travel Award (\$400/year)</b> College of Natural and Social Sciences, California State University, Los Angeles	2008–10
<b>Department of Psychology Scholarships</b> 2009–10 California State University, Los Angeles	
<b>Graduate Student Travel Award (\$400-500/year)</b> Department of Psychological Sciences, Purdue University	2010–14
<b>Supplemental Support for Graduate Student Training in Research Methods and Statistics (Awarded: \$500)</b> Department of Psychological Sciences, Purdue University	2013
<b>James D. Linden Award</b> Department of Psychological Sciences, Purdue University	2014
<b>Graduate Research Publication Award, 1<sup>st</sup> Place</b> Department of Psychological Sciences, Purdue University	2015

<b>Compton Graduate Research Travel Award</b> College of Health and Human Sciences, Purdue University	2015
<u>University-wide:</u>	
<b>Robert N. Chang Scholarship for Transpacific Study (\$10,000)</b> University of Washington	2005–07
<b>Special Recognition for Excellence in Graduate Studies</b> California State University, Los Angeles	2008–09; 2009–10
<b>Purdue Graduate Student Government Travel Award</b> Graduate School, Purdue University	2012
<b>Arthur F. Krueger Scholarship Fund (Awarded: \$6320 Total)</b> Purdue University	2010–14
<b>Purdue Graduate Student Government Professional Award</b> Graduate School, Purdue University	2014
<b>Excellence in Research Award</b> Center for Research on Diversity and Inclusion, Purdue University	2015
<u>State- &amp; Nation-wide:</u>	
<b>Student Poster Competition Award – 2<sup>nd</sup> Place</b> Indiana Psychological Association Fall Annual Conference	2011
<b>APA Travel Award for Advanced Training Institute</b> American Psychological Association Science Directorate	2013
<b>AAPA Student Travel Award</b> Asian American Psychological Association	2013, 2014
<b>APA Student Travel Award</b> American Psychological Association Science Directorate	2013, 2015
<b>Distinguished Student Practice Award</b> Society of Clinical Psychology American Psychological Association Division 12	2014
<b>A. Toy Caldwell-Colbert Student Contribution Award</b> Society for the Psychological Study of Culture, Ethnicity and Race American Psychological Association Division 45	2015

## PUBLICATIONS

\*Denotes shared first-author manuscript

- Riggio, H. R., Weiser, D. A., Valenzuela, A. M., **Lui, P.**, Montes, R., & Heuer, J. (2011). Initial validation of a measure of self-efficacy in romantic relationships. *Personality and Individual Differences, 51*, 601-606. Doi:10.1016/j.paid.2011.05.026
- Lui, P. P.**, & Rollock, D. (2012). Acculturation and psychosocial adjustment among Southeast Asian and Chinese immigrants: The effects of domain-specific goals. *Asian American Journal of Psychology, 3*, 79-90. Doi: 10.1037/a0025411
- Riggio, H. R., Weiser, D. A., Valenzuela, A. M., **Lui, P. P.**, Montes, R., & Heuer, J. (2013). Self-Efficacy in romantic relationships: Prediction of relationship attitudes and outcomes. *Journal of Social Psychology, 153*, 629-650. Doi: 10.1080/00224545.2013.801826
- Lui, P. P.** & Rollock, D. (2013). Tiger mother: Popular and psychological scientific perspectives on Asian culture and parenting. *American Journal of Orthopsychiatry, 83*, 450-456. Doi: 10.1111/ajop.12043
- Riggio, H. R., **Lui, P. P.**, Garcia, A., Matthies, B. K., Bailey, J., & Culbert, G. (2015). Initial validation of a self-report measure of perceptions of interpersonal attraction. *Personality and Individual Differences, 74*, 292-296. Doi: 10.1016/j.paid.2014.10.030
- Lui, P. P.** (2015). Intergenerational cultural conflict, mental health, and educational outcomes among Asian and Latino/a Americans: Qualitative and meta-analytic review. *Psychological Bulletin, 141*, 404-446. Doi: 10.1037/a0038449
- Zamboanga, B. L., Tomaso, C. C., & **Lui, P. P.** (2015). Acculturation and alcohol use among Hispanic and Asian American college students: What do we know and where could we go? To appear in Schwartz, S. J., & Unger, J. B. (Eds.), *Handbook of acculturation and health*. Oxford, England: Oxford University Press.
- Rollock, D., & **Lui, P. P.** (2015). Do spouses matter? Discrimination, social support, and psychological distress among Asian Americans. *Cultural Diversity and Ethnic Minority Psychology*. Advanced online publication. Doi: 10.1037/cdp0000045
- \*Rollock, D., & \***Lui, P. P.** (2015). Culture and the five factor model of personality: Measurement invariance across Asian international and Euro American students. *Assessment*. Advanced online publication. Doi: 10.1177/1073191115590854
- Tang, X., Forbush, K., & **Lui, P. P.** (in press). Chinese translation of the Eating Pathology Symptoms Inventory (EPSI). *International Journal of Eating Disorders*. Advanced online publication. Doi: 10.1002/eat.22423

**Other Professional Publications:**

- Ellis, M. U., Wilson, G., & **Lui, P. P.** (2011). From students, for students: Advice on thriving in your first year as a doctoral student. *Feminist Psychologist, 38*(4), 10-12.
- Lui, P. P.**, Quaintance, T. M., Huddleston, C., & Ellis, M. U. (2012). Interviews with feminist/womanist psychologists of color: Advice for graduate students. *Feminist Psychologist, 39*(1), 11-12.
- Martinez, S., **Lui, P. P.**, Wilson, G., & Ellis, M. U. (2012). Journeys to developing a feminist identity: Perspectives from Chicana, Caribbean-African American male, and lesbian-identified feminist scholars. *Feminist Psychologist, 39*(2), 8-9.
- 

**MANUSCRIPTS UNDER REVIEW AND REVISION**

- Lui, P. P.**, & Rollock, D. (under revision). Psychometric properties of four scales assessing intergenerational cultural conflict among Asian Americans.
- Lui, P. P.** (under revision). Differentiating development- and acculturation-based intergenerational conflict: Longitudinal impact on mental health in emerging adults.
- Lui, P. P.**, & Rollock, D. (revise & resubmit; under revision). Development and initial validation of the Asian Family and Collectivism Examination.
- Lui, P. P.**, & Fernando, G. (under revision). Development and empirical test of a well-being scale for diverse ethnocultural groups of college students in the United States.
- 

**MANUSCRIPTS IN PREPARATION**

- Lui, P. P.**, Muramatsu, M. K., & Rollock, D. (in preparation). Understanding intergenerational cultural conflict among Chinese American young adults: A mixed methods study.
- Sherman, E. D., Lynam, D. R., & **Lui, P. P.** (in preparation). Examining the role of agreeableness in psychopathy: A meta-analysis.
- Zamboanga, B. L., **Lui, P. P.**, Tomaso, C. C., & Schwartz, S. J. (in preparation). A meta-analytic review of the associations between acculturation and alcohol use.
-

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## CONFERENCE PRESENTATIONS

\*\*Denotes organizer and submitter of the symposium (Doctoral degrees required to be a Chair)

‡Denotes undergraduate student mentee

- Riggio, H. R., & **Lui, P.** (2009, April). *Attachment style and quality of relationships with parents in young adulthood*. Poster presented at the Western Psychological Association 89<sup>th</sup> Annual Convention, Portland, OR.
- Riggio, H. R., Valenzuela, A. M., & **Lui, P. P.** (2009, June). *Parental conflict and divorce, parent-child relationships, and relationship anxiety and social support*. Paper presented at the International Conference on Psychology in Modern Cities: Promoting Growth and Well-Being amid Diversity, Hong Kong, China.
- Lui, P. P.**, & Fernando, G. (2009, June). *Development and validation of a scale to assess general well-being*. Paper presented at the International Conference on Psychology in Modern Cities: Promoting Growth and Well-Being amid Diversity, Hong Kong, China.
- Riggio, H. R., & **Lui, P. P.** (2009, November). *Social skills, attachment, and cultural differences in prediction of relationship outcomes*. Poster presented at the International Association of Relationship Research Biannual Conference, Lawrence, KS.
- Lui, P. P.**, & Fernando, G. (2010, April). *Measuring well-being in culturally diverse groups of college students and the community*. Paper presented at the Western Psychological Association 90<sup>th</sup> Annual Convention, Cancun, Mexico.
- Lui, P. P.**, & Riggio, H. R. (2010, April). *Predicting attitudes toward infidelity: Social skills and feelings of attraction*. Paper presented at the Western Psychological Association 90<sup>th</sup> Annual Convention, Cancun, Mexico.
- Lui, P. P.**, & Riggio, H. R. (2010, April). *Attitudes of infidelity and romantic relationship outcomes in young adulthood*. Poster presented at the Western Psychological Association 90<sup>th</sup> Annual Convention, Cancun, Mexico.
- Riggio, H. R., & **Lui, P. P.** (2010, August). *Family of origin socioeconomic status and relationship anxiety in young adulthood*. Poster presented at the American Psychological Association 118<sup>th</sup> Annual Convention, San Diego, CA.
- Fernando, G., & **Lui, P. P.** (2010, August). *An empirical test of two theoretical models of well-being*. Poster presented at the American Psychological Association 118<sup>th</sup> Annual Convention, San Diego, CA.
- Lui, P. P.**, & Fernando, G. (2011, April). *Rethinking well-being in ethnocultural groups: Factorial invariance in subjective well-being*. Paper presented at the Western Psychological Association 91<sup>st</sup> Annual Convention, Los Angeles, CA.
- Rollock, D., & **Lui, P. P.** (2011, August). *Effects of specific immigration goals on mental health and educational outcomes*. Poster presented at the American Psychological Association 119<sup>th</sup> Annual Convention, Washington, DC.

- Lui, P. P.**, & Rollock, D. (2011, August). *Close social relationships and discrimination as predictors of mental health among diverse Asian groups*. Poster presented at the Asian American Psychological Association 2011 Annual Convention, Washington, DC.
- Lui, P. P.**, & Rollock, D. (2011, October). *Tiger mother: Contemporary social science perspectives on Asian values and parenting styles*. Paper presented at the Indiana Academy of Social Sciences 82<sup>nd</sup> Annual Meeting, Valparaiso, IN.
- Lui, P. P.**, & Fernando, G. (2011, November). *A new scale and theoretical model assessing subjective well-being: WeBS and WeB*. Poster presented at the 2011 Indiana Psychological Association Fall Conference and Annual Meeting, Indianapolis, IN.
- Fernando, G. A., Zambrano-Morales, E., & **Lui, P. P.** (2012, April). *Examining subjective well-being across cultures*. Paper presented at the Western Psychological Association 92<sup>nd</sup> Annual Convention, San Francisco, CA.
- Lui, P. P.**, & Rollock, D. (2012, May). *Negative psychological consequences of intergenerational cultural conflict within Asian- and Latino-American families*. Poster presented at the Association for Psychological Science 24<sup>th</sup> Annual Convention, Chicago, IL.
- Riggio, H., & **Lui, P. P.** (2012, May). *Attitudes toward infidelity: Measurement and prediction of relationship outcomes among diverse ethnocultural adults*. Poster presented at the Association for Psychological Science 24<sup>th</sup> Annual Convention, Chicago, IL.
- Rollock, D., **Lui, P. P.**, & Landers, A. J. (2012, May). *Individual and group differences in acculturation goals among Asian international students*. Paper presented at the APA Division 45 Biannual Conference, Ann Arbor, MI.
- \*\*Lui, P. P.**, & Rollock, D. (2012, August). *Intergenerational conflict within Asian immigrant families: Predictors and consequences*. In J. S. Mio (Chair), Empirical Data on Tiger Parenting: Parent-Child Relationships and the Asian "Model Minority" Myth. Symposium presented at the American Psychological Association 120<sup>th</sup> Annual Convention, Orlando, FL.
- Lui, P. P.**, & Rollock, D. (2012, August). *Differential relationships among personality, university adjustment, and well-being by ethnicity*. Poster presented at the American Psychological Association 120<sup>th</sup> Annual Convention, Orlando, FL.
- Lui, P. P.**, & Rollock, D. (2013, July). More than assertiveness: Development and initial validation of the Face and Collectivism Evaluation (FaCE) Scale. Poster presented at the Asian American Psychological Association 2013 Annual Convention, Honolulu, HI.
- \*\*Lui, P. P.**, & Rollock, D. (2013, August). *Intersection of acculturation and family relationships among Chinese Americans: Mixed methods study*. In D. Rollock (Chair), Contextualizing Health Disparities among Asian Americans: Intersections and Within-Group Variations. Symposium presented at the American Psychological Association 121<sup>st</sup> Annual Convention, Honolulu, HI.

- Rollock, D., & **Lui, P. P.** (2013, August). *Common and differential risks to adjustment among diverse Asian international students*. In D. Rollock (Chair), Contextualizing Health Disparities among Asian Americans: Intersections and Within-Group Variations. Symposium presented at the American Psychological Association 121<sup>st</sup> Annual Convention, Honolulu, HI.
- Cheng, Z. & **Lui, P. P.** (2013, August). *Finding voices and meanings during graduate school*. In Y. Tsong (Chair), Seeking an Authentic Asian American Feminist Identity. Symposium presented at the American Psychological Association 121<sup>st</sup> Annual Convention, Honolulu, HI.
- Lui, P. P.**, & Fernando, G. (2013, August). *Was Maslow right? Using structural equation modeling to examine structures of subjective well-being*. Poster presented at the American Psychological Association 121<sup>st</sup> Annual Convention, Honolulu, HI.
- <sup>‡</sup>Morris, C., **Lui, P. P.**, & Rollock, D. (2013, October). *Disentangling normative and culture-specific risks to mental health among Asian American young adults*. Paper presented at the Society for the Study of Emerging Adulthood 6<sup>th</sup> Biennial Conference.
- Luu, L. P., **Lui, P. P.**, & Kawahara, D. (2014, August). AAPI students and advocacy in research, practice, and service: Challenges and opportunities. Interactive symposium presented at the Asian American Psychological Association 2014 Annual Convention, Washington, DC.
- Lui, P. P.**, Wang, S. C., Li, V., Chain, J., & Dinh, K. (2014, August). *Promises and challenges of intersectional research among Asian American and Pacific Islander women*. Conversation Hour presented at the American Psychological Association 122<sup>nd</sup> Annual Convention, Washington, DC.
- Lui, P. P.**, & Rollock, D. (2014, August). *Measurement equivalence and the NEO-FFI for Asian international and Euro American students*. Poster presented at the Asian American Psychological Association 2014 Annual Convention, Washington, DC.
- Krishnan, A., Rollock, D., & **Lui, P. P.** (2014, August). *The moderation effects of gender and generation status on acculturative stress and well-being in South Asian international students*. Poster presented at the Asian American Psychological Association 2014 Annual Convention, Washington, DC.
- Krishnan, A., Rollock, D., & **Lui, P. P.** (2014, August). *Culture specific goals as predictors of Asian international student well-being*. Poster presented at the American Psychological Association 122<sup>nd</sup> Annual Convention, Washington, DC.
- Lui, P. P.**, Zamboanga, B. L., Tomaso, C. C., & Schwartz, S. J. (2015, August). *Acculturation-alcohol (mis)use link among Asian and Hispanic American young adults: A meta-analysis*. Poster accepted at the Asian American Psychological Association 2015 Annual Convention, Toronto, Canada.
- Zamboanga, B. L., Tomaso, C. C., & **Lui, P. P.** (2015, August). *Acculturation and alcohol use among Asian and Hispanic American college students: A narrative review*. Poster accepted at the Asian American Psychological Association 2015 Annual Convention, Toronto, Canada.

- Rollock, D., Krishnan, A., & **Lui, P. P.** (2015, August). *Goals for international study and moderated mediation of the acculturative stress-depression link*. Poster accepted at the Asian American Psychological Association 2015 Annual Convention, Toronto, Canada.
- Lui, P. P.**, & Rollock, D. (2015, August). *Developmental and Asian culture-specific risks to internalizing and externalizing problems*. Poster accepted at the American Psychological Association, 123<sup>rd</sup> Annual Convention, Toronto, Canada.

### INVITED/OTHER PRESENTATIONS

- Lui, P. P.** (2011, April). *Predicting adjustment among Chinese immigrants: Goals for culture change*. Paper presented at the Clinical Area Colloquium, Department of Psychological Sciences, Purdue University, West Lafayette, IN.
- Lui, P. P.** (2011, September). *Psychological science of tiger mother: Intergenerational conflict, Asian parenting, model minority myth, and ethnic identity*. Paper presented at the Clinical Area Colloquium, Department of Psychological Sciences, Purdue University, West Lafayette, IN.
- Lui, P. P.**, & Wong, R. (2011, October). *Asian American mental health*. Invited guest lecture, Introduction to Asian American Studies (ASAM 201), College of Liberal Arts, Purdue University, West Lafayette, IN.
- Lui, P. P.** & Wong, R. (2012, February). *Asian American mental health: Acculturation and intergenerational cultural conflict*. Invited guest lecture for Introduction to Asian American Studies (ASAM 201), American Studies, College of Liberal Arts, Purdue University, West Lafayette, IN.
- Lui, P. P.** (2012, October). *Asian American families: Cultural values, processes, and interventions*. Invited guest lecture for Family Diversity (HDFS 301), Human Development and Family Studies, College of Health and Human Sciences, Purdue University, West Lafayette, IN.
- Rollock, D., & **Lui, P. P.** (2013, April). *Intergenerational conflict in acculturating Asian families: Normative and cultural value dimensions*. Invited presentation to College of Education, Purdue University, West Lafayette, IN.
- Lui, P. P.** (2014, February). *Asian American families: Cultural values, acculturation, and intergenerational conflict*. Invited guest lecture for Diversity in Individual and Family Life (HDFS 208), Human Development and Family Studies, College of Health and Human Sciences, Purdue University, West Lafayette, IN.
- Lui, P. P.** (2014, August). *Disentangling Universal and Culture-Specific Risks to Mental Health among Asian Americans: A Longitudinal Investigation of Intergenerational Conflicts and Acculturation Mismatch*. Invited presentation for the Dissertation Award Symposium at the Asian American Psychological Association 2014 Annual Convention, Washington, DC.



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## RESEARCH EXPERIENCE

†Denotes recipient of the Outstanding Graduating Senior Award (2012), Psychological Sciences, Purdue University

††Denotes Louis Stokes Alliance for Minority Participation (LSAMP) Scholar, Indiana

**Undergraduate Research Assistant** 2005 – 2008

Relationship Research Institute, Seattle, WA

*PI: John M. Gottman, Ph.D.*

**Undergraduate Research Assistant** 2005 – 2006

Behavioral Research and Therapy Clinic, University of

Washington, Seattle, WA

*PI: Marsha M. Linehan, Ph.D.*

**Graduate Research Assistant** 2008 – 2010

Department of Psychology, California State University - Los Angeles, CA

*Thesis Advisor: Heidi R. Riggio, Ph.D.*

Undergraduate students supervised: Silvia Garcia, B.A., Isabel

Gonzalez, B.A., and Marilyn Orozco, B.A.

**Graduate Research Assistant** 2010 – present

Clinical Area, Department of Psychological Sciences, Purdue

University, West Lafayette, IN

*Major Advisor: David Rollock, Ph.D.*

Undergraduate students supervised: †Afrida Rahman, B.S.,

Victoria Loong, B.A., Ginger Shieh, B.S., Xue (Alice) Yu, B.A.,

†† Courtney Morris, B.A., and Rupali Gautam.

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## UNIVERSITY TEACHING EXPERIENCE

### Teaching Assistant

California State University

Introductory to Psychology ( $n=150$ )

Psychology of the Developing Person ( $n=120$ )

Inferential Statistics in Psychology with Lab ( $n=40$ )

Sex and Gender ( $n=100$ )

### Teaching Assistant

Purdue University

Elementary Psychology ( $n=400$ )

Abnormal Psychology ( $n=125$ )

**Lab/Recitation Instructor**

Abnormal Psychology ( $n=50$ )

Introduction to Research Methods ( $n=20-40$ )

**Lecturer**

Abnormal Psychology ( $n=10-30$  summer sessions,  $n=170-250$  fall-spring sessions)

**PROFESSIONAL & CLINICAL EXPERIENCE****Clinic Coordinator**

*Purdue Psychology Treatment and Research Clinics*

Clinical Psychology program, Purdue University

West Lafayette, IN

**Graduate Student Clinician**

Assessment Clinic

Child Behavior Management Clinic

Adult Services Clinic

*Purdue Psychology Treatment and Research Clinics*

West Lafayette, IN

*River Bend Hospital (Psychiatric Inpatient Unit)*

West Lafayette, IN

Pain Center

Child and Adolescent Mood Clinic

*Riley Hospital for Children/Indiana University Health*

Indianapolis, IN

Primary Care Consultation Service

*Indiana Health Arnett Hospital*

West Lafayette, IN

**REVIEW ACTIVITIES****Ad hoc Reviewer**

*Asian American Journal of Psychology*

*Assessment*

*Cultural Diversity and Ethnic Minority Psychology*

*Journal of Counseling Psychology*

*Journal of Happiness Studies*

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## PROFESSIONAL AFFILIATIONS

Asian American Psychological Association (AAPA)  
 American Psychological Association (APA)  
     Division 12 – Society of Clinical Psychology  
         Section 3 – Society for a Science of Clinical Psychology (SSCP)  
         Section 6 – Clinical Psychology of Ethnic Minority  
     Division 35 – Society for the Psychology of Women  
         Section 5 – Psychology of Asian Pacific American Women  
     Division 45 – Society for the Psychological Study of Ethnic Minority Issues  
 Association for Psychological Science (APS)

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## LEADERSHIP & SERVICE

### University Level

<b>Senator/Department Representative,</b>	2011-2012
Purdue Graduate Student Government	
Purdue University, West Lafayette, IN	

### National Level

<b>Ambassador,</b> American Psychological Association	2011
<b>Convention Planning Committee Member &amp; Poster Committee          Co-Chair</b> Asian American Psychological Association	2013-present
<b>Student Representative,</b> <b>Program Chair,</b> Section 5 Psychology of Asian Pacific American Women Society for the Psychology of Women	2011-2013 2013-2015

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## OTHER CERTIFICATION

**Graduate Teacher Certificate**  
 Purdue University  
 Awarded: November 2011

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**ADVANCED TRAINING COURSES/WORKSHOPS**

*Structural Equation Modeling in Longitudinal Research.* APA Advanced Training Institute/University of California—Davis, Davis, CA. 5/28 – 6/1/2013.

*Research Methods with Diverse Racial and Ethnic Groups.* APA Advanced Training Institute/Michigan State University, East Lansing, MI. 6/10 –14/2013.

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