Bicultural Competence Development Among U.S. Mexican-Origin Adolescents

by

Maria Dalal Safa Pernett

A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

Approved April 2019 by the
Graduate Supervisory Committee:

Rebecca M. B. White, Chair
George P. Knight
Kimberly A. Updegraff
Natalie D. Wilkens

ARIZONA STATE UNIVERSITY

May 2019

ABSTRACT

Biculturalism embodies the degree to which individuals adapt to living within two cultural systems and develop the ability to live effectively across those two cultures. It represents, therefore, a normative developmental task among members of immigrant and ethnic-racial minority groups, and has important implications for psychosocial adjustment. Despite a strong theoretical focus on contextual influences in biculturalism scholarship, the ways in which proximal contexts shape its development are understudied. In my dissertation, I examine the mechanisms via which the family context might influence the development of bicultural competence among a socio-economically diverse sample of 749 U.S. Mexican-origin youths (30% Mexico-born) followed for 7 years (M_{age} = 10.44 to 17.38 years; Wave 1 to 4).

In study 1, I investigated how parents' endorsements of values associated with both mainstream and heritage cultures relate to adolescents' bicultural competence. Longitudinal growth model analyses revealed that parents' endorsements of mainstream and heritage values simultaneously work to influence adolescents' bicultural competence. By examining the effect of multiple and often competing familial contextual influences on adolescent bicultural competence development, this work provides insights on intergenerational cultural transmission and advances scholarship on the culturally bounded nature of human development.

In study 2, I offer a substantial extension to decades of family stress model research focused on how family environmental stressors may compromise parenting behaviors and youth development by testing a culturally informed family stress model. My model (a) incorporates family cultural and ecological stressors, (b) focuses on culturally salient

parenting practices aimed to teach youth about the heritage culture (i.e., ethnic socialization), and (c) examines bicultural competence as a developmental outcome. Findings suggest that parents' high exposure to ecological stressors do not compromise parental ethnic socialization or adolescent bicultural competence development. On the other hand, mothers' exposures to enculturative stressors can disrupt maternal ethnic socialization, and in turn, undermine adolescents' bicultural competence. By examining the influence of multiple family environmental stressors on culturally salient parenting practices, and their implications for adolescent bicultural competence development, this work provides insights on ethnic-racial minority and immigrant families' adapting cultures and advances scholarship on the family stress model.

DEDICATION

I would like to dedicate my work to all the people who feel a part of multiple cultures. To those of you who left your country of origin in search of a dream. To those of you who in search of a dream found yourselves not belonging. To those of you who have felt trapped between two worlds. To those of you who have traveled this journey with grace. To those of you who have found the wisdom to appreciate where you come from and where you built a new home. To those of you who have taken the time to guide others through this amazing but challenging journey. To those of you who call the U.S. home regardless of what you look like, where you were born, and how you arrived here.

ACKNOWLEDGMENTS

I would like to express my utmost gratitude… Quisiera expresar mi inmensa gratitud…

To Dr. Rebecca M. B. White, who has been exceptionally supportive of my career goals. She has provided me with invaluable resources and guidance to pursue my goals, and she has held me accountable to the highest standards of culturally informed research. As my teacher and mentor, she has taught me more that I could ever give her credit for here. She has shown me, by her example, what a good scholar and mentor should be like.

To Dr. George Knight, who has been instrumental in my development as a biculturalism scholar. He has paved the way and provided me with unwavering support in each step.

To Dr. Natalie Wilkens, who has been a remarkable mentor. She has filled important gaps in my training and created opportunities for me to achieve my goals.

To Dr. Kimberly Updegraff, whose door has always been open for me. She has guided me through the biggest challenges and helped me to find my niche.

To Dr. Jennifer Glick, who has supported me from beginning to end. She has afforded me unique opportunities to develop as a cross-cultural migration scholar.

To the La Familia family, who has made this work possible. To the scholars, who have created a platform for me to advance my research. To the staff members, who have shown such professionalism and commitment. To the participants, who have shared their experiences with us for over a decade. I feel honored to have been able to capture and document a small portion of their lives.

To the members of the LRE, the FAMELO project, the ECLiPSE Lab, and the DISI, who have contributed immensely to my success and who have opened doors so I could acquire an interdisciplinary, in-depth, and rewarding training.

To Michelle, who has been the best lab sister and friend anyone could ask for. She has been a light in the challenging moments and a joy in the rewarding ones.

To my friends and to all the FHD graduate students, who have been an important part of this journey and provided their support and encouragement along the way. Especially, to Jo, Diana, Danming, Larissa, Manuela, Grace, and Lauren, who have shared their wisdom with me and have helped me keep things in perspective.

To my previous teachers and mentors at ULB, USF, HCC, and Colegio Javeriano, who built a strong foundation and provided me with support and guidance so I could pursue and achieve my academic goals across different educational settings and countries.

To Dustin, who has been an exceptionally loving, supportive, patient, and selfless partner from beginning to end. He has always believed in me, has never stopped pushing me towards success, and has helped me to not lose sight of what it is most important. He has done so many little and big things that have immensely contributed to my success. I feel lucky to have had such a great friend and partner throughout this journey!

A todos mis familiares, quienes han sido los principales promotores de mis sueños y han caminado a mi lado a lo largo de los años.

A mi madre, a mi padre y a mi hermano, quienes han sido mi constante, mi soporte y mi brújula. Cada uno de ellos con sus sacrificios y enseñanzas ha hecho posible que mis sueños se hagan realidad. Ellos han sido un ejemplo a seguir en todo el sentido de la palabra. Nunca han permitido que me sienta sola a pesar de los miles de kilómetros que nos separan. Siempre han creído en mí y me han dado su amor incondicional. ¡Realmente no hay palabras suficientes para expresar toda la gratitud y el infinito amor que siento por cada uno de ellos! No sería quien soy sin ellos y me siento muy afortunada de tenerlos.

TABLE OF CONTENTS

Page

LIST OF TABLES x

LIST OF FIGURES xi

DISSERTATION OVERVIEW 1

PAPER 1: FAMILY CONTEXTUAL EFFECT ON BICULTURAL COMPETENCE DEVELOPMENT AMONG U.S. MEXICAN-ORIGIN ADOLESCENTS 5

Bicultural Competence Development 6

Family Context and Youth's Bicultural Competence Development 9

Parental enculturation and acculturation concurrent effects on youth's bicultural competence development. 10

The Current Study 15

Method 17

Participants 17

Procedure 18

Measures 18

Parents' enculturative and acculturative values (5th, 7th, and 10th grades). 18

Adolescents' bicultural competence (12th grade). 20

Demographics and covariates. 21

Analytic Plan 21

Results 23

Preliminary Analyses 23

Maternal Contextual Effect on Adolescents' Bicultural Competence Development 26

Page

Paternal Contextual Effect on Adolescents' Bicultural Competence Development 36
Discussion 43
Parental Enculturation and Acculturation Trajectories 44
Parental Contextual Effect on Adolescents' Bicultural Competence Development 45
Maternal enculturation and acculturation interaction effect. 45
Paternal enculturation effect. 47
Paternal acculturation effect. 49
Maternal and Paternal Contextual Effects on Adolescents' Bicultural Competence Development 50
Adolescent Gender and Nativity Differences 52
Limitations and Future Directions 53
Conclusion 55
PAPER 2: A FAMILY STRESS MODEL INVESTIGATION OF THE DEVELOPMENT OF BICULTURAL COMPETENCE AMONG MEXICAN-ORIGIN ADOLESCENTS 56
The Influence of Parental Ecological and Cultural Stressors on Parenting and Youth's Development 58
Parental Ethnic Socialization and Youth's Bicultural Competence 62
Youth's Gender and Nativity Differences 64
The Current Study 65
Method 66
Participants 66

Page

Procedure 67
Measures 68
Demographics and covariates. 68
Parents' ecological stressors (5th grade). 69
Parents' cultural stressors or language competency pressures (5th grade). 70
Parents' ethnic socialization (5th and 7th grades). 71
Adolescents' bicultural competence (10th grade). 71
Analytic Plan 73
Results 74
Preliminary Analyses 74
Effects of Maternal Exposures to Environmental Stressors on Adolescents' Bicultural Competence via Maternal Ethnic Socialization 76
Effects of Paternal Exposures to Environmental Stressors on Adolescents' Bicultural Competence via Paternal Ethnic Socialization 78
Discussion 80
Family Stress Model Effects on Ethnic Socialization and Adolescent Bicultural Competence 81
Environmental Stressors and Parental Ethnic Socialization 83
Enculturative stressors. 83
Other environmental stressors. 85
Parental Ethnic Socialization and Adolescent Bicultural Competence 88
Adolescent Gender and Nativity Differences 89

Page

Limitations and Future Directions 90

Conclusions 91

DISSERTATION CONCLUSIONS 92

REFERENCES 95

LIST OF TABLES

Table Page

1. Summary of Descriptive Statistics and Intercorrelations for Study Variables in the Mother-Adolescent Dyad Sample (*N* = 749) 109

2. Summary of Descriptive Statistics and Intercorrelations for Study Variables in the Father-Adolescent Dyad Sample (*n* = 579) 110

3. Summary of Mothers' Enculturation and Acculturation Growth Factors 111

4. Summary of Fathers' Enculturation and Acculturation Growth Factors 119

5. Summary of Descriptive Statistics and Intercorrelations for Study Variables in the Mother-Adolescent Dyad Sample (*N* = 749) 126

6. Summary of Descriptive Statistics and Intercorrelations for Study Variables in the Father-Adolescent Dyad Sample (*n* = 579) 127

LIST OF FIGURES

Figure Page

1. Test of Hypothesized Parallel Process Model for Mothers' Enculturation and Acculturation Growth Trajectories *(N* = 749) …… 112

2. Test of Hypothesized Parallel Process Model for Mothers' Enculturation and Acculturation Growth Trajectories with Mothers' Nativity as a Predictor of Growth Factors *(N* = 749) ……...…… 113

3. Test of Hypothesized Parallel Process Model of Mothers' Enculturation and Acculturation Growth Trajectories Predicting their Adolescents' Bicultural Competence *(N* = 749) ...…… 114

4. Test of Hypothesized Parallel Process Model of Mothers' Enculturation and Acculturation Growth Trajectories Predicting their Adolescents' Bicultural Competence with Adolescents' Gender and Nativity Covariates *(N* = 749) ……. 115

5. Test for Null Model Comparison: Parallel Process of Mothers' Enculturation and Acculturation Growth Trajectories Predicting their Adolescents' Bicultural Competence Without Auxiliary Variable *(N* = 749) …… 116

6. (Final Model) Test of Hypothesized Parallel Process Model of Mothers' Enculturation and Acculturation Growth Trajectories Predicting their Adolescents' Bicultural Competence with Intercepts Interaction *(N* = 749) ……...……. 117

7. Moderating Role of Mothers' Enculturation Intercepts (Target Adolescent In 5th Grade)

in the Association Between Mothers' Acculturation Intercepts (Target Adolescent In 5th Grade) and Adolescents' 12th Grade Bicultural Competence ...…… 118

Figure Page

8. Test of Hypothesized Parallel Process Model for Fathers' Enculturation and Acculturation Growth Trajectories *(N* = 579) ……...……. 120

9. Test of Hypothesized Parallel Process Model for Fathers' Enculturation and Acculturation Growth Trajectories with Fathers' Nativity as a Predictor of Growth Factors *(N* = 579) ……..……. 121

10. (Final Model) Test of Hypothesized Parallel Process Model of Fathers' Enculturation and Acculturation Growth Trajectories Predicting their Adolescents' Bicultural Competence *(N* = 579) ……...……. 122

11. Test of Hypothesized Parallel Process Model of Fathers' Enculturation and Acculturation Growth Trajectories Predicting their Adolescents' Bicultural Competence with Adolescents' Gender and Nativity Covariates *(N* = 579) ...…… 123

12. Test for Null Model Comparison: Parallel Process of Fathers' Enculturation and Acculturation Growth Trajectories Predicting their Adolescents' Bicultural Competence Without Auxiliary Variable *(N* = 579) ..……..……..... 124

13a and 13b. Conceptual and Investigated Models …..…….…… 125

14. (FINAL MODEL) Test of Hypothesized Model Linking 5th Grade Mothers' Exposure to Ecological Stressors, English Language Competency Pressures, and Spanish Language Competency Pressures to 10th Grade Adolescents' Bicultural Competence via 7th Grade Mothers' Ethnic Socialization (*N* = 749) ……..… 128

Figure Page

15. Test of Hypothesized Model Linking 5th Grade Mothers' Exposure to Ecological Stressors, English Language Competency Pressures, and Spanish Language Competency Pressures to 10th Grade Adolescents' Bicultural Competence via 7th Grade Mothers' Ethnic Socialization with Adolescents' Gender and Nativity Covariates (*N* = 749) ……...…… 129

16. (FINAL MODEL) Test of Hypothesized Model Linking 5th Grade Fathers' Exposure to Ecological Stressors, English Language Competency Pressures, and Spanish Language Competency Pressures to 10th Grade Adolescents' Bicultural Competence via 7th Grade Fathers' Ethnic Socialization (*n* = 579) ……...…….. 130

17. Test of Hypothesized Model Linking 5th Grade Fathers' Exposure to Ecological Stressors, English Language Competency Pressures, and Spanish Language Competency Pressures to 10th Grade Adolescents' Bicultural Competence via 7th Grade Fathers' Ethnic Socialization with Adolescents' Gender and Nativity Covariates (*n* = 579) ……..……... 131

Dissertation Overview

Numerous ethnic-racial minority and immigrant youth, a large and growing segment of the U.S. population (Census, 2011), live within two cultural systems (e.g., an ethnic-racial or heritage cultural system and a mainstream or host cultural system) and many become bicultural individuals (Marks & Patton, 2011; Motti-Stefanidi, 2018). *Being bicultural* refers to *internalizing* affiliations, attitudes, behaviors, knowledge, and values from two cultural systems and *developing the competence* needed to successfully respond to culturally specific cues and demands (Basilio et al., 2014; Nguyen & Benet-Martinez, 2007). *Bicultural competence* includes many skills and components. For example, it includes individuals' abilities to jointly navigate heritage and host cultural domains (e.g., developing friendships with members from the heritage and the host culture), to switch between cultural frameworks (e.g., frame-switching; Hong, Morris, Chiu, & Benet-Martinez, 2000), and to integrate heritage and host culture affiliations (i.e., bicultural identity integration; Benet-Martinez & Haritatos, 2005). Furthermore, bicultural competence includes affective, cognitive, and behavioral components. For instance, it includes individuals' feelings of comfort while responding to bicultural demands (bicultural comfort), perceived advantage in their ability to respond to bicultural demands (bicultural advantage), and perceived facility when responding to bicultural demands (bicultural facility; Basilio et al., 2014; LaFromboise, Coleman, & Gerton, 1993; Schwartz & Unger, 2010).

Internalizing two cultures and developing competencies to respond to bicultural demands have been theorized as an adaptive response to direct exposure to more than one cultural system (Nguyen & Benet-Martinez, 2007), hence as a normative developmental

task for ethnic-racial minority and immigrant youth (Motti-Stefanidi, 2018). Furthermore, bicultural competence has been empirically linked to other indicators of positive adjustment, such as higher levels of general self-efficacy (Carlo, Basilio, & Knight, 2016; David, Okazaki, & Saw, 2009), life-satisfaction (David et al., 2009), prosocial tendencies, and self-esteem (Carlo et al., 2016), and to lower levels of internalizing (Carrera & Wei, 2014; David et al., 2009; Wei et al., 2010) and externalizing symptoms (Safa et al., 2018).

In light of the large segment of the U.S. population who has been exposed to more than one cultural system and the benefits associated with developing bicultural competence, studying biculturalism has received more attention in the last decades (Nguyen & Benet-Martinez, 2013). Biculturalism scholarship, however, has suffered from many limitations including underdeveloped theories (West, Zhang, Yampolsky, & Sasaki, 2017), indirect assessments (Basilio et al., 2014), and lack of developmental and contextual considerations (Safa & White, 2019; Schwartz & Unger, 2010; Yoon, Langrehr, & Ong, 2011). This work bridges important gaps in the body of biculturalism literature by relying on a culturally informed developmental and contextual perspective. First, I assessed three components of bicultural competence including bicultural comfort, facility, and advantage in a sample of Mexican-origin participants, the largest immigrant group in the U.S. (Migration Policy Institute, 2016). Second, I relied on a developmental and contextual perspective to understand how family contextual factors might promote or undermine the development of adolescents' bicultural competence. Adolescence is a period in which youth experience increased exposure to multiple sociocultural contexts (Leventhal, Dupéré, & Brooks-Gunn, 2009; Steinberg, 2008) that can significantly shape

affordances and demands associated with heritage and host cultures, thus, bicultural competence development.

Furthermore, I concentrated on the family context because family is an influential proximal developmental context (Bronfenbrenner & Morris, 2006) and because of the central role of family in Mexican culture (Knight, Bernal, Garza, Cota, & Ocampo, 1993). In addition, I employed a culturally informed theoretical approach to examine the influence of three important characteristics found among ethnic-racial minority and immigrant families on their adolescents' bicultural competence development. Specifically, these studies recognize that ethnic-racial minority and immigrant parents (1) undergo dual-cultural adaptation, or adapt to living within the ethnic-racial or heritage culture (enculturation) and the mainstream or host culture (acculturation); (2) might be exposed to cultural stressors associated with the processes involved in dual-cultural adaptation and to other environmental stressors that tend to co-occur with these, and (3) engage in culturally salient parenting practices to teach their youth about the ethnic-racial or heritage culture (i.e., ethnic socialization; Garcia Coll & Pachter, 2002). These unique characteristics might present shifting demands and affordances specific to the heritage and the host cultures that can influence the development of youth's bicultural competence (Berry, Phinney, Sam, & Vedder, 2006; Ward & Geeraert, 2016).

In paper 1, I examined how dual-cultural adaptation in the family context relate to adolescents' bicultural competence development. Specifically, I investigated how parents' own trajectories in their orientations toward Mexican American culture (enculturation) and mainstream culture (acculturation) relate to the development of their adolescents' bicultural competence. Though prior work has examined how parents'

cultural orientations relate to youths' cultural orientations (De Houwer, 2007; Kim & Hou, 2016), this is the first study to examine how *trajectories over time* in parents' value-based orientations (i.e., endorsement of values associated with each culture) relate to adolescents' bicultural competence. Findings have critical implications for an understanding of how parents' adaptation to the heritage and host cultures influence adolescents' development of bicultural competence. Furthermore, findings advance empirical knowledge regarding the role of parents' values on intergenerational cultural transmission.

In paper 2, I explored a mechanism by which family environmental stressors might undermine adolescents' bicultural competence. Specifically, I investigated whether stressors in the family system undermine adolescents' bicultural competence development by disrupting parents' ethnic socialization, a normative parenting practice among ethnic-racial minority and immigrant parents (Hughes et al., 2006). This study offers a substantial extension to decades of family stress model research focused on how family environmental stressors compromise parenting practices and youth development (Conger, Conger, & Martin, 2010) by (a) incorporating family environmental stressors that may be particularly salient to U.S. Mexican-origin families (e.g., economic hardship, neighborhood danger, and English or Spanish language competency pressures), (b) focusing on parenting practices that are particularly salient to U.S. Mexican-origin adolescents (e.g., ethnic socialization; Knight et al., 1993), and (c) extending the range of developmental outcomes to include different components of bicultural competence (e.g., bicultural comfort, facility, and advantage). Findings have critical implications for an understanding of key family processes among ethnic-racial minority and immigrant

families and their influence on adolescents' bicultural competence development. Findings also contribute to understanding the degree to which the family stress model generalizes across family environmental stressors, parenting practices, and indicators of adolescents' adjustment.

Together these studies capture the lived experiences of ethnic-racial minority and immigrant youth and advance scientific knowledge regarding the development of bicultural competence. Findings from these studies increase an understanding of how both promoting characteristics (i.e., parents' adaptation to host culture) and inhibiting characteristics (i.e., parental exposure to cultural stressors linked to dual-cultural adaptation) found among ethnic-racial minority and immigrant families can simultaneously work to influence the development of adolescents' bicultural competence (Garcia Coll et al., 1996).

Paper 1: Family Contextual Effect on Bicultural Competence Development Among U.S. Mexican-Origin Adolescents

According to the U.S. census bureau, by 2044 more than half of the U.S. population is projected to belong to a minority group (any group other than White, non-Hispanic). It is also projected that by 2060, nearly one in five of the nation's total population will be foreign-born. In light of these projections, research on *biculturalism* is timely and significant. Individuals who internalize two cultural-knowledge systems (e.g., ethnic-racial or heritage and mainstream or host cultural systems; Benet-Martinez, Leu, Lee, & Morris, 2002) and who develop *bicultural competence*, the ability to function successfully within bicultural contexts, are referred to as *bicultural* individuals (LaFromboise, Coleman, & Gerton, 1993).

Biculturalism has been theorized to be an adaptive response for ethnic-racial minority and immigrant youth who are exposed to more than one cultural system (Motti-Stefanidi, 2018; Nguyen & Benet-Martínez, 2007; 2013; Umaña-Taylor & Updegraff, 2007). Little is known, however, regarding family contextual effects on youth's bicultural competence development. The current study bridges important gaps in biculturalism literature by examining how dual-cultural adaptation in the family context relates to adolescents' bicultural competence development. First, I identified parents' trajectories of endorsement of values associated with the heritage culture (value-based enculturation) and with the host culture (value-based acculturation). Second, I investigated how parents' value-based enculturation and acculturation trajectories *across their youths' development,* from late childhood to middle adolescence, relate to the development of adolescents' bicultural competence in late adolescence. Adolescence is an important period to examine such associations because it is a period wherein youth are gaining increasing cognitive abilities (Arnett, 2014) that enable their understanding of complex culturally situated demands associated with different cultural systems (Knight, Safa, & White, 2018; Schwartz et al., 2015). Further, their growing autonomy allows for more independent exploration of their proximal contexts and family relationships (Leventhal, Dupéré, & Brooks-Gunn, 2009; Steinberg, 2008). This study focused on Mexican-origin individuals, the largest immigrant group in the U.S. (Migration Policy Institute, 2016), to support direct assessment of values and bicultural competence specific to Mexican and mainstream cultural systems.

Bicultural Competence Development

Bicultural competence includes the skills that enable individuals to (a) concurrently navigate heritage and host cultural domains (i.e., affiliation, attitudes, behaviors, knowledge, and values), (b) switch between cultural frames of reference (e.g., frame-switching; Benet-Martinez et al., 2002; Hong, Morris, Chiu, Benet-Martinez, 2000), (c) integrate heritage and host cultural identities (i.e., bicultural identity integration; Benet-Martinez & Haritatos, 2005; Huynh, 2009), and (d) access and combine diverse perspectives (i.e., integrative complexity; Tadmor, Galinsky, & Maddux, 2012; Tadmor & Tetlock, 2006). Bicultural competence encompasses different components, including cognitive, behavioral, and affective components. For instance, it includes individuals' perceived advantage in their ability to manage bicultural demands (bicultural advantage), individuals' perceived facility to respond to bicultural demands (bicultural facility), and individuals' feelings of comfort while managing bicultural demands (bicultural comfort, Basilio et al., 2014; David, Okazaki, & Saw, 2009; LaFromboise et al., 1993; Schwartz & Unger, 2010).

Youth's bicultural competence development is influenced by the affordances and demands associated with the heritage and the host cultures (Berry, Phinney, Sam, & Vedder, 2006) and the intersection between the demands and affordances from those cultural systems (Ward & Geeraert, 2016) that youth encounter in the proximal family, school, and neighborhood contexts in which they are embedded (Bronfenbrenner & Morris, 2006; Garcia Coll et al., 1996). In this way, the development of bicultural competence is influenced by both general developmental processes (e.g., maturation) and culturally specific developmental processes (e.g., adapting to heritage and host cultures). Hence, theoretical frameworks that emphasize the intricate relation between general

developmental processes and culturally specific developmental processes that help ethnic-racial minority and immigrant youth to adapt to two different cultural systems (Garcia Coll et al., 1996; Motti-Stefanidi, Berry, Chryssochoou, Sam, & Phinney, 2012; Titzmann & Lee, 2018) are important in the study of youth's bicultural competence development. Regarding general developmental processes, as youth develop and change, their developmental contexts are also changing. For instance, children spend more time in family contexts whereas adolescents spend more time in school and neighborhood contexts (Leventhal et al., 2009); furthermore, within family contexts youth experience more autonomy as they grow (Steinberg, 2008). Regarding culturally specific developmental processes, parenting goals and childrearing practices change as immigrant parents adapt to living within heritage (enculturation) and host cultural systems (acculturation; Kim, Shen, Huang, Wang, & Orozco-Lapray, 2014; McHale, Updegraff, Shanahan, Crouter, & Killoren, 2005; Romero, Cuellar, & Roberts, 2000). In the context of parental enculturation and acculturation, youth may experience shifting developmental affordances and demands (Masten & Obradović, 2006) that have important implications for their development of bicultural competence.

Even though bicultural competence development is a normative developmental task for youths exposed to two cultural systems (Motti-Stefanidi, 2018; Safa et al., 2018), empirical research examining any aspect of biculturalism development is scarce in the psychological literature. For instance, a recent PsycINFO database search using "bicultur*" AND "develop*" as keywords only yielded 33 substantively relevant peer-reviewed studies. Furthermore, a systematic review of the biculturalism literature among U.S. Latinos showed an overreliance on cross-sectional designs and indirect measures of

biculturalism, and lack of developmental considerations (Safa & White, 2019). Similarly, the role of context has been understudied in biculturalism research (Yoon, Langrehr, & Ong, 2011). The same systematic review showed that most studies were not designed to assess the influence of proximal contexts (e.g., family, school, neighborhood) on biculturalism development. Only five studies (10%) investigated the association between biculturalism and family context (e.g., family functioning, family support) and one study (2%) assessed the association between biculturalism and individuals' opportunities to engage in cultural practices from both the Latino and the mainstream American culture, an indirect assessment of context (Safa & White, 2019). Researchers, however, have increasingly highlighted the importance of including developmental and contextual perspectives in biculturalism research (e.g., Bornstein, 2017; Motti-Stefanidi et al., 2012; Titzmann & Lee, 2018). The current study addresses some of the aforementioned gaps by examining family contextual effects over time (i.e., parents' trajectories in endorsement of values associated with heritage and host cultural systems) on the development of adolescents' bicultural competence.

Family Context and Youth's Bicultural Competence Development

Theoretical models of biculturalism posit that individuals need to experience opportunities to learn about both the heritage and the host cultures in the contexts in which they are embedded (Berry, 1974; LaFromboise et al., 1993; Ward & Geeraert, 2016). The most proximal context for children and adolescents' development is the family context (Bronfenbrenner & Morris, 2006; Garcia Coll et al., 1996). For ethnic-racial minority and immigrant youth, the family context is often the primary context in which youth learn about the *heritage culture* (Knight et al., 1993; Knight, Carlo, Mahrer,

& Davis, 2016; Motti-Stefanidi, 2018). Importantly, for youths who migrate from their country of origin at an early age and for those who are born in the host country, learning about the heritage culture is especially relevant for the development of heritage culture competencies (Knight et al., 1993; Umaña-Taylor et al., 2009) required for bicultural competence development. In the family context, however, youth also experience opportunities to learn about the *host culture* (Gonzales, Knight, Morgan-Lopez, Saenz, & Sirolli 2002) because the goal of many ethnic-racial minority and immigrant parents' is to rear children and adolescents who are bicultural (e.g., learn values that reflect both ethnic-racial or heritage and mainstream or host cultures) so they can live successfully within two cultural systems (Aldoney & Cabrera, 2016; Kim & Hou, 2016; Tam & Chan, 2015). Furthermore, ethnic-racial minority and immigrant parents also engage in an active process of endorsement and rejection of host culture values (Keller, 2003) and parents' endorsement of the heritage and host cultures' values can influence their parenting goals, beliefs, and practices (Bornstein & Cote, 2006; Knight, Carlo, Mahrer, & Davis, 2016; Knight et al., 2011; Palacios & Moreno, 1996). Parents' trajectories in cultural value endorsement, therefore, might influence the extent to which youth are exposed to the heritage and the host cultures by influencing the affordances and demands associated with each cultural system. Hence, some family contexts might provide youth with abundant opportunities to develop bicultural competence while other family contexts might provide few affordances (Bornstein, 2017).

Parental enculturation and acculturation concurrent effects on youth's bicultural competence development. *Dual-cultural adaptation* encompasses two processes. It involves adaptation to ethnic-racial or heritage culture (*enculturation*) and

adaptation to mainstream or host culture (*acculturation*), both of which unfold over time across individuals' lifespan (Oppedal, 2006; Sam & Berry, 2006), that result in some degree of change in heritage and host cultural domains (i.e., values, identifications, attitudes, practices, beliefs, and/or knowledge; Gonzales et al., 2002; Schwartz, Unger, Zamboanga, & Szapocnik, 2010). Importantly, changes in cultural domains may take place at different rates and have different implications for dual-cultural adaptation (Schwartz et al., 2010; 2015). For instance, the ability to switch between values of familism and individualism requires additional emotional and cognitive skills than the ability to switch between Spanish and English languages (Knight et al., 2009). Longitudinal parallel research, primarily with adolescents, captures both processes involved in dual-cultural adaptation and has shown that enculturation and acculturation processes (across various cultural domains) appear to change in similar directions (increasing or decreasing parallel trajectories; Doucerain et al., 2016; Knight et al., 2009; Schwartz et al., 2013, 2015). Further, generational status (the more family generations that are born in the U.S.) predicts different types of individuals' trajectories of enculturation and acculturation (Knight et al., 2009; 2010; Schwartz et al., 2013). These findings suggest that while these are separate processes associated with two different cultural systems, enculturation and acculturation processes are not orthogonal from each other (Knight et al., 2009; 2014). Thus, it may be critical to examine parents' parallel trajectories of enculturation and acculturation to capture the concurrent effects of both processes of dual-cultural adaptation on youth's development of bicultural competence.

Prior work documents variability in U.S. Latino enculturation and acculturation processes, which likely have important implications for youth's bicultural competence

development (Schwartz et al., 2013). Further, changes in parents' trajectories can be expected during their children's developmental transitions (Bornstein & Cote, 2006; Garcia Coll & Pachter, 2002), particularly as children transition to adolescence, because their expanding social worlds may pose new cultural adaptation challenges for parents (Gonzales et al., 2018). Variability in parents' trajectories in value endorsement might influence youth's affordances and demands associated with the heritage and the host cultures (Bornstein, 2017) because parents' values influence their parenting goals, practices, and beliefs (Bornstein & Cote, 2006; Knight et al., 2011; 2016; Palacios & Moreno, 1996; White, Zeiders, Gonzales, Tein, & Roosa, 2013). In family contexts characterized by high parental enculturation and acculturation, therefore, youth might experience more opportunities to interact with members from the heritage and the host cultures, to participate in heritage and host culture traditions, to speak heritage and host culture languages, to feel part of the heritage and host communities, and to learn and internalize values deemed important in the heritage and host cultures. Furthermore, exposure to both cultural systems might provide opportunities for youths to develop bicultural competence including abilities to integrate and concurrently navigate heritage and host cultural domains, to frame-switch, and to manage bicultural demands with facility, comfort, and perceived advantage. It is also possible, however, that youth primarily learn about the heritage culture from parents and about the host culture from peers (Knight et al., 1993; 2016). Thus, it is important to examine whether higher parental enculturation and acculturation intercepts or more positive slopes are associated with higher degrees of bicultural competence among youth.

Though the theoretical foundation is strong (Berry, 1974; LaFromboise et al., 1993; Ward & Geeraert, 2016), there is limited and only indirect evidence for the association between parental enculturation and acculturation processes and youth's bicultural competence in the extant literature. This evidence largely stems from examining the link between different indicators of parents' biculturalism and youths' biculturalism. For example, Belgian parents' bilingualism was positively associated with their children's bilingualism, and the association was stronger when parents consistently used both languages at home (De Houwer, 2007). Additionally, U.S. Chinese immigrant mothers' (but not fathers') bicultural socialization beliefs, beliefs about the importance of teaching their youth about heritage and host cultures, were positively associated with youths' dual-cultural orientations (i.e., Chinese American). The positive association between mothers' host orientations and mothers' bicultural socialization beliefs, however, was stronger when their heritage orientations were lower (Kim & Hou, 2016). These findings underscore the influence of parental orientations toward heritage and host cultures on their socialization beliefs, and consequently on adolescent bicultural competence development.

As enculturation and acculturation processes are theorized to be essential to the development of biculturalism (Gonzales et al., 2002; Nguyen & Benet-Martínez, 2007), the research linking parents' and adolescents' biculturalism offers indirect evidence that parents' enculturation and acculturation matter for youths' biculturalism. It may, however, be critical to explore the antecedent processes of parental enculturation and acculturation, because, especially among immigrant families, these processes could be influencing youth's opportunities to develop bicultural competence before parents

(themselves) achieve high levels of bicultural competence (Knight et al., 2018). Further, the existing research has not examined parental value-based enculturation and acculturation processes over time and has not assessed cognitive, behavioral, and affective components of adolescent bicultural competence. Examining the concurrent influence of parents' value-based enculturation and acculturation trajectories on youth's bicultural competence development can provide insights on intergenerational cultural transmission and on the transactional nature of these processes.

Furthermore, prior research focusing on parents' indicators of high enculturation or high acculturation underscores the importance of the family context for youth development of heritage and host culture competencies, though youth's bicultural competence was not examined directly in these studies. For instance, U.S. Mexican-origin mothers' endorsement of heritage culture values and engagement in heritage culture socialization were positively associated with youths' endorsement of heritage culture values two years later (Knight et al., 2011) and U.S. Latino youths' reports of familial heritage culture socialization were positively associated with youths' heritage identity over a 4-year span (Umaña-Taylor & Guimond, 2012). Similarly, U.S. Latino parents' English language proficiency was positively associated with youths' English language proficiency and host culture orientations (Roche, Ghazarian, & Fernandez-Esquer, 2012). Furthermore, parental heritage culture socialization was positively associated with U.S. Asian female adolescents' heritage and host identities (Gartner et al., 2014) and with U.S. Latino adolescents' endorsement of bicultural orientations, including affiliations, behaviors, knowledge, and values associated with the heritage and the host cultures (Schwartz & Zamboanga, 2008). These studies suggest that the family context

can provide youth with both enculturative and acculturative affordances. The current study extends prior research by examining how dual-cultural adaptation in the family context related to parental enculturation and acculturation trajectories over time might influence adolescents' development of bicultural competence.

In addition, family contexts are simultaneously shaped by youths' characteristics (e.g., gender and nativity) and there is empirical evidence suggesting differences by youths' characteristics in parenting processes among U.S. Mexican-origin and Latino families. For example, Latino parents grant less autonomy and are more demanding of girls compared to boys (Domènech Rodriguez, Donovick, & Crowley, 2009). Furthermore, girls are expected to remain close to the family whereas boys are allowed more freedom to explore contexts outside the family (Raffaely & Ontai, 2004). Thus, the effects of parental enculturation and acculturation trajectories on youth's development of bicultural competence may be higher for girls. Moreover, research on Mexican-origin parents' efforts to teach their youth about the ethnic-racial or heritage culture (i.e., ethnic socialization) suggests that in families where there is longer history of U.S.-born generations, youth may be driving the process of parental ethnic socialization whereas in families with more recent history of immigration the process seems to be family-driven (Umaña-Taylor, Zeiders, & Updegraff, 2013). Similarly, Latino youths' reports on their parents' engagement in ethnic socialization practices decrease as youths' generational statuses increase (Umana-Taylor et al., 2009). Thus, the effects of parental enculturation and acculturation trajectories on youth's bicultural competence may be higher for youths born in Mexico.

The Current Study

This is the first study to examine how trajectories over time in parents' endorsement of values associated with heritage and host cultures relate to adolescents' bicultural competence. First, I identified U.S. Mexican-origin parents' parallel trajectories of value-based enculturation and acculturation (i.e., change or stability in the endorsement of values relatively more often associated with the Mexican American culture and values relatively more often associated with the mainstream American culture). Second, I investigated how parents' value-based enculturation and acculturation trajectories *across their youths' development*, from late childhood to middle adolescence (5^{th} to 10^{th} grades), relate to adolescents' development of bicultural competence in late adolescence (12^{th} grade). I was unable to control for prior levels of adolescents' bicultural competence (i.e., 5^{th} grade) because the three assessed components of bicultural competence are not developmentally appropriate constructs during childhood (Basilio et al., 2014). I controlled, therefore, for adolescents' 5^{th} grade endorsement of Mexican American and mainstream American values, as these constructs are developmentally appropriate during late childhood and are differentially but strongly related to bicultural competence (Knight et al., 2014). I tested whether higher enculturation *or* acculturation intercepts and/or more positive slopes would predict higher adolescents' bicultural competence (Hypothesis 1) and examined whether the influence of parental enculturation and acculturation would be greater for female adolescents (Hypothesis 2), and for adolescents born in Mexico (Hypothesis 3). Last, to capture the joint effects of parental enculturation and acculturation trajectories, I tested prediction of adolescents' bicultural competence from the interaction between parental enculturation and acculturation intercepts/slopes. Specifically, I examined whether higher enculturation *and* acculturation

intercepts and/or more positive slopes would predict higher adolescents' bicultural competence (Hypothesis 4).

Method

Participants

Data were from an ongoing longitudinal study of cultural and contextual influences in the lives of U.S. Mexican-origin adolescents and their families (Roosa et al., 2008). Participants included 749 Mexican-origin adolescents (49% female), their mothers, and a subsample of fathers selected from schools in the Phoenix metropolitan area that served ethnically and linguistically diverse communities. Families were eligible if they had a target 5th grader attending a sampled school; the participating mother was the biological mother, lived with the child, and was of Mexican-origin; the child's biological father was of Mexican-origin; the child was not learning disabled; and no stepfather figure was living with the child. Out of the 749 families, 579 were two-parent families and 80% of fathers in these two-parent families agreed to participate (n = 467).

The current study uses data from the first (W1, 5th grade), second (W2, 7th grade), third (W3, 10th grade), and fourth (W4, 12th grade) waves. In 5th grade, 30.2% of mothers, 23.2% of fathers, and 82.5% of adolescents chose to be interviewed in English and the remaining in Spanish. The majority of mothers (74.3%) and fathers (79.9%) were born in Mexico. First generation immigrant mothers had been living in the U.S. for an average of 12.57 years (SD = 7.91) and fathers for an average of 14.58 years (SD = 8.14). The majority of adolescents were born in the U.S. (70.3%). Mean age was 35.9 years (SD = 5.81) for mothers, 38.1 years (SD = 6.26) for fathers, and 10.42 years (SD = .55) for adolescents. Both parents reported about 10 years of education (SD_M = 3.67; SD_F =

3.94). Annual family incomes ranged from less than $5,000 to more than $95,000 (mean $30,000 – $35,000). Of the original 749 families, 94.8% participated in 7th grade, 85.2% participated in the 10th grade, and 83.8% participated in 12th grade.

Procedure

Study procedures were approved by the institutional review board at Arizona State University. Complete research procedures are published elsewhere (Roosa et al., 2008). Adolescents, mothers, and fathers completed computer assisted personal interviews (approximately 2.5 hours) at their home, in their preferred language. The interviewers received at least 40 hours of training that included information on the study's goals, characteristics of the target population, the importance of professional conduct when visiting participants' homes as well as throughout the process, and the critical role they would play in collecting the data. Participants were compensated $45, $50, $55, and $60 at each respective wave. Retention efforts included recurrent personal communication with participants, efforts to build a sense of belonging or attachment to the study, providing incentives for participants to remain in contact with researchers, and developing plans to locate participants with whom contact was lost.

Measures

Parents' enculturative and acculturative values (5th, 7th, and 10th grades).

Mothers and fathers reported on their *endorsement of Mexican American and mainstream values* using the Mexican American Cultural Values Scale (MACVS; Knight et al., 2010). Previous work supported the construct validity and reliability of the measure for use with U.S. Mexican-origin participants (Cruz et al., 2017; Knight et al., 2010). The Mexican American values scale consists of 5 correlated subscales from MACVS:

Familism-Support (6 items, e.g., ‘‘parents should teach their children that the family always comes first’’); Familism-Obligation (5 items, e.g., ‘‘if a relative is having a hard time financially, one should help them out if possible’’); Familism-Referents (5 items, e.g., ‘‘a person should always think about their family when making important decisions’’); Respect (8 items, e.g., ‘‘children should always honor their parents and never say bad things about them’’); and Religiosity (7 items, e.g., ‘‘one’s belief in God gives inner strength and meaning to life’’). The mainstream values scale consists of 3 substantially correlated subscales from the MACVS: Material Success (5 items, e.g., ‘‘the best way for a person to feel good about himself/herself is to have a lot of money’’); Independence and Self-Reliance (5 items, e.g., ‘‘as children get older their parents should allow them to make their own decisions’’); and Competition and Personal Achievement (4 items, e.g., ‘‘one must be ready to compete with others to get ahead’’). Mothers and fathers indicated their endorsement of each item by responding with a five-point Likert-type scale ranging from (1) *not at all* to (5) *completely*. The means of item scores for the Mexican American values scale and for the mainstream values scale were computed separately, with higher scores indicating greater values endorsement. For mothers, the Cronbach’s α for the Mexican American values scale were .88, .90, and .90 at 5^{th}, 7^{th}, and 10^{th} grade, respectively. The Cronbach’s α for the mainstream American values scale were .81, .83, and .83 at 5^{th}, 7^{th}, and 10^{th} grade, respectively. For fathers, the Cronbach’s α for the Mexican American values scale were .88, .88, and .89 at 5^{th}, 7^{th}, & 10^{th} grade, respectively. The Cronbach’s α for the mainstream American values scale were .82, .82, and .83 at 5^{th}, 7^{th}, & 10^{th} grade, respectively. Parents’ mean scores on Mexican American

and mainstream values at each wave were used as indicators of latent intercept and slope growth factors representing parents' enculturation and acculturation processes.

Adolescents' bicultural competence (12th grade). Adolescents reported on *behavioral, affective, and cognitive components of their bicultural competence* (i.e., facility, comfort, and advantage, respectively) using the Mexican American Biculturalism Scale (MABS, Basilio et al., 2014). Previous work supported the construct validity and reliability of the measure for use with U.S. Mexican-origin participants across genders and language-preference (Basilio et al., 2014). All subscales included 9 items. The facility subscale assesses individuals' perceived ability to respond to demands from Mexican and mainstream cultural systems with facility (e.g., "Being obligated to satisfy my family's needs sometimes, and satisfying my own needs other times is ___"). The response scale ranged from (1) *very easy* to (5) *very difficult*. The comfort subscale assesses individuals' perceived ability to respond to demands from Mexican and mainstream cultural systems with comfort (e.g., "Sometimes you may need to make an important decision on your own, and other times you may need to ask your family for advice. Which of the following best describes you?"). The response scale included (1) *I am only comfortable when [e.g., I need to ask my family for advice] or [e.g., I make decisions on my own], (*2) *I am sometimes comfortable in both of these situations*, (3) *I am often comfortable in both of these situations*, (4) *I am most of the time comfortable in both of these situations*, and (5) *I am always comfortable in both of these situations.* The advantage subscale assesses individuals' perceived advantage in their ability to respond to demands from Mexican and mainstream cultural systems (e.g., "For me being able to feel part of the Mexican/Mexican American community sometimes, and being able to

feel part of the White (gringo) community other times has ___"). The response scale ranged from (1) *many advantages* to (5) *many disadvantages*. Means were calculated for each subscale, with higher scores indicating higher levels of bicultural facility, comfort, and advantage. Cronbach's α were .83 (facility), .85 (comfort), and .85 (advantage). Based on prior psychometric work (Basilio et al., 2014), mean scores on each subscale were used as indicators of a bicultural competence latent construct.

Demographics and covariates. Mothers, fathers, and adolescents reported on a series of demographic characteristics including their date of birth, gender (0 = male; 1 = female), and nativity (0 = Mexico born; 1 = U.S. born). When fathers did not participate, or were absent from the home, mothers reported on the nativity of the adolescents' biological father. Mothers and fathers reported on annual family income (1 = $0,000–$5,000 to 20 = $95,001+). Adolescents also reported on their endorsement of Mexican American and mainstream values (5th grade) using the Mexican American Cultural Values Scale (MACVS; Knight et al., 2010). The Cronbach's α for the Mexican American values scale was .85 and .84 for the mainstream American values scale.

Analytic Plan

Preliminary analyses were conducted in SPSS 24 (IBM Corp., 2016). First, descriptive statistics among all observed study variables were examined. Furthermore, attrition analyses were conducted to examine whether families who participated in interviews in 7th, 10th, and 12th grades, differed on 5th-grade demographic variables from those that did not. In addition, I examined whether two-parent families with participating fathers (n = 467) differed on 5th-grade demographic variables from two-parent families in which fathers did not participate. If significant differences emerged, variables were

included in the analytic models as auxiliary variables to reduce bias attributed to missingness (Enders, 2010).

Next, linear latent growth analyses were conducted, using software available in *Mplus* version 8 (Muthén & Muthén, 2010). Missing data were handled using full information maximum likelihood estimation with robust standard errors (MLR; Enders, 2013). Although model fit indices cut-off scores must be interpreted with caution for latent growth models (Preacher, Wichman, MacCallum, & Briggs, 2008), multiple fit indices (chi-squared test, CFI, RMSEA, and SRMR) were used to assess global model fit; good (acceptable) model fit is reflected by a non-significant chi-squared test, CFI greater than .95 (.90), RMSEA less than .05 (.08), and SRMR less than .05 (.08; Hu & Bentler, 1999). Moreover, global and local model fit was further assessed by comparing observed and model-estimated means and reviewing residual variances and *R*-square model estimates (Bollen & Curran, 2006). Analytic steps included: (1) estimating unconditional linear growth models for mothers' and fathers' enculturation and acculturation processes to depict trajectories for each process; (2) estimating parallel process models of mothers' and fathers' enculturation and acculturation trajectories to examine the association between trajectories; (3) including nativity as a predictor of the growth factors to control for nativity differences in mothers' and fathers' enculturation and acculturation trajectories; (4) including 12th grade adolescents' bicultural competence as a distal latent outcome to examine the influence of mothers' and fathers' enculturation and acculturation growth trajectories on adolescent' bicultural competence; and (5) conducting multi-group analyses to examine adolescents' gender and nativity differences in family contextual effects on adolescents' bicultural competence. Specifically, a fully

unconstrained model was compared to a partially constrained model (with paths between growth factors with significant variability and adolescents' bicultural competence constrained) using a Satorra-Bentler chi-squared difference test. A non-significant chi-square suggested invariance of the hypothesized paths across gender and nativity groups.

Last, structural equation models with latent variable interaction terms were estimated using the XWITH command and MLR estimator in *Mplus* 8 (Muthén & Muthén, 2010). Using a log-likelihood ratio test, the relative fit of the model without (null model) versus with the interaction term was assessed (Maslowsky, Jager, & Hemken, 2014). Interactions of growth factors with significant variability were tested one at a time. If log-likelihood ratio tests indicated that not including the interaction term represented a significant loss in fit, the interaction term was retained in the model.

Results

Preliminary Analyses

Attrition analyses examined whether families who participated in interviews in 7th, 10th, and 12th grades differed on 5th-grade child demographic (i.e., age, nativity, gender, family annual income), mother demographic (i.e., age, nativity), and father demographic (i.e., age, nativity) from those that did not. Most demographic comparisons were nonsignificant, though families who participated in 10th grade (n = 640) reported higher family annual income [$t(730) = -2.962$, $p = .003$] and children were less likely to be born in Mexico [$\chi^2(1) = 4.681$, $p = .041$] compared to those who did not participate in 10th grade (n = 109). Families who participated in 12th grade (n = 636) reported higher family annual income [$t(730) = -3.172$, $p = .002$] and children were less likely to be male [$\chi^2(1) = 8.431$, $p = .004$] compared to those who did not participate in 12th grade (n

= 113). No differences were observed in study variables. In addition, preliminary analyses examined whether two-parent families with participating fathers (n = 467) differed from two-parent families in which fathers did not participate (n = 112). No differences were observed in child demographic (i.e., age, nativity, gender, family annual income), mother demographic (i.e., age, nativity), or study variables. Father-adolescent dyad analyses, therefore, included the full two-parent subsample (n = 579).

Next, I examined skewness and kurtosis statistics for all study variables in the mother-adolescent dyad and in the father-adolescent dyad samples and found no evidence of non-normality. Means, standard deviations, and correlations are presented in Tables 1 and 2. In the mother-adolescent dyad sample (N = 749; Table 1), mothers' mean endorsements of Mexican American values were consistently high at each grade ($M \geq$ 4.39; $.37 \leq SD \geq .40$). Mothers who scored one standard deviation above the mean had scores equal or greater than 4.78 at each grade and mothers who scored one standard deviation below the mean had scores equal or lower than 4.04 at each grade. Thus, *higher* levels of Mexican American values endorsement correspond to scores close to 5 or *completely* endorsing these values; *lower* levels, in this sample, correspond to scores close to 4 or *very much* endorsing these values. In terms of mainstream values, mothers' mean endorsements were consistently moderate at each grade ($M \geq 3.19$; $.61 \leq SD \geq .62$). Mothers who scored one standard deviation above the mean had scores equal or greater than 3.80 at each grade and mothers who scored one standard deviation below the mean had scores equal or lower than 2.58 at each grade. Thus, *higher* levels of mainstream American values endorsement correspond to scores close to 4 or *very much* endorsing these values; *lower* levels, in this sample, correspond to scores close to 3 or *somewhat*

endorsing these values.

In addition, mothers' endorsement of Mexican American values in 5th, 7th, and 10th grades was positively associated with their endorsement of mainstream values in 5th, 7th, and 10th grades. Mothers' endorsement of mainstream values in 7th and 10th grades was positively associated with adolescents' bicultural facility in 12th grade. Furthermore, mothers' endorsement of mainstream values in 10th grade was positively associated with adolescents' bicultural advantage in 12th grade. Adolescents' endorsement of Mexican values in 5th grade was positively associated with their bicultural comfort and advantage in 12th grade. Last, adolescents' endorsement of mainstream values in 5th grade was negatively associated with their bicultural comfort in 12th grade. The three components of 12th grade adolescents' bicultural competence were positively and highly correlated with one another.

In the father-adolescents dyad sample ($n = 579$; Table 2), fathers' mean endorsements of Mexican American values were consistently high at each grade ($M \geq 4.34$; $.36 \leq SD \geq .38$). Fathers who scored one standard deviation above the mean had scores equal or greater than 4.71 at each grade and fathers who scored one standard deviation below the mean had scores equal or lower than 4.01 at each grade. Thus, *higher* levels of Mexican American values endorsement correspond to scores close to 5 or *completely* endorsing these values; *lower* levels, in this sample, correspond to scores close to 4 or *very much* endorsing these values. In terms of mainstream values, fathers' mean endorsements were consistently moderate at each grade ($M \geq 3.38$; $.57 \leq SD \geq .62$). Fathers who scored one standard deviation above the mean had scores equal or greater than 3.95 at each grade and fathers who scored one standard deviation below the mean

had scores equal or lower than 2.85 at each grade. Thus, fathers' *higher* levels of mainstream American values endorsement correspond to scores close to 4 or *very much* endorsing these values; *lower* levels, in this sample, correspond to scores close to 3 or *somewhat* endorsing these values.

In addition, fathers' endorsement of Mexican American values in 5th, 7th, and 10th grades was positively associated with their endorsement of mainstream values in 5th, 7th, and 10th grades. Fathers' endorsement of Mexican values in 7th grade was negatively associated with adolescents' bicultural facility and advantage in 12th grade. Adolescents' endorsement of Mexican values in 5th grade was positively associated with their bicultural comfort and advantage in 12th grade. Last, adolescents' endorsement of mainstream values in 5th grade was negatively associated with their bicultural comfort in 12th grade. The three components of 12th grade adolescents' bicultural competence were positively and highly correlated with one another.

Maternal Contextual Effect on Adolescents' Bicultural Competence Development

After examining results from descriptive statistics and attrition analyses, I first estimated an unconditional linear growth model for mothers' value-based enculturation process using full information maximum likelihood estimation with robust standard errors (MLR). Model specification included enculturation intercept loadings set to 1 to represent the equal influence on each repeated measure and enculturation slope loadings set to 0 (5th grade), 2 (7th grade), and 5 (10th grade) to account for unequal time passage between the assessments of Mexican values endorsement. Thus, the growth factors represent mothers' endorsement of Mexican values when their target children were in the 5th grade (enculturation intercepts) and amount of linear change in mothers' endorsement

of Mexican values, or value-based enculturation per grade (enculturation slopes). Furthermore, 5th grade family income was included as an auxiliary variable to reduce bias attributed to missingness (Enders, 2010). The estimated unconditional linear growth model for mothers' value-based enculturation process *(N* = 749*)* closely fit the data, χ^2 (1) = 2.476, *p* = .116; CFI = .997, RMSEA = .044, SRMR = .010. Mothers' enculturation latent growth factors are presented in Table 3. On average, mothers had high baseline (i.e., youths in 5th grade) levels of enculturation [$\mu_\propto$ = 4.407, *SE* = .013, *p* < .001] that remain stable over time [μ_β = -.001, *SE* = .003, *p* = .598], but there was significant variability in mothers' enculturation intercepts [$\psi_{\propto\propto}$ = .095, *SE* = .009, *p* < .001] and linear rate of change [$\psi_{\beta\beta}$ = .002, *SE* =.001, *p* = .021]. In addition, individual differences in the enculturation intercept were not related to individual differences in the enculturation slope [$\psi_{\propto\beta}$ = -.001, *SE* = .002, *p* = .666]. The latent trajectory was a good predictor of the observed measures of mothers' endorsement of Mexican values. The enculturation intercept and the linear slope accounted for 71%, 62%, and 86% of the variability in 5th, 7th, and 10th grade, respectively. However, there was significant unexplained variability in mothers' endorsement of Mexican values measures after accounting for the latent growth factors in 5th and 7th grade. There was no significant unexplained variability in the 10th grade. Overall, mothers' value-based enculturation across their children's late childhood to middle adolescence was high and stable on average, but there were significant individual differences in mothers' trajectories.

Next, I estimated an unconditional linear growth model for mothers' value-based acculturation process using MLR. Model specification included acculturation intercept loadings set to 1 to represent the equal influence on each repeated measure and

acculturation slope loadings set to 0 (5th grade), 2 (7th grade), and 5 (10th grade) to account for unequal time passage between the assessments of mainstream values endorsement. Thus, the growth factors represent mothers' endorsement of mainstream values when their target children were in the 5th grade (acculturation intercepts) and amount of linear change in mothers' endorsement of mainstream values, or value-based acculturation per grade (acculturation slopes). Furthermore, 5th grade family income was included as an auxiliary variable to reduce bias attributed to missingness (Enders, 2010). The estimated unconditional linear growth model for mothers' value based acculturation process *(N*= 749*)* closely fit the data, χ^2 (1) = .025, p = .874; CFI = 1.000, RMSEA = .000; SRMR = .001. Mothers' acculturation latent growth factors are presented in Table 3. On average, mothers had moderate baseline (i.e., youths in 5th grade) levels of value-based acculturation [$\mu_\propto$ = 3.197, *SE* = .022, p < .001] that remained stable over time [μ_β = .001, *SE* = .004, p = .772]. Though mothers varied significantly in their acculturation intercept [$\psi_{\propto\propto}$ =.267, *SE* = .020, p < .001], they did not vary in their linear rate of change [$\psi_{\beta\beta}$ =.002, *SE* = .002, p = .171]. The latent trajectory was a good predictor of the observed measures of mothers' endorsement of mainstream values. The acculturation intercept and the linear slope accounted for 69%, 70%, and 84% of the variability in 5th, 7th, and 10th grade, respectively. However, there was significant unexplained variability in mothers' endorsement of mainstream values measures after accounting for the latent growth factors in 5th, 7th, and 10th grade. Overall, mothers' value-based acculturation across their children's late childhood to middle adolescence was best described by moderate intercepts and no changes over time. Mothers' initial

trajectory levels of acculturation differed from one another and these initial differences were maintained across time.

Based on findings from mothers' acculturation and enculturation unconditional models, only growth factors with significant variability (i.e., enculturation intercept, enculturation slope, and acculturation intercept) are the focus in subsequent analyses. That is, because the mothers' acculturation slope variance was not significantly different from zero, there was no variability in this growth factor that could be meaningfully related to other growth factors or constructs in subsequent models. In step 2, I assessed the associations among the growth factors for mothers' value-based enculturation and acculturation processes using a parallel linear growth model (*N*= 749*)*. Model specifications included (a) covariances between residuals of observed variables within time (e.g., 5th grade Mexican values endorsement residual with 5th grade mainstream values endorsement residual) and (b) growth factors allowed to freely covary (e.g., enculturation intercept with acculturation intercept). The estimated parallel linear growth model closely fit the data, χ^2 (4) = 2.826, p = .587; CFI = 1.000, RMSEA = .000; SRMR = .006 (Figure 1). There was a positive correlation between mothers' enculturation intercept and mothers' acculturation intercept [r = .381, *SE* = .046, $p < .001$], thus mothers with higher endorsement of Mexican values in 5th grade had also higher endorsement of mainstream values in 5th grade. Furthermore, mothers' enculturation slope was not significantly correlated with mothers' acculturation intercept [r = .071, *SE* = .100, p = .474], thus mothers' enculturative changes were not related to their baseline values on acculturation. Overall, mothers' initial trajectory levels of value-based enculturation and acculturation were positively related but there was no association

between mothers' rate of change in enculturation and initial trajectory levels of acculturation.

In step 3, I modified the parallel linear growth model estimated in step 2 by incorporating mothers' nativity (Mexico-born = 0 and U.S.-born = 1) as a predictor of the growth factors with significant variability (i.e., enculturation intercept, enculturation slope, and acculturation intercept). The estimated parallel linear growth model with mothers' nativity as a predictor (N = 749) closely fit the data, χ^2 (8) = 5.406, p = .713; CF1 = 1.000, RMSEA = .000; SRMR = .014 (Figure 2). Mothers' nativity predicted their enculturation intercept ($ß$ = -.224, SE = .096, p = .020) but did not predict their enculturation slope ($ß$ = -.001, SE = .125, p = .991). This indicates that the average mothers' endorsement of Mexican values when their children were in the 5th grade was .224 standard deviations lower for mothers born in the U.S. compared to mothers born in Mexico, and that there were no significant differences in mothers' average enculturative changes across the two nativity groups. Furthermore, mothers' nativity also predicted their acculturation intercept ($ß$ = -1.109, SE = .071, $p < .001$). Thus, the average mothers' endorsement of mainstream values when their children were in the 5th grade was 1.109 standard deviations lower for mothers born in the U.S. compared to mothers born in Mexico. Mothers' nativity accounted for 24% of the variability in the acculturation intercept but did not account for significant variability on any of the other growth factors. Overall, mothers born in the U.S. had lower average initial trajectory levels of value-based enculturation and acculturation compared to mothers born in Mexico. There was no difference in mothers' enculturation rate of change across the two nativity groups.

In step 4, I modified the parallel linear growth model estimated in step 3, which depicted mothers' value-based enculturation and acculturation trajectories across their children's late childhood to middle adolescence (5th to 10th grade) and controlled for mothers' nativity differences, by incorporating adolescents' 12th grade bicultural competence as a distal latent outcome with three indicators: bicultural facility, comfort, and advantage. In addition, I included adolescents' 5th grade endorsement of Mexican and mainstream values as covariates of the outcome variable. The estimated linear growth model *(N* = 749*)* closely fit the data according to most fit indices, χ^2 (43) = 84.642, p < .001; CF1 = .984, RMSEA = .036; SRMR = .036 (Figure 3). Consistent with prior psychometric work (Basilio et al., 2014), bicultural facility, comfort, and advantage related closely to the bicultural competence latent factor, the standardized loadings were .81 (p < .001), .59 (p < .001), and .71 (p < .001), respectively. Neither mothers' enculturation intercept (*ß* = -.020, *SE* = .060, p = .736) nor mothers' enculturation slope (*ß* = .036, *SE* = .105, p = .734) predicted adolescents' 12th grade bicultural competence. Thus, mothers' enculturation process – during their children's late childhood to middle adolescence – was not related to their adolescents' 12th grade bicultural competence. Higher mothers' acculturation intercepts, however, predicted higher adolescents' bicultural competence (*ß* = .145, *SE* = .053, p = .006) in 12th grade, controlling for other growth factors (i.e., enculturation intercept and enculturation slope) and for adolescents' 5th grade endorsement of Mexican and mainstream values. This indicates that, on average, for 1 standard deviation increase in model-predicted mothers' endorsement of mainstream values when their children where in 5th grade, there was a .145 standard deviation increase in adolescents' bicultural competence in 12th grade. The model

accounted for 6% of the variability in 12th grade adolescents' bicultural competence. Overall, mothers' value-based enculturation trajectories were not related to adolescents' bicultural competence in 12th grade. Mothers' higher initial trajectory levels of value-based acculturation predicted greater adolescents' bicultural competence in 12th grade. Findings replicated in models that did not control for adolescents 5th grade endorsements of Mexican American and mainstream cultural values.

In step 5, I investigated whether maternal contextual effects on adolescents' bicultural competence development held across adolescents' nativity. A model constraining paths of interest to be equal across Mexico and U.S. born adolescents and another one allowing the paths to differ across the two groups were estimated. Satorra-Bentler scaled chi-squared difference tests indicated that the paths did not differ by nativity, $\Delta\chi^2$ (3) = 7.184, p = .066. Similarly, I investigated whether maternal contextual effects on adolescents' bicultural competence development held across adolescents' gender. A model constraining paths of interest to be equal across male and female adolescents and another one allowing the paths to differ across the two groups were specified. These models, however, were not supported by the data and could not be estimated. In light of these findings – stability of the model across adolescents' nativity groups and inability to test model stability across adolescents' gender groups – I conducted a follow-up analysis and included gender and nativity as covariates on the outcome variable (See Figure 4). Findings were comparable to those in Figure 3 (i.e., no differences in coefficient direction and significance levels), thus, I retain the most parsimonious model (Figure 3).

Last, I investigated the effects of the interactions between mothers' growth factors with significant variability on 12th grade adolescents' bicultural competence. Specifically, I tested prediction of adolescents' bicultural competence from (1) the interaction between the intercepts of enculturation and acculturation and (2) the interaction between the enculturation slope and the acculturation intercept. First, I investigated the effect of the interaction between the intercepts (levels when youths were in 5th grade) of mothers' enculturation and acculturation, or the joint effect of mothers' initial trajectory levels of value-based enculturation and acculturation, on 12th grade adolescents' bicultural competence. Using recent developments of the latent moderated structural equations method (LMS; Klein & Moosbrugger, 2000; Marsh, Wen, & Hau, 2006; Maslowsky et al., 2014), I modified the final model estimated in prior analyses– parallel model with distal latent outcome (Figure 3) – by incorporating the latent interaction term of the enculturation and acculturation intercepts using the XWITH command in *Mplus 8*. I was unable to include family annual income as an auxiliary variable for these analyses because the AUXILIARY (M) command is not currently supported in conjunction with the LMS framework. Furthermore, the LMS does not provide conventional model fit indices (e.g., χ^2, CFI, RMSEA, SRMR). Following the recommended two-step procedure (Maslowsky et al., 2014), I estimated a null model without the latent interaction term with specifications from primary analyses but omitting the auxiliary variable *(N* = 749). This model closely fit the data according to most fit indices, χ^2 (43) = 84.615, $p < .001$; CF1 = .984, RMSEA = .036; SRMR = .036 (Figure 5) and supplies model fit indices for the subsequent step, as the latent interaction term does not have a mean, variance, or a covariance with other parameters, and therefore, should not affect the fit of the

measurement model (Muthen, 2012). Findings between the models with (Figure 3) and without the auxiliary variable (Figure 5) were comparable. Next, I estimated a model that included the interaction of the enculturation and acculturation intercepts term (N = 749; see Figure 6). Likelihood ratio tests indicated that the model without the intercept interaction term represented a significant loss in fit relative to the model with the interaction of the enculturation and acculturation intercepts, $\Delta\chi^2$ (1) = 6.583, p = .010. This suggests that the intercept interaction term should be retained in the model (Figure 6). Last, the model accounted for 9% of the variability in 12th grade adolescents' bicultural competence.

In the interaction model, there was a significant interaction between the enculturation and acculturation intercepts predicting adolescents' bicultural competence in 12th grade ($ß$ = -.121, SE = .052, p = .021), controlling for growth factors (i.e., enculturation intercept, enculturation slope, and acculturation intercept) and for adolescents' 5th grade endorsement of Mexican and mainstream American values. As shown in Figure 7, the significant interaction suggests that there is no association between mothers' acculturation intercepts and adolescents' bicultural competence when mothers are higher on their enculturation intercepts. Furthermore, the association between mothers' acculturation intercepts and adolescents' bicultural competence is positive when mothers are lower on their enculturation intercepts. Higher enculturation intercepts correspond to values above or equal to 4.7 and lower intercepts correspond to values below or equal to 4.1. Thus, for mothers with higher enculturation intercepts, the association between mothers' acculturation intercepts and adolescents' bicultural competence was tested at levels close to 5 (*completely*) on the response scale. For

mothers with lower enculturation intercepts, the association between mothers' acculturation intercepts and adolescents' bicultural competence was tested at levels close to 4 (*very much*) on the response scale. Henceforth, I refer to the higher enculturation group as "*almost complete endorsement of Mexican American values*" and the lower group as "*high endorsement of Mexican American values.*" Similarly, higher acculturation intercepts correspond to values above or equal to 3.7 and lower intercepts correspond to values below or equal to 2.7. Thus, for mothers with higher acculturation intercepts, the association between mothers' enculturation intercepts and adolescents' bicultural competence was tested at levels close to 4 (*very much)* on the response scale. For mothers with lower acculturation intercepts, the association between mothers' enculturation intercepts and adolescents' bicultural competence was tested at levels close to 3 (*somewhat)* on the response scale. Henceforth, I refer to the higher acculturation group as "*high endorsement of mainstream American values*" and the lower group as "*moderate endorsement of mainstream American values.*"

Next, I modified the null model (model with no interaction and no auxiliary variable; Figure 5) by incorporating the interaction term between the slope of mothers' enculturation and the intercept of mothers' acculturation (levels when youths were in 5th grade), or the joint effect of mothers' rates of change in value-based enculturation over time and initial trajectory levels of value-based acculturation, on 12th grade adolescents' bicultural competence (N = 749). Likelihood ratio tests indicated that the model without the interaction term did not represent a significant loss in fit relative to the model with the interaction between the enculturation slope and the acculturation intercept, $\Delta\chi^2$ (1) = 4.000, p = .527. This suggests that the interaction term should not be retained in the

model, thus, I report the model including the interaction between the enculturation and acculturation intercepts as the final model (Figure 6).

Paternal Contextual Effect on Adolescents' Bicultural Competence Development

In step 1, I estimated an unconditional linear growth model for fathers' value-based enculturation process using MLR. Model specification included enculturation intercept loadings set to 1 to represent the equal influence on each repeated measure and enculturation slope loadings set to 0 (5^{th} grade), 2 (7^{th} grade), and 5 (10^{th} grade) to account for unequal time passage between the assessments of Mexican values endorsement. Thus, the growth factors represent fathers' endorsement of Mexican values when their target children were in the 5^{th} grade (enculturation intercepts) and amount of linear change in fathers' endorsement of Mexican values, or value-based enculturation per grade (enculturation slopes). In addition, 5^{th} grade family income was included as an auxiliary variable to reduce bias attributed to missingness (Enders, 2010). The freely estimated unconditional model revealed a non-positive latent variable covariance matrix associated with the enculturation linear slope. The enculturation slope variance was [$\psi_{\beta\beta}$ =.000, *SE* = .001, *p* = .943]; therefore, model specification was modified to fix the slope variance at 0, thus, covariances involving the enculturation slope were fixed at 0. The final estimated unconditional linear growth model for fathers' value-based enculturation process *(n* = 579*)* closely fit the data, χ^2 (3) = .164, *p* = .983; CFI = 1.000, RMSEA = 0, SRMR = .014. Fathers' enculturation latent growth factors are presented in Table 4. On average, fathers had high baseline (i.e., youths in 5^{th} grade) levels of enculturation [$\mu_{\propto}$ = 4.384, *SE* = .017, *p* < .001] that decreased over time [μ_{β} = -.008, *SE* = .003, *p* = .006]. Furthermore, there was significant variability in fathers' enculturation

intercepts [$\psi_{\propto\propto} = .095$, *SE* =.009, $p < .001$] and zero variability in linear rate of change (fixed to 0). The latent trajectory was a good predictor of the observed measures of fathers' endorsement of Mexican values. The intercept and the linear slope accounted for 67%, 73%, and 70% of the variability in 5th, 7th, and 10th grade, respectively. However, there was significant unexplained variability in fathers' endorsement of Mexican values measures after accounting for the latent growth factors in 5th, 7th, and 10th grade. Overall, fathers' value-based enculturation across their children's late childhood to middle adolescence was high and declining on average; although there were individual differences in initial trajectory levels of fathers' enculturation.

Next, I estimated an unconditional linear growth model for fathers' value-based acculturation process using MLR. Model specification included acculturation intercept loadings set to 1 to represent the equal influence on each repeated measure and acculturation slope loadings set to 0 (5th grade), 2 (7th grade), and 5 (10th grade) to account for unequal time passage between the assessments of mainstream values endorsement. Thus, growth factors represent fathers' endorsement of mainstream values when their target children were in the 5th grade (acculturation intercepts) and amount of linear change in fathers' endorsement of mainstream values, or acculturation per grade (acculturation slopes). Furthermore, 5th grade family income was included as an auxiliary variable to reduce bias attributed to missingness (Enders, 2010). The estimated unconditional linear growth model for fathers' value-based acculturation process (n = 579) closely fit the data, χ^2 (1) = 2.894, p = .089; CFI = .996, RMSEA = .057; SRMR = .016. Fathers' acculturation latent growth factors are presented in Table 4. On average, fathers had moderate baseline (i.e., youths in 5th grade) levels of value-based

acculturation [$\mu_{\propto}$ = 3.417, *SE* = .028, *p* < .001] that remained stable over time [μ_{β} = -.004, *SE* =.005, *p* = .412]. Though fathers varied significantly in their acculturation intercepts [$\psi_{\propto\propto}$ = .293, *SE* =.025, *p* < .001], they did not vary in their linear rate of change [$\psi_{\beta\beta}$ =004, *SE* =.002, *p* = .081]. The latent trajectory was a good predictor of the observed measures of fathers' endorsement of mainstream values. The intercept and the linear slope accounted for 76%, 73%, and 80% of the variability in 5th, 7th, and 10th grade, respectively. However, there was significant unexplained variability in fathers' endorsement of mainstream values measures after accounting for the latent growth factors in 5th, 7th, and 10th grade. Overall, fathers' value-based acculturation across their children's late childhood to middle adolescence was moderate and stable on average; although there were individual differences in initial trajectory levels of fathers' acculturation.

Based on findings from fathers' acculturation and enculturation unconditional models, only growth factors with significant variability (i.e., enculturation intercept and acculturation intercept) are the focus of subsequent analyses. That is, because fathers' enculturation and acculturation slope variances were not significantly different from zero, there was no variability in these growth factors that could be meaningfully related to other growth factors or constructs in subsequent models. In step 2, I assessed the associations among the growth factors for fathers' enculturation and acculturation processes using a parallel linear growth model (*n* = 579*)*. Model specifications included (a) covariances between residuals of observed variables within time (e.g., 5th grade Mexican values endorsement residual with 5th grade mainstream values endorsement residual), (b) growth factors allowed to freely covary (e.g., enculturation intercept and

acculturation intercept) with the exception of covariances with the enculturation slope, and (c) enculturation slope variance fixed at 0 (based on findings from step 1). The estimated parallel linear growth model closely fit the data, χ^2 (8) = 7.713, p = .462; CFI = 1.000, RMSEA = .000; SRMR = .024 (Figure 8). There was a positive correlation between fathers' enculturation intercept and fathers' acculturation intercept [r = .404, *SE* =.050, p < .001]; thus, fathers with higher initial trajectory levels of value-based enculturation had also higher initial trajectory levels of acculturation.

In step 3, I modified the parallel linear growth model estimated in step 2 by incorporating fathers' nativity (Mexico-born = 0 and U.S.-born = 1) as a predictor of the growth factors with significant variability (i.e., enculturation intercept and acculturation intercept). This model specification revealed a non-positive latent variable covariance matrix associated with the linear acculturation slope. The acculturation slope variance was [$\psi_{\beta\beta}$ =-.001, *SE* = 001, p = .604]; therefore, the model was respecified to fix the slope variance at 0, thus, covariances involving the acculturation slope were fixed at 0. The final estimated parallel linear growth model with fathers' nativity as a predictor (n = 579) closely fit the data, χ^2 (15) = 14.806, p = .465; CFI = 1.000, RMSEA = .000; SRMR = .060 (Figure 9). Fathers' nativity did not predict their enculturation intercept (ß = -.062, *SE* =.050, p = .210). This indicates that there was no significant difference in the average fathers' endorsement of Mexican values when their children were in the 5th grade across the nativity groups. In addition, fathers' nativity predicted fathers' acculturation intercept (ß = -.442, *SE* = .039 p < .001). Thus, the average fathers' endorsement of mainstream values when their children were in the 5th grade was .442 standard deviation lower for fathers born in the U.S. compared to fathers born in Mexico. Fathers' nativity accounted

for 20% of the variability in the acculturation intercept but did not predict any significant variability in the enculturation intercept. Overall, there was no difference in fathers' initial trajectory levels of value-based enculturation across the two nativity groups, but fathers born in the U.S. had a lower average initial trajectory levels of value-based acculturation compared to fathers born in Mexico.

In step 4, I modified the parallel linear growth model estimated in step 3, which depicted fathers' value-based enculturation and acculturation trajectories across their children's late childhood to middle adolescence (5^{th} to 10^{th} grade) and controlled for fathers' nativity differences, by incorporating adolescents' 12^{th} grade bicultural competence as a distal latent outcome with three indicators: bicultural facility, comfort, and advantage. In addition, I included adolescents' 5^{th} grade endorsement of Mexican and mainstream values as covariates. The estimated linear growth model *(n* = 579*)* closely fit the data according to most fit indices, χ^2 (50) = 74.096, p = .015; CFI = .986, RMSEA = .029; SRMR = .048 (Figure 10). Consistent with prior psychometric work (Basilio et al., 2014), bicultural facility, comfort, and advantage related closely to the bicultural competence latent factor, the standardized loadings were .83 (p < .001), .58 (p < .001), and .71 (p < .001), respectively. Higher fathers' enculturation intercepts predicted lower adolescents' bicultural competence (*ß* = -.185, *SE* = .064, p = .004) in 12^{th} grade, controlling for the acculturation intercept and for adolescents' 5^{th} grade endorsement of Mexican and mainstream values. This indicates that, on average, for 1 standard deviation increase in model-predicted fathers' endorsement of mainstream values when their children where in 5^{th} grade, there was a .185 standard deviation decrease in adolescents' bicultural competence in 12^{th} grade. In addition, higher fathers'

acculturation intercepts predicted higher adolescents' bicultural competence (ß = .132, *SE* = .063, *p* = .037) in 12th grade, controlling for the enculturation intercept and for adolescents' 5th grade endorsement of Mexican and mainstream values. Thus, on average, for 1 standard deviation increase in model-predicted fathers' endorsement of mainstream values when their children where in the 5th grade, there was a .132 standard deviation increase in adolescents' bicultural competence in 12th grade. The model accounted for 8% of the variability in 12th grade adolescents' bicultural competence and the remaining significant unexplained variability was 92%. Overall, fathers' higher initial trajectory levels of value-based enculturation predicted lower adolescents' bicultural competence in 12th grade, whereas fathers' higher initial trajectory levels of value-based acculturation predicted greater adolescents' bicultural competence in 12th grade. Findings replicated in models that did not control for adolescents 5th grade endorsements of Mexican American and mainstream cultural values.

In step 5, I tested the stability of the step 4-model across gender and nativity. First, I investigated whether paternal contextual effects on adolescents' bicultural competence development held across adolescents' nativity. A model constraining paths of interest to be equal across Mexico and U.S. born adolescents and another one allowing the paths to differ across the two groups were estimated. Satorra-Bentler chi-squared difference tests indicated that the paths did not differ by adolescents' nativity, $\Delta\chi^2$ (2) = 4.560, *p* = .102. Similar tests were conducted to investigate whether the effects held across adolescents' gender. A model constraining paths of interest to be equal across male and female adolescents and another one allowing the paths to differ across the two groups were estimated. Findings suggested that the paths did not differ by adolescents'

gender, $\Delta\chi^2$ (2) = 2.353, p = .308. In light of these findings, I then conducted a follow-up analysis and included gender and nativity as covariates on the outcome variable (Figure 11). Findings were similar to those in Figure 10 (i.e., no differences in coefficient direction and significance levels), thus, I retain the most parsimonious model (Figure 10).

Last, I investigated the effect of the interaction between fathers' growth factors with significant variability on 12th grade adolescents' bicultural competence. Thus, I investigated the effect of the interaction between the intercepts (levels when youths were in 5th grade) of fathers' enculturation and acculturation, or the joint effect of fathers' initial trajectory levels of value-based enculturation and acculturation, on 12th grade adolescents' bicultural competence using recent developments of the latent moderated structural equations method (LMS; Klein & Moosbrugger, 2000; Marsh, Wen, & Hau, 2006; Maslowsky et al., 2014). Specifically, I modified the final model estimated in prior analyses – parallel model with distal latent outcome (Figure 10) – by incorporating the latent interaction term between the enculturation and acculturation intercepts using the XWITH command in *Mplus* 8. I was unable to include family annual income as an auxiliary variable for these analyses because the AUXILIARY (M) command is not currently supported in conjunction with the LMS framework. Furthermore, the LMS does not provide conventional model fit indices (e.g., χ^2, CFI, RMSEA, SRMR). Following the recommended two-step procedure (Maslowsky et al., 2014), I estimated a null model without the latent interaction term with specifications from primary analyses but omitting the auxiliary variable *(n* = 579). This model closely fit the data according to most fit indices, χ^2 (50) = 73.844, p = .015; CFI = .986, RMSEA = .029; SRMR = .047 (Figure 12) and supplies model fit indices for the subsequent step as the latent interaction term

does not have a mean, variance, or a covariance with other parameters, and therefore, should not affect the fit of the measurement model (Muthen, 2012). Next, I estimated a model that included the interaction of the intercepts term (n = 579). Likelihood ratio tests indicated that the model without the interaction term did not represent a significant loss in fit relative to the model with the interaction between the enculturation and acculturation intercepts, $\Delta\chi^2$ (1) = 2.022, p = .155. This suggests that the interaction term should not be retained in the model, thus, I report the most parsimonious model as the final model (Figure 10).

Discussion

The current study bridges important gaps in biculturalism literature by examining how dual-cultural adaptation in the family context relates to adolescents' bicultural competence development. Specifically, I examined how parents' trajectories of value-based enculturation and acculturation overtime related to adolescents' bicultural competence. I found that mothers' higher levels of acculturation when their youth were in the 5th grade predicted higher adolescents' bicultural competence in the 12th grade. This positive effect, however, was only evident when mothers' enculturation levels when their youth were in the 5th grade were on the lower end of the sample distribution. Similarly, fathers' higher levels of acculturation when their youth were in the 5th grade predicted higher adolescents' bicultural competence in the 12th grade. Moreover, fathers' higher levels of enculturation when their youth were in the 5th grade predicted lower adolescents' bicultural competence in the 12th grade. These findings generalized across adolescent gender and nativity. By examining U.S. Mexican-origin adolescents' development of bicultural competence within family systems characterized by diverse

trajectories of mothers' and fathers' orientations toward U.S. mainstream and Mexican cultures, the current study contributes to better understandings of intergenerational cultural transmission and advances scholarship on the culturally bounded nature of human development.

Parental Enculturation and Acculturation Trajectories

On average, mothers' and fathers' trajectories of value-based enculturation were high and fairly stable over time, controlling for mothers' and fathers' nativity. Similarly, mothers' and fathers' trajectories of value-based acculturation were moderate and stable overtime, controlling for mothers' and fathers' nativity. Thus, overall mothers and fathers exhibited a high degree of endorsement of Mexican American values and a moderate degree of endorsement of mainstream American values over a 5-year span. These trajectories replicate patterns seen in some prior work. For example, Schwartz and colleagues (2013) documented stability of mothers' behavior-based enculturation and acculturation trajectories among a first-generation immigrant pan-Latino sample in the U.S. The authors described mothers' behavioral enculturation trajectories as high and behavioral acculturation trajectories as moderate. My findings substantially extend this work to value-based enculturation and acculturation trajectories among U.S. Mexican-origin mothers and fathers diverse on generational statuses. These parallel trajectories were used to examine the associations between parents' processes of dual-cultural adaptation and adolescents' development of bicultural competence. Because there was no change or no variability (i.e., slopes) in mothers' and fathers' enculturation and acculturation trajectories, however, only initial trajectory levels (i.e., intercepts) were examined relative to their influence on adolescent bicultural competence.

Parental Contextual Effect on Adolescents' Bicultural Competence Development

Maternal enculturation and acculturation interaction effect. The final model for maternal enculturation and acculturation effects on adolescent bicultural competence involved a significant interaction effect. Thus, hypothesis 1 that mothers' higher enculturation *or* acculturation intercepts would predict higher adolescents' bicultural competence was not supported. Partially supporting hypothesis 4 that mothers' higher enculturation *and* acculturation intercepts would predict higher adolescents' bicultural competence, mothers' higher value-based acculturation when their youth were in the 5th grade predicted higher adolescents' bicultural competence in the 12th grade. Contrary to my hypothesis, this positive effect was only evident when mothers' value-based enculturation levels when their youth were in the 5th grade were on the lower end of the sample distribution. Thus, adolescents developing in 5th grade family contexts characterized by mothers who had higher levels of acculturation (*high endorsement of mainstream American values* group) and lower levels of enculturation (*high endorsement of Mexican American values* group) had higher levels of bicultural competence in the 12th grade. Adolescents developing in 5th grade family contexts characterized by mothers who had lower levels of acculturation (*moderate endorsement of mainstream American values* group) and higher levels of enculturation (*almost complete endorsement of Mexican American values* group) had lower levels of bicultural competence in the 12th grade. My interaction findings highlight the importance of examining the concurrent influence of mothers' value-based enculturation and acculturation trajectories on adolescent bicultural competence because immigrant mothers' adaptation to living within heritage and host cultural systems influence their socialization beliefs and practices (McHale et al., 2005;

Romero et al., 2000), especially when such adaptation takes place in the domain of values (Bornstein & Cote, 2006; Knight et al., 2011; 2016; Palacios & Moreno, 1996; White et al., 2013).

First, the combination of mothers' higher enculturation (almost complete endorsement of Mexican American values) and lower acculturation (moderate endorsement of mainstream American values) when their children were in the 5th grade predicted lower levels of adolescents' bicultural competence in the 12th grade. This finding is comparable to prior cross-sectional research. Specifically, my work extends research with predominantly first generation immigrant U.S. Chinese-origin families that showed a positive association between mothers' bicultural socialization beliefs and youths' dual-cultural orientations (i.e., Chinese American orientations). Comparable to the current study, the positive association between mothers' American orientation and mothers' bicultural socialization beliefs was stronger when their Chinese orientation was lower (Kim & Hou, 2016). In the case of the U.S. Chinese-origin mothers in Kim and Hou's study and the U.S. Mexican-origin mothers in the current study, the highest levels of endorsement of the heritage culture may constrain mothers' abilities to promote adolescent biculturalism because these highest endorsements leave little psychological and behavioral space for the host culture socialization needed to promote biculturalism. For example, in a family context in which the mother *almost completely* endorses Mexican American values, she might feel the need to consistently prioritize values associated with the heritage culture, thus favoring Mexican American socialization practices (Knight et al., 2011; 2016). This, is turn, may reduce youth opportunities to interact with members from the mainstream American culture, participate in mainstream

American culture traditions, feel part of the US society at large, and/or to learn and internalize values deemed important in the mainstream American culture, thus reducing youth opportunities to integrate host and heritage cultural domains.

Second, the combination of mothers' lower enculturation (high endorsement of Mexican American values) and higher acculturation (high endorsement of mainstream American values) when their children were in the 5th grade predicted higher levels of adolescents' bicultural competence in the 12th grade. This finding also extends prior research. For example, among Belgian families, mothers' bilingualism was more positively associated with their children's bilingualism when they consistently used both languages at home (De Houwer, 2007). Thus, mothers who *highly* (but not *completely*) endorse values associated with the heritage and host cultures may be better position to provide adolescents with consistent affordances across cultural systems, hence promoting their bicultural competence development. Further, my findings suggest that family contexts shaped by a balance, or similarly high maternal endorsement of values across heritage and host cultures, are most promoting for adolescent bicultural competence. It may be that immigrant mothers who *moderately* or *highly* (vs. *completely*) endorse values associated with heritage and host cultural systems also endorse more socialization beliefs and practices associated with both cultures (Romero et al., 2000), and experience more ease and comfort when navigating, integrating, and switching between heritage and host cultural values (Kim et al., 2014), thus providing youth with more opportunities to develop bicultural competence.

Paternal enculturation effect. Contrary to hypothesis 1 that fathers' higher enculturation intercepts would predict higher adolescents' bicultural competence, fathers'

higher value-based enculturation when their children were in the 5th grade predicted adolescents' lower bicultural competence in the 12th grade, accounting for fathers' value-based acculturation when their children were in the 5th grade. Thus, adolescents developing in family contexts shaped by fathers who exhibited higher endorsement of Mexican American values had lower levels of bicultural competence. In the current sample, fathers' overall endorsement of Mexican American values was restricted, ranging between *very much* to *complete* endorsement of these values. Prior work has documented the positive link between parents' indicators of high enculturation (i.e., high endorsement of heritage values, high engagement in heritage culture socialization) and youth's development of heritage culture competencies (i.e., endorsement of heritage values and identities; Gartner et al., 2014; Knight et al., 2011; Schwartz & Zamboanga, 2008; Umaña-Taylor & Guimond, 2012) and host culture competencies (i.e., endorsement of host values, practices, and identities; Gartner et al., 2014; Schwartz & Zamboanga, 2008). My findings, however, suggest that, across a wide range of enculturative values, there may be a ceiling effect such that increases in enculturative values, up to a certain point, are ideal for promoting adolescent biculturalism. At a certain point, however, they may constrain adolescent biculturalism development.

Further, prior research, among predominantly first generation immigrant U.S. Chinese-origin families, suggests that fathers with higher Chinese orientations experience more problems balancing demands from the mainstream and Chinese American cultures (Kim et al., 2014). It may be that very high levels of fathers' endorsement of the heritage culture constrain their abilities to balance demands from the heritage and the host cultures, and in turn, constrain fathers' abilities to promote adolescent biculturalism. For

example, in a family context in which the father reported very highly or completely endorsing Mexican American values, there may be limited experiential or psychological space for the socialization of bicultural competence because he might experience more difficulties in navigating, integrating, and switching between Mexican American and mainstream American values. Moreover, this father might feel the need to prioritize values associated with the heritage culture, thus favoring Mexican American socialization practices (Knight et al., 2011; 2016). This in turn, possibly reduces youth opportunities to interact with members from the mainstream American culture, participate in mainstream American culture traditions, feel part of the U.S. society at large, and/or to learn and internalize values deemed important in the mainstream American culture.

In addition, it may be that in family contexts shaped by very high levels of fathers' enculturation, adolescents may experience more cultural dissonance (Telzer, Yuen, Gonzales, & Fuligni, 2016) and more pressure to enculturate (Rodriguez et al., 2002), thus undermining their ability to integrate cultural domains from the heritage and host cultures (Benet- Martinez & Haritato, 2005). Further, family contexts determine the costs and benefits associated with specific youth developmental competencies (Garcia Coll et al., 1996; White, Nair, & Bradley, 2018). Contexts characterized by high levels of paternal enculturation, therefore, may prioritize benefits associated with developing and practicing heritage culture competencies. Adolescents, in turn, may not feel as comfortable practicing host culture competencies within these family contexts.

Paternal acculturation effect. Consistent with hypothesis 1 that fathers' higher acculturation intercepts would predict higher adolescents' bicultural competence, fathers' higher value-based acculturation when their children were in the 5th grade predicted

adolescents' higher bicultural competence in the 12th grade, accounting for fathers' value-based enculturation when their children were in the 5th grade. Thus, adolescents developing in family contexts shaped by fathers who exhibited higher endorsement of mainstream American values had higher levels of bicultural competence. Prior work, among Latino mothers from diverse generational statuses, suggests that U.S. cultural orientations are associated with socialization beliefs granting youth with behavioral autonomy and independence (Roche et al., 2014). It may be that family contexts shaped by higher levels of paternal acculturation are also characterized by higher mainstream socialization beliefs and practices (Knight et al., 2016). In addition, these family contexts may promote the development of adolescent bicultural competence by affording youth with more freedom to explore not only the host culture but also the heritage culture.

In family contexts shaped by higher levels of fathers' acculturation, adolescents may experience more affordances associated with the host culture as they witness their own fathers adapt to host culture value systems. These adolescents may experience more congruency in cultural values, and in turn, in the affordances and demands found within and outside the family context (Carrera & Wei, 2014; Knight et al., 2016). This congruency can facilitate the integration of cultural domains from the heritage and host cultures (Benet- Martinez & Haritato, 2005). Most importantly, these contexts might help adolescents feel more comfortable about belonging to two cultural systems and balancing demands associated with the host and the heritage cultures (Safa et al., 2018), thus likely engaging in more opportunities to develop bicultural competence.

Maternal and Paternal Contextual Effects on Adolescents' Bicultural Competence Development

Findings from mothers and fathers suggest that in U.S. Mexican-origin families primarily characterized by first and second generation immigrant parents, very high levels of parental value-based enculturation during their children's late childhood can undermine their children's bicultural competence in late adolescence. Specifically, when mothers' enculturation levels were higher (almost complete), youth could not experience the benefits of higher mothers' acculturation levels for their bicultural competence. Additionally, fathers' higher levels of enculturation were associated with decreases in adolescents' bicultural competence regardless of fathers' acculturation levels. Very high parental endorsement of values associated with the heritage culture may lead to parental declines in bicultural socialization beliefs and practices, and to greater parents' and adolescents' difficulties in balancing demands from the two cultures (Kim & Hou, 2016; Kim et al., 2014).

In addition, results across mothers and fathers indicate that parental value-based acculturation during their children's late childhood can work as a promoting factor for their children's bicultural competence in late adolescence. Specifically, mothers' higher levels of acculturation were associated with increases in bicultural competence when mothers' enculturation levels were on the lower end of the sample distribution, and fathers' higher levels of acculturation were associated with increases in bicultural competence regardless of fathers' enculturation levels. High parental endorsement of mainstream American values may lead to increases in the amount of autonomy and independence that parents grant their youth (Roche et al., 2014), and may create family environments where adolescents feel safe to practice their bicultural competencies (Safa et al., 2018).

Last, taken together, my findings suggest an interaction effect between mothers', but not fathers', value-based enculturation and acculturation trajectories on adolescent bicultural competence. Prior work underscores the importance of various family roles on the meanings and consequences of parents' socialization beliefs and practices for youth developmental competencies (White et al., 2018b). For example, among U.S. Mexican-origin families, mothers' heritage culture socialization practices predicted adolescent heritage identity attitudes whereas fathers' engagement in the same practices predicted heritage identity processes (White, Knight, Jensen, & Gonzales, 2018a). Similarly, among U.S. Chinese-origin families (Kim & Hou, 2016) and U.S. Mexican-origin families (Safa, White, & Knight, 2019), mothers' (but not fathers') cultural socialization practices and beliefs predicted adolescent biculturalism. My findings are in line with this emerging body of scholarship, suggesting that parental roles may qualify the association between parents' trajectories of acculturation and enculturation and adolescent bicultural competence. It may be important, therefore, to examine the unique influence of additional maternal and paternal affordances and demands, including parents' heritage culture socialization and host culture socialization practices, on the development of adolescent bicultural competence.

Adolescent Gender and Nativity Differences

Contrary to hypotheses 2 and 3, there were no adolescent gender or nativity differences on the influence of parents' enculturation and acculturation trajectories on adolescents' bicultural competence. Prior work has documented gender and nativity differences in parenting socializations beliefs and practices among Latino families. For instance, U.S. Mexican-origin parents with strong Mexican culture orientations tended to

be more protective of girls than of boys (Domènech Rodriguez et al., 2009; Raffaely & Ontai, 2004) and U.S. Latino parents' heritage culture socialization tended to decrease as youths' generational statuses increased (the more family generations that are born in the U.S.; Umaña-Taylor et al., 2009; 2013). Further, prior work has documented gender differences in the association between parents' endorsement of familism and adolescent adjustment. For example, fathers' higher familism predicted female adolescents increases in time spent with family members (Zeiders, Updegraff, Umaña-Taylor, McHale, & Padilla, 2016) and mothers' familism moderated the association between perceived discrimination and deviant peer affiliations among female adolescents (Delgado, Updegraff, Roosa, & Umaña-Taylor, 2011). My findings, however, suggest that these differences do not extend to the ways in which a wide range of parental enculturative and acculturative values influence adolescent bicultural competence. These findings are also consistent with emerging work on biculturalism suggesting no gender differences on the associations between parental dual-cultural orientations and adolescent bicultural socialization beliefs (Kim & Hou, 2016) and no nativity differences on the associations between parental cultural socialization and adolescent host culture and heritage culture orientations (Gartner et al., 2014). Overall, maternal and paternal value-based enculturation and acculturation processes appear to influence adolescents' biculturalism in similar ways across adolescent nativity and gender groups.

Limitations and Future Directions

There were some limitations. The current study's sample is representative of the population from which it was drawn (Roosa et al., 2008). There was, however, limited variability in parents' levels of enculturation. Increasing the number of immigrants

beyond the second generation might increase variability in enculturation trajectories and enable researchers to examine more accurately the influence of different degrees of parental enculturation on adolescents' bicultural competence. Similarly, including more recent first generation immigrants might increase variability in acculturation trajectories and enable researchers to capture better the influence of acculturative changes on adolescents' bicultural competence. Alternatively, a wide range of parents' enculturative and acculturative values may have the greatest influence in shaping the affordances and demands specific to the heritage and the host cultures that can influence the development of adolescents' bicultural competence. This approach, however, does not allow for examination of any variability in the specific trajectories of different values (e.g., familism, independence) and their respective associations to adolescent bicultural competence. Future work might consider examining the associations between adolescent bicultural competence and parents' trajectories of specific enculturative and acculturative values. This more nuanced approach may capture additional variability in parents' value-based enculturation and acculturation trajectories, and detect adolescent gender and nativity differences in the associations between parents' trajectories and adolescent bicultural competence.

The way in which parental values influence their socialization beliefs and practices is not uniform across settings or time (Tam & Lee, 2010). To understand better the links between adolescent bicultural competence and parental value-based enculturation and acculturation, it might be important to assess parental endorsement of host and heritage values in specific settings and times, and to examine whether some values prevail over others in specific circumstances. For instance, it is possible for a

mother to endorse individualism and familism values. When deciding, however, what college her son will attend, this mother may prioritize individualism and send her son to the best college though the furthest from home. Alternatively, when deciding whether her son should participate in a study abroad summer program, this mother may prioritize familism and ask her son to spend summer with the family. Assessments that include real-life situations may improve understanding of the ways in which parental endorsement of heritage and host culture values shape the cultural affordances and demands youth encounter within and outside the family context.

The family is an influential context for youth development (Bronfenbrenner & Morris, 2006; Garcia Coll et al., 1996). Future work on familial contextual effects should investigate the mechanisms (e.g., bicultural socialization beliefs and practices, difficulties balancing bicultural demands) via which parental enculturation and acculturation trajectories work to influence adolescent bicultural competence. Furthermore, not only family but also school and neighborhood contexts are critical settings of the adolescent developmental niche (Eccles et al., 1993). Taking a broader view that includes the influence of multiple contexts can provide a more comprehensive picture of the ways in which contextual affordances and demands associated with the heritage and host cultural systems might simultaneously work to promote or undermine adolescent bicultural competence.

Conclusion

This research contributes to a better understanding of the influence of parents' value-based enculturation and acculturation trajectories across their youths' development on adolescent bicultural competence development. Findings suggest that parental

enculturation and acculturation trajectories simultaneously work to influence adolescent bicultural competence. Furthermore, they indicate that parental acculturation can promote adolescents' bicultural competence whereas very high levels of parental enculturation can undermine adolescents' bicultural competence. By examining the effect of multiple and often competing familial contextual influences on adolescent bicultural competence development, this work provides insights on intergenerational cultural transmission and advances scholarship on the culturally bounded nature of human development.

Paper 2: A Family Stress Model Investigation of the Development of Bicultural Competence Among Mexican-Origin Adolescents

The family stress model postulates that parents' experiences of environmental stressors affect youth's development by undermining or disrupting key parental behaviors and family processes (Conger, Conger, & Martin, 2010). A large body of research supports this model as a useful framework for understanding the family and parenting mechanisms by which different environmental stressors influence youth's lives (Masarik & Conger, 2017). Most family stress model research, however, has focused on a limited range of stressors, parenting practices, and indicators of youth adjustment. First, research initially focused on economic hardship; subsequent expansions have included stressors associated with living in dangerous neighborhoods (e.g., White, Roosa, & Zeiders, 2012); and more recent extensions have included stressors associated with adapting to two cultural systems (e.g., Hou, Kim, & Wang, 2016). Second, in terms of disrupted parenting practices, most research has concentrated on warmth, monitoring, and discipline (e.g., Simons et al., 2016). Disruptions to culturally salient parenting practices such as *ethnic socialization*, ethnic-racial minority and immigrant parents' efforts to teach

children about the heritage or ethnic-racial group (e.g., behaviors, values, attitudes, history; Hughes et al., 2006), have not been examined. Third, most research has focused on externalizing and internalizing behaviors as key developmental outcomes (e.g., Jocson & McLoyd, 2015). Indicators of adjustment that are salient and normative for ethnic-racial minority and immigrant youth, such as developing *bicultural competence*, skills to effectively manage host or mainstream and ethnic-racial or heritage cultural systems (Basilio et al., 2014), have been excluded. Overall, whether a wide range of environmental stressors disrupt parents' ethnic socialization practices, and in turn, constrain youths' development of different components of bicultural competence (Figures 13a and 13b), has yet to be examined in family stress model research.

Recent calls highlight the need for longitudinal replication and socio-cultural expansions to family stress model scholarship (Conger et al., 2010; White, Liu, Nair, & Tein, 2015b). The current study addresses these calls by investigating a longitudinal, culturally expanded family stress model of U.S. Mexican-origin adolescents' bicultural competence. Bicultural competence is associated with indicators of adjustment commonly studied in family stress model research, including lower externalizing (Safa et al., 2018) and internalizing behaviors (Carrera & Wei, 2014; David, Okazaki, & Saw 2009; Wei et al., 2010). Prior research, also indicates that bicultural competence development is influenced by parenting (Aldoney & Cabrera, 2016; Kim & Hou, 2016; Schwartz et al., 2015) and by environmental stressors (Benet-Martinez & Haritato, 2005; Motti-Stefanidi, Pavlopoulos, & Asendorpf, 2018), suggesting that the family stress model may be a useful tool for advancing an understanding of the environmental and familial circumstances under which youth develop affective, behavioral, and cognitive

components of bicultural competence. Additionally, I tested this model among U.S. Mexican-origin families, the largest immigrant group in the U.S. (Migration Policy Institute, 2016). Finally, I focused on the development of bicultural competence during adolescence, a developmental period in which youth become exposed to demands and affordances from numerous socio-cultural contexts (Leventhal, Dupéré, & Brooks-Gunn, 2009; Steinberg, 2008) and develop increasing cognitive abilities (Arnett, 2014) that enable their understanding of complex culturally situated behaviors and demands from different cultural systems (Knight, Safa, & White, 2018; Schwartz et al., 2015).

The Influence of Parental Ecological and Cultural Stressors on Parenting and Youth's Development

Ethnic-racial minority and immigrant groups are disproportionately exposed to numerous ecological stressors, including poverty and poor quality neighborhoods. In the case of the U.S. Latino population, 23% live below the federal poverty level (compared to less than 11% of non-Latino Whites; Census, 2011) and a large proportion resides in lower quality neighborhoods (South, Crowder, & Chavez, 2005). Prior research on the family stress model highlights its utility for understanding the impact of economic hardship and, to some degree, neighborhood danger on disrupted parenting and on youths' internalizing and externalizing behaviors among diverse groups. Family stress model research has shown, for example, that family economic hardship was associated with increases in youths' externalizing behaviors via increases in parents' harsh parenting behaviors among U.S. European families (Neppl, Senia, & Donnellan, 2016). Similarly, mothers' reports of family economic hardship were associated with increases in youths' externalizing behaviors via decreases in mothers' nurturant-involved parenting (e.g.,

being warm) and investment (e.g., helping with homework) among U.S. Black families (Simons et al., 2016). Higher levels of mothers' perceived neighborhood and housing disorder were associated with more frequent maternal harsh parenting and inconsistent discipline, and in turn, higher youths' internalizing and externalizing symptoms in a U.S. ethnically-racially diverse sample (Jocson & McLoyd, 2015). Finally, mothers' reports of perceived neighborhood danger were associated with lower family cohesion, and in turn, increases in youths' internalizing symptoms among U.S. Mexican-origin families (White et al., 2012). Thus, consistent with prior reviews (Conger et al., 2010; Masarik & Conger, 2017), the family stress model appears to have utility across diverse groups, including immigrants and ethnic-racial minority families, especially in research on common ecological stressors, like economic and neighborhood stressors. The model, however, has not been examined relative to parents' ethnic socialization or youth's bicultural competence.

In addition to exposure to ecological stressors (i.e., economic hardship and neighborhood danger), many ethnic-racial minority and immigrant families concurrently experience cultural stressors associated with the process of dual-cultural adaption, or stressors associated with adaptation to the host or mainstream culture (*acculturative stressors*; Berry, Kim, Minde, & Mok, 1987; Rodriguez, Myers, Mira, Flores, & Garcia-Hernandez, 2002) and stressors associated with adaptation to the heritage or ethnic-racial culture (*enculturative stressors*; Gonzales, German, & Fabrett, 2012; Rodriguez et al., 2002). Typical acculturative and enculturative stressors can include changes in behaviors, language competency pressures, and challenges balancing different cultural values (Gil, Vega, & Dimas, 1994; Rodriguez et al., 2002; Torres, Driscoll, & Voel, 2012). Recent

family stress model research has documented the negative effect of parental acculturative and enculturative stressors on parenting practices and family processes. For instance, parental acculturative stressors and parental combined acculturative and enculturative stressors were positively associated with marital and parent-child conflict among U.S. Chinese-origin families (Hou et al., 2016). In addition, parental combined acculturative and enculturative stressors were associated with lower family functioning (i.e., parental involvement, positive parenting, and family cohesion) among Latino families (Lorenzo-Blanco et al., 2016). Furthermore, mothers' acculturative stressors were found to have a negative indirect effect on maternal warmth via mothers' depression among U.S. Mexican-origin families (White, Roosa, Weaver, & Nair, 2009). None of these studies, however, examined how parental acculturative and enculturative stressors might disrupt or undermine parental ethnic socialization.

Furthermore, there is some empirical evidence suggesting that parental acculturative and enculturative stressors can compromise youth's development, though development of bicultural competence has not been examined in these studies. For instance, research has shown that parental acculturative stressors were positively associated with children's internalizing symptoms among first-generation U.S. Mexican-origin families (Leidy, Parke, Cladis, Coltrane, & Duffy, 2009). Similarly, U.S. Chinese parents who were exposed to higher acculturative stressors reported that their children had more school problems and engaged in more behaviors leading to increasing parent-child conflict (Lau, 2010). Moreover, parental acculturative stressors and parental combined acculturative and enculturative stressors predicted increases in youths' depressive symptoms and delinquent behaviors and decreases in youths' academic

performance via family processes (i.e., parent-child conflict and alienation) among U.S. Chinese-origin families (Hou et al., 2016). In addition, parental combined acculturative and enculturative stressors were associated with decreases in youths' self-esteem and increases in youths' aggressive behaviors and alcohol and cigarette use via lower family functioning (i.e., parental involvement, positive parenting, and family cohesion; Lorenzo-Blanco et al., 2016). The findings reviewed here are largely consistent with putative family stress model associations between family environmental stressors and youth development, though they do not extend to the development of bicultural competence.

The current study extends prior work by examining the influence of parental exposure to not only ecological stressors (i.e., economic hardship and neighborhood danger) but also to cultural stressors that have received less attention in family stress model research (i.e., English and Spanish language competency pressures) on culturally salient parenting practices (i.e., ethnic socialization) among U.S. Mexican-origin families. Because language is a powerful transmitter and activator of culture (Luna, Ringberg, & Peracchio, 2008), language difficulties and pressures often become one of the most challenging issues for individuals undergoing dual-cultural adaptation (Mori, 2000), thus language competency pressures are especially important sources of acculturative or enculturative stress. First-generation U.S. Mexican-origin immigrants experience more English language competency pressures, whereas subsequent generation immigrants, including 1.5 generation immigrants, experience more Spanish language competency pressures (Rodriguez et al., 2002), making it essential to control for parental nativity differences in models including these cultural stressors. Furthermore, distinct types of stressors might have different implications for parental ethnic socialization and

youth's bicultural competence development. Overall, ecological and cultural stressors are expected to disrupt or undermine parenting practices, specifically parents experiencing higher levels of family environmental stressors will exhibit lower levels of ethnic socialization practices.

Parental Ethnic Socialization and Youth's Bicultural Competence

Ethnic-racial minority and immigrant youth develop bicultural competence as they encounter opportunities to internalize cultural domains (i.e., affiliations, attitudes, behaviors, knowledge, values) associated with the heritage and the host cultures (Benet-Martinez et al., 2002; Tadmor, Galinsky, & Maddux 2012) and as they navigate the intersection between the affordances and demands from those cultural systems (Ward & Geeraert, 2016). Youth experience opportunities to learn about the host culture across multiple contexts, including family, school, and neighborhood contexts (Knight et al., 2014; Safa et al., 2018; White et al., 2017). The family context, however, is often the main context in which youth learn about the heritage culture (Knight et al., 1993; Knight, Carlo, Mahrer, & Davis, 2016; Motti-Stefanidi, 2018). Further, for youths who are born in the host country and for those who migrate from their country of origin at an early age, the process of being socialized into and learning about the heritage culture is especially relevant for the development of heritage culture competencies (Knight et al., 1993; Umaña-Taylor et al., 2009) needed for bicultural competence development. Examining, therefore, the effect of disruptions to parental ethnic socialization on the development of bicultural competence, including bicultural comfort, facility, and advantage, is important.

There is empirical evidence linking parental ethnic socialization with youth's internalization of heritage culture and host culture domains. For instance, U.S. Mexican-

origin mothers' ethnic socialization was positively associated with youths' endorsement of heritage culture values two years later (Knight et al., 2011). Similarly, U.S. Latino youths' reports of familial ethnic socialization were positively associated with youths' heritage identity over a 4-year span (Umaña-Taylor & Guimond, 2012) and were prospectively and positively associated with youths' heritage identity, Spanish fluency, and endorsement of familism (Umaña-Taylor et al., 2009). Furthermore, parental ethnic socialization was positively associated with U.S. Asian female adolescents' heritage and host identities (Gartner, Kiang, & Supple, 2014) and with U.S. Latino adolescents' endorsement of bicultural orientations, including affiliations, behaviors, knowledge, and values associated with the heritage and host cultures (Schwartz & Zamboanga, 2008). None of these studies, however, have examined how disruptions to parental ethnic socialization can constrain the development of youths' bicultural competence, specifically the ability to navigate bicultural demands with comfort and facility and to perceive advantage in doing so (Basilio et al., 2014; LaFromboise et al., 1993; Schwartz & Unger, 2010).

Parental ethnic socialization efforts that include practices promoting cultural pride and cultural customs and traditions (i.e., *cultural socialization*; Hughes et al., 2006) might promote bicultural competence development via youth's engagement in bicultural identity processes. Prior research has linked parental ethnic socialization practices to youths' engagement in identity processes aimed to understand what their heritage or ethnic-racial group membership means to them (Umaña-Taylor et al., 2009). Youth who engage in identity processes associated with their heritage or ethnic-racial identity might also engage in identity processes aimed to understand what their host or mainstream

group membership means to them (Gartner et al., 2014) and might explore the meaning of one group membership in relation to the other group membership. Furthermore, youths who perceive themselves as members of the heritage or ethnic-racial group and of the host or mainstream group are more likely to internalize other cultural domains (i.e., attitudes, behaviors, knowledge, and values; Tajfel & Turner, 1986) associated with both groups. Importantly, internalization of different cultural domains may take place at different rates and have different implications for the development of bicultural competence (Schwartz, Unger, Zamboanga, & Szapocznik, 2010; Schwartz et al., 2015). For instance, the ability to switch between values of individualism and familism requires additional emotional and cognitive skills than the ability to switch between English and Spanish languages (Knight et al., 2009). Youth who successfully integrate cultural domains associated with both cultures are more likely to develop bicultural competence (Benet-Martinez & Haritato, 2005). Consequently, family contexts shaped by low parental ethnic socialization might provide youth with fewer affordances to internalize the two cultural systems and, in turn provide fewer opportunities for youth to develop bicultural competence, including the ability to jointly manage heritage culture and host culture domains (i.e., affiliations, attitudes, behaviors, knowledge, values), to engage in frame-switching (Benet-Martinez, Leu, Lee, & Morris, 2002), and to navigate bicultural demands with comfort, facility, and perceived advantage (Basilio et al., 2014; LaFromboise, Coleman, & Gerton 1993; Schwartz & Unger, 2010). In this way, any disruption to parental ethnic socialization associated with family environmental stressors could have important implications for youth's bicultural competence development.

Youth's Gender and Nativity Differences

Given the interactive nature of developing individuals and the proximal contexts in which they are embedded (Bronfenbrenner & Morris, 2006), examining youth's gender and nativity in these associations is important. Furthermore, differences in socialization processes among U.S. Mexican-origin and Latino families have been documented. For instance, research has shown that Mexican-origin parents with strong attachment to the Mexican culture tended to be more protective of girls than of boys, such that girls may be expected to be in the home more, assist their families more, and take on more household responsibilities than boys (Domènech Rodriguez, Donovick, & Crowley, 2009; McHale, Updegraff, Shanahan, Crouter, & Killoren, 2005). Thus, the effects of family environmental stressors and parental ethnic socialization on girls might be stronger than on boys. Similarly, Latino youths' reports on their parents' ethnic culture socialization decreased as their generational statuses increased (the more family generations that are born in the U.S.) likely because later generation youths are less receptive to these messages (Huynh & Fuligni, 2008; Umana-Taylor et al., 2009). Thus, the effects of family environmental stressors and parental ethnic socialization on Mexico-born youth might be stronger than on U.S.-born youth.

The Current Study

The current study offers a substantial extension to decades of family stress model research by testing a culturally expanded family stress model. In this longitudinal structural equation model, I examined whether U.S. Mexican-origin parents' exposures to common ecological stressors (i.e., economic hardship and neighborhood danger) and English or Spanish language competency pressures disrupted or undermined their culturally salient parenting practice of ethnic socialization and, in turn constrained their

adolescents' normative bicultural competence development. Specifically, I tested whether parents experiencing higher levels of ecological stressors and English or Spanish competency pressures in 5th grade would engage less frequently in ethnic socialization with their adolescents in 7th grade and, in turn adolescents would report lower degrees of bicultural competence in 10th grade (Hypothesis 1). Furthermore, I examined whether the effects of parents' exposures to these stressors on adolescents' bicultural competence would be greater for female adolescents (Hypothesis 2), and for adolescents born in Mexico (Hypothesis 3). Finally, I assessed three different components of U.S. Mexican-origin bicultural competence: perceived ability to respond to demands from Mexican and mainstream cultural systems with facility (bicultural facility) and comfort (bicultural comfort), and perceived advantage in doing so (bicultural advantage). In addition, I controlled for parents' nativity and previous levels of ethnic socialization. I was unable to control for prior levels of adolescents' bicultural competence (i.e., 5th grade) because the three assessed components of bicultural competence are not developmentally appropriate constructs during childhood (Basilio et al., 2014). I controlled, therefore, for adolescents' 5th grade endorsement of mainstream and Mexican American values, as these constructs are developmentally appropriate during late childhood and are differentially but strongly related to bicultural competence (Knight et al., 2014).

Method

Participants

Data were from an ongoing longitudinal study of cultural and contextual influences in the lives of U.S. Mexican-origin adolescents and their families (Roosa et al., 2008). Participants included 749 U.S. Mexican-origin adolescents (49% female), their

mothers, and a subsample of fathers selected from schools in the Phoenix metropolitan area that served ethnically and linguistically diverse communities. Families were eligible if they had a target 5th grader attending a sampled school; the participating mother was the biological mother, lived with the child, and was of Mexican-origin; the child's biological father was of Mexican-origin; the child was not learning disabled; and no stepfather figure was living with the child. Out of the 749 families, 579 were two-parent families and 80% of fathers in these two-parent families agreed to participate (n = 467).

The current study uses data from the first (W1, 5th grade), second (W2, 7th grade), and third (W3, 10th grade) waves. In 5th grade, 30.2% of mothers, 23.2% of fathers, and 82.5% of adolescents chose to be interviewed in English and the remaining in Spanish. A majority of mothers (74.3%) and fathers (79.9%) were born in Mexico. The remaining U.S.-born parents ranged from 2nd to 4th generation (Roosa et al., 2008). First generation immigrant mothers had been living in the U.S. for an average of 12.57 years (SD = 7.91) and fathers for an average of 14.58 years (SD = 8.14). The majority of adolescents were born in the U.S. (70.3%). Mean age was 35.9 years (SD=5.81) for mothers, 38.1 years (SD=6.26) for fathers, and 10.42 years (SD = *.55*) for adolescents. Both parents reported about 10 years of education (SD_M=3.67*;* SD_F=3.94). Annual family incomes ranged from less than $5,000 to more than $95,000 (mean $30,000 – $35,000). Of the original 749 families, 94.8% participated in 7th grade and 85.2% participated in the 10th grade.

Procedure

Study procedures were approved by the institutional review board at Arizona State University. Complete research procedures are published elsewhere (Roosa et al., 2008). Adolescents, mothers, and fathers completed computer assisted personal

interviews (approximately 2.5 hours) at their home, in their preferred language. The interviewers received at least 40 hours of training that included information on the project's goals, characteristics of the target population, the importance of professional conduct when visiting participants' homes as well as throughout the process, and the critical role they would play in collecting the data. Participants were compensated $45, $50, and $55 at each respective wave. Retention efforts included recurrent personal communication with participants, efforts to build a sense of belonging or attachment to the study, providing incentives for participants to remain in contact with researchers, and developing plans to locate participants with whom contact was lost.

Measures

Demographics and covariates. Parents and adolescents reported on a series of demographic characteristics including their dates of birth, gender (0 = male; 1= female), and nativity (0 = Mexico born; 1= U.S. born). When fathers did not participate, or were absent from the home, mothers reported on the nativity of the adolescents' biological father. Parents reported on annual family income (1 = $0,000–$5,000 to 20 = $95,001+). Adolescents reported on their endorsement of mainstream and Mexican American values (5^{th} grade) using the Mexican American Cultural Values Scale (MACVS; Knight et al., 2010). Previous work supported the construct validity and reliability of the measure for use with U.S. Mexican-origin participants (Cruz et al., 2017; Knight et al., 2010). The Mexican American values scale (31 items) assesses Familism, Respect, and Religiosity. The mainstream values scale (14 items) assesses Material Success; Independence and Self-Reliance; and Competition and Personal Achievement. Adolescents indicated their endorsement of each item by responding with a five-point Likert-type scale ranging from

(1) *not at all* to (5) *completely*. The means of item scores for the mainstream value scale and for the Mexican American value scale were computed separately, with higher scores indicating greater value endorsement. The Cronbach's α for the Mexican American values scale was .85 and .84 for the mainstream American values scale.

Parents' ecological stressors (5th grade). Parents reported on their *economic hardship* using an adapted version (Barrera, Caples, & Tein 2001) of an economic pressures measure developed to use in family stress model research (Conger et al., 2002). Previous work supported the construct validity and reliability of the adapted version for use across diverse groups and diverse Mexican-origin adults specifically (Barrera et al., 2001). This measure includes three subscales reflecting (a) an inability to make ends meet (2 items, e.g., "tell us how much difficulty you had with paying your bills" and "at the end of each month did you end up with"), on a response scale ranging from (1) *a great deal of difficulty* to (5) *no difficulty at all and* (1) *more than enough money left* to (5) *very short of money, respectively;* (b) not enough money for necessities (7 items, e.g., "You had enough money to afford the kind of food you needed" and "You had enough money to afford the kind of clothing you needed"), on a response scale ranging from (1) *not at all true* to (5) *very true;* and (c) financial strain (2 items, e.g., "how often do you expect that you will have to do without the basic things that your family needs" and "how often do you expect that you and your family will experience bad times such as poor housing or not having enough food"), on a response scale ranging from (1) *almost never or never* to (5) *almost always or always*. Some items were reverse coded and the mean of item scores was computed, with higher scores representing greater economic hardship. For mothers and fathers, the Cronbach's α was .92. In addition, parents reported on their *perceptions*

of the degree of danger in their neighborhoods using a 3-item subscale of the Neighborhood Quality Evaluation Scale (NQES, Roosa et al., 2005). Previous work supported the construct validity and reliability of the measure for use with U.S. Mexican-origin participants across language preference (Kim, Nair, Knight, & Roosa, 2009). Parents indicated the level of agreement on the following items (all reverse coded): "it is safe in your neighborhood," "your neighborhood is safe for children during the daytime," and "it is safe for children to play outside your home." The response scale ranged from (1) *not true at all* to (5) *very true.* The mean of item scores was computed, with higher scores reflecting higher sense of danger in the neighborhood. For mothers, the Cronbach's α was .89 and for fathers, the Cronbach's α was .88. Mean scores on economic hardship and neighborhood danger scales were used as indicators of an ecological stressors latent construct.

Parents' cultural stressors or language competency pressures (5th grade). Parents completed the language dimension of the Multidimensional Acculturative Stress Inventory (Rodriguez et al., 2002). The measure has demonstrated good psychometric properties in samples of Mexican-origin participants (Rodriguez, Mira, Paez, & Myers, 2007) and diverse Latino participants (Lorenzo-Blanco et al., 2016). This 10-item subscale evaluates *acculturative and enculturative stress resulting from English and Spanish language competency pressures and difficulty* (e.g., "people have treated you rudely or unfairly because you do not speak English/Spanish well"). The response scale ranged from (1) *not at all true* to (5) *very true*. The means of item scores were computed separately for the English competency pressures and the Spanish competency pressures subscales, with higher scores indicating higher levels of language-related acculturative or

enculturative stress. For mothers, the Cronbach's α were .87 and .82 for English and Spanish pressures subscales, respectively. For fathers, the Cronbach's α were .83 and .85 for English and Spanish pressures subscales, respectively.

Parents' ethnic socialization (5th and 7th grades). Parents reported on how often they socialize their youths about the Mexican American culture using an adaptation of the 10-item *Ethnic Socialization Scale* from the Ethnic Identity Questionnaire (e.g., Knight et al., 1993). This measure primarily assesses *cultural socialization* efforts such as parents telling children about cultural traditions, values, beliefs, and ethnic group history. The adaptation includes only age appropriate items and additional items specifically focused on telling children about values that have been associated with a Mexican heritage (Knight et al., 2010). The measure has demonstrated good psychometric properties in samples of Mexican-origin participants (Knight et al., 2011). Sample items included: "How often do you: "tell your child to be proud of his/her Mexican background"; "tell your child that he/she always has an obligation to help members of the family"; and "tell your child about the discrimination she/he may face because of her/his Mexican background. The response scale ranged from (1) *almost never or never* to (4) *a lot of the time (frequently).* The mean of item scores was computed, with higher scores reflecting more ethnic socialization. For mothers, the Cronbach's α were 74 and .77 at 5th and 7th grades respectively. For fathers, the Cronbach's α were .76 and .78 at 5th and 7th grades respectively.

Adolescents' bicultural competence (10th grade). Adolescents reported on *behavioral, affective, and cognitive components of their bicultural competence* (i.e., facility, comfort, and advantage respectively) using the Mexican American Biculturalism

Scale (MABS, Basilio et al., 2014). Previous work supported the construct validity and reliability of the measure for use with U.S. Mexican-origin adolescents across gender and language-preference (Basilio et al., 2014). All subscales included 9 items. The facility subscale assesses individuals' perceived ability to respond to demands from Mexican and mainstream cultural systems with ease (e.g., "Being obligated to satisfy my family's needs sometimes, and satisfying my own needs other times is ___"). The response scale ranged from (1) *very easy* to (5) *very difficult*. The comfort subscale assesses individuals' perceived ability to respond to demands from Mexican and mainstream cultural systems with comfort (e.g., "Sometimes you may need to make an important decision on your own, and other times you may need to ask your family for advice. Which of the following best describes you?"). The response scale included (1) *I am only comfortable when [e.g., I need to ask my family for advice] or [e.g., I make decisions on my own], (*2) *I am sometimes comfortable in both of these situations,* (3) *I am often comfortable in both of these situations,* (4) *I am most of the time comfortable in both of these situations,* and (5) *I am always comfortable in both of these situations.* The advantage subscale assesses individuals' perceived advantage in their ability to respond to demands from Mexican and mainstream cultural systems (e.g., "For me being able to feel part of the Mexican/Mexican American community sometimes, and being able to feel part of the White (gringo) community other times has ___"). The response scale ranged from (1) *many advantages* to (5) *many disadvantages*. Means were calculated for each subscale, with higher scores indicating higher levels of bicultural facility, comfort, and advantage. Cronbach's α were .81 (facility), .85 (comfort), and .86 (advantage). Based on prior

psychometric work (Basilio et al., 2014), mean scores on each subscale were used as indicators of a bicultural competence latent construct.

Analytic Plan

Preliminary analyses were conducted in SPSS 24 (IBM Corp., 2016). First, descriptive statistics among all observed study variables were examined. Furthermore, attrition analyses were conducted to examine whether families who participated in interviews in 7th and 10th grades, differed on 5th-grade demographic variables from those that did not. In addition, I examined whether two-parent families with participating fathers (n = 467) differed on 5th-grade demographic variables from two-parent families in which fathers did not participate. If significant differences emerged, variables were included in the analytical models as auxiliary variables to reduce bias attributed to missingness (Enders, 2010).

Next, longitudinal structural equation analyses were conducted using software available in *Mplus* version 8 (Muthén & Muthén, 2010). Missing data were handled using full information maximum likelihood estimation with robust standard errors, an estimation that minimizes bias in parameter estimates and accounts for non-normality of observations while retaining the original sample size (Enders, 2013). Multiple fit indices (chi-squared test, CFI, RMSEA, and SRMR) were used to assess global model fit; good (acceptable) model fit is reflected by a non-significant chi-squared test, CFI greater than .95 (.90), RMSEA less than .05 (.08), and SRMR less than .05 (.08; Hu & Bentler, 1999). Last, multi-group analyses were conducted to examine adolescents' gender and nativity differences on the influence of parents' ethnic socialization on adolescents' bicultural competence (path b) and on the influence of parents' exposures to environmental

stressors on adolescents' bicultural competence (path c). I did not expect adolescents' gender and nativity to moderate associations between parents' exposures to environmental stressors and parents' ethnic socialization (path a). Specifically, a fully unconstrained model was compared to a partially constrained model (with paths b and c constrained) using a Satorra-Bentler scaled chi-squared difference test. A non-significant chi-square suggested invariance of the hypothesized paths across gender and nativity groups. Mediation effects were tested using the distribution-of-product method in RMediation (Tofighi & MacKinnon, 2011).

Results

Preliminary Analyses

Attrition analyses examined whether families who participated in interviews in 7th and 10th grades differed on 5th-grade child demographic (i.e., age, nativity, gender, family annual income), mother demographic (i.e., age, nativity), and father demographic (i.e., age, nativity) from those that did not. Most demographic comparisons were nonsignificant, though families who participated in 10th grade (n = 640) reported higher family annual income [$t(730) = -2.962$, $p = .003$] and children were less likely to be born in Mexico [$\chi^2(1) = 4.681$, $p = .041$] compared to those who did not participate in 10th grade (n = 109). No differences were observed in study variables. In addition, preliminary analyses examined whether two-parent families with participating fathers (n = 467) differed from two-parent families in which fathers did not participate (n = 112). No differences were observed in child demographic (i.e., age, nativity, gender, family annual income), mother demographic (i.e., age, nativity), or study variables. Father-adolescent dyad analyses, therefore, include the full two-parent subsample (n = 579).

Next, I examined skewness and kurtosis statistics for study variables in the mother-adolescent dyad and in the father-adolescent dyad samples and found evidence of non-normality for the Spanish language pressure variable in both samples. Means, standard deviations, and correlations are presented in Tables 1 and 2. In the mother-adolescent dyad sample (N = 749; Table 5), mothers' reports of English competency pressures in 5th grade were negatively associated with their reports of Spanish competency pressures in 5th grade, and positively associated with their reports on economic hardship and neighborhood danger in 5th grade. Mothers' reports on economic hardship in 5th grade were positively associated with their reports on neighborhood danger in 5th grade. Furthermore, mothers' ethnic socialization in 7th grade was negatively associated with their reports of Spanish competency pressures in 5th grade and positively associated with their reports of English competency pressures in 5th grade. Adolescents' bicultural facility in 10th grade was negatively associated with mothers' English competency pressures in 5th grade. Adolescents' bicultural comfort and advantage in 10th grade were negatively associated with mothers' Spanish competency pressures in 5th grade and positively associated with mothers' ethnic socialization in 7th grade. Last, adolescents' endorsement of mainstream American values in 5th grade was negatively associated with their bicultural facility and advantage in 10th grade. Adolescents' endorsement of Mexican American values in 5th grade was positively associated with their bicultural advantage in 10th grade. The three components of 10th grade adolescents' bicultural competence were positively and highly correlated with one another.

In the father-adolescents dyad sample (n = 579; Table 6), fathers' reports of

English competency pressures in 5th grade were negatively associated with their reports of Spanish competency pressures in 5th grade, and positively associated with their reports on economic hardship and neighborhood danger in 5th grade. In addition, fathers' reports on economic hardship in 5th grade were positively associated with their reports on neighborhood danger in 5th grade. Last, fathers' ethnic socialization in 7th grade was negatively associated with their reports of Spanish competency pressures in 5th grade. Furthermore, adolescents' endorsement of mainstream American values in 5th grade was negatively associated with their bicultural facility and advantage in 10th grade. Adolescents' endorsement of Mexican American values in 5th grade was positively associated with their bicultural advantage in 10th grade. The three components of 10th grade adolescents' bicultural competence were positively and highly correlated with one another.

Effects of Maternal Exposures to Environmental Stressors on Adolescents' Bicultural Competence via Maternal Ethnic Socialization

After examining results from descriptive statistics and attrition analyses, I tested a longitudinal structural equation model using Mplus 8 (Muthén & Muthén, 2010). I examined whether 5th grade mothers' exposures to environmental stressors predicted 7th grade mothers' ethnic socialization. I then linked 7th grade mothers' ethnic socialization to 10th grade adolescents' bicultural competence. Model specification included a bicultural competence latent factor with three indicators: bicultural facility, comfort, and advantage and an ecological stressors latent factor with two indicators: economic hardship and neighborhood danger. In addition, I controlled for mothers' nativity (to account for differences on English versus Spanish language competency pressures), 5th

grade mothers' ethnic socialization, and 5th grade adolescents' endorsement of mainstream and Mexican American values. Furthermore, 5th grade family income was included as an auxiliary variable to reduce bias attributed to missingness (Enders, 2010). Mplus 8 estimated mediation path coefficients and standard errors. I used RMediation to obtain indirect effects, standard errors of indirect effects, and confidence intervals (95% CIs) of the indirect effects (distribution-of-product method; Tofighi & MacKinnon, 2011).

As seen in Figure 14, 5th grade mothers' exposure to Spanish pressures predicted lower 7th grade mothers' ethnic socialization, controlling for mothers' nativity, prior levels of mothers' ethnic socialization, and exposure to other environmental stressors. Mothers' 5th grade exposure to English pressures and to ecological stressors did not predict 7th grade mothers' ethnic socialization. In addition, 7th grade mothers' ethnic socialization positively predicted 10th grade adolescents' bicultural competence controlling for adolescents' 5th grade endorsement of mainstream and Mexican American values. Mediational tests revealed that 7th grade mothers' ethnic socialization mediated the link between 5th grade mothers' exposures to Spanish language pressures and 10th grade adolescents' bicultural competence (*ab* = -.013, *SE* = .008, 95% CI [-.030, -.001]). This finding indicates that adolescents developing in family contexts where mothers experienced higher levels of 5th grade Spanish language competency pressures had lower levels of bicultural competence in 10th grade, and the intervening mechanism was declines in 7th grade mothers' ethnic socialization. Findings replicated in models that did not control for adolescents 5th grade endorsements of mainstream and Mexican American values.

To investigate whether the effects of maternal exposures to environmental stressors on adolescents' bicultural competence held across adolescents' nativity, a model constraining paths of interest (paths b and c) to be equal across Mexico and U.S. born adolescents and another one allowing the paths to differ across the two groups were estimated. Satorra-Bentler scaled chi-squared difference tests indicated that the paths did not differ by nativity, $\Delta\chi^2$ (4) = 3.795, p = .434. Similar tests were conducted to investigate whether the effects held across adolescents' gender. A model constraining paths of interest (paths b and c) to be equal across male and female adolescents and another one allowing the effects to differ across the two groups were estimated. Findings suggested that the paths did not differ by gender, $\Delta\chi^2$ (4) = 2.062, p = .724. In light of these findings, I then conducted a follow-up analysis and included gender and nativity as covariates on the outcome variable (see Figure 15). Findings were similar to those in Figure 14 (i.e., no differences in coefficient direction and significance levels), thus, I report the most parsimonious model as the final model (Figure 14).

Effects of Paternal Exposures to Environmental Stressors on Adolescents' Bicultural Competence via Paternal Ethnic Socialization

Next, I tested a longitudinal structural equation model using Mplus 8 (Muthén & Muthén, 2010). I examined whether 5th grade fathers' exposures to family environmental stressors predicted 7th grade fathers' ethnic socialization. I then linked 7th grade fathers' ethnic socialization to 10th grade adolescents' bicultural competence. Model specification included a bicultural competence latent factor with three indicators: bicultural facility, comfort, and advantage and an ecological stressors latent factor with two indicators: economic hardship and neighborhood danger. In addition, I controlled for fathers'

nativity (to account for differences on paternal ethnic socialization and English versus Spanish language competency pressures), 5th grade fathers' ethnic socialization, and 5th grade adolescents' endorsement of mainstream and Mexican American values. Furthermore, 5th grade family income was included as an auxiliary variable to reduce bias attributed to missingness (Enders, 2010). Mplus 8 estimated mediation path coefficients and standard errors. I used RMediation to obtain indirect effects, standard errors of indirect effects, and confidence intervals (95% CIs) of the indirect effects (distribution-of-product method; Tofighi & MacKinnon, 2011).

As seen in Figure 16, fathers' 5th grade exposure to language competency pressures and to ecological stressors did not predict 7th grade fathers' ethnic socialization, controlling for fathers' nativity and previous levels of ethnic socialization. In addition, 7th grade fathers' ethnic socialization did not predict 10th grade adolescents' bicultural competence controlling for adolescents' 5th grade endorsement of mainstream and Mexican American values. These findings suggest that the hypothesized model might not be capturing the role of fathers on adolescents' bicultural competence development. Findings replicated in models that did not control for adolescents 5th grade endorsements of mainstream and Mexican American values.

To investigate whether the effects of paternal exposures to environmental stressors on adolescents' bicultural competence held across adolescents' nativity, a model constraining paths of interest (paths b and c) to be equal across Mexico and U.S. born adolescents and another one allowing the paths to differ across the two groups were estimated. Satorra-Bentler scaled chi-squared difference tests indicated that the paths did not differ by nativity, $\Delta\chi^2$ (4) = 1.874, p = .759. Similar tests were conducted to

investigate whether the effects held across adolescents' gender. A model constraining paths of interest (paths b and c) to be equal across male and female adolescents and another one allowing the paths to differ across the two groups were estimated. Findings suggested that the paths did not differ by gender, $\Delta\chi^2$ (4) = 1.828, p = .767. In light of these findings, I then conducted a follow-up analysis and included gender and nativity as covariates on the outcome variable (see Figure 17). Findings were similar to those in Figure 16 (i.e., no differences in coefficient direction and significance levels), thus, I report the most parsimonious model as the final model (Figure 16).

Discussion

The current study offers a substantial extension to decades of family stress model research by testing a culturally expanded family stress model in a diverse sample of U.S. Mexican-origin families, including primarily first generation and up to fourth generation immigrant parents. I examined whether immigrant parents' exposures to common ecological stressors (i.e., economic hardship and neighborhood danger) and to cultural stressors (i.e., English or Spanish language competency pressures) disrupted their ethnic socialization and, in turn constrained their adolescents' bicultural competence development. Consistent with the extended family stress model advanced herein, my findings suggest that declines in mothers' ethnic socialization are a mechanism via which mothers' exposures to cultural stressors, specifically Spanish language pressures, undermine adolescents' bicultural competence. Mothers' exposures to English language pressures and to ecological stressors, however, did not disrupt their ethnic socialization or influence adolescents' bicultural competence. Furthermore, contrary to expectations, fathers' exposures to ecological and cultural stressors did not influence their ethnic

socialization or their adolescents' bicultural competence. All findings generalized across adolescent gender and nativity.

Family Stress Model Effects on Ethnic Socialization and Adolescent Bicultural Competence

Supporting hypothesis 1, adolescents developing in family contexts where mothers experienced higher levels of Spanish language competency pressures when target adolescents were in the 5th grade had lower levels of bicultural competence in the 10th grade, and the intervening mechanism was declines in 7th grade maternal ethnic socialization. That is, mothers who experienced more Spanish language competency pressures engaged in less ethnic socialization, and this in turn, predicted lower adolescents' bicultural competence. These findings, consistent with the family stress model (Conger et al., 2010), offer evidence that cultural stressors can disrupt culturally salient parenting practices and, in turn, constrain adolescent development of cultural competencies.

My findings indicate that mothers' experiences of Spanish language competency pressures – important sources of enculturative stress – disrupt their ethnic socialization practices, above and beyond any effect of mothers' nativity, earlier levels of maternal ethnic socialization, and exposures to other environmental stressors. Substantial prior work documents a positive association between environmental stressors and parental depression generally (Conger et al., 2002; Elder, Eccles, Ardelt, & Lord, 1995; Hill & Herman-Stahl, 2002; White et al., 2009) and enculturative stressors and maternal depression specifically (Zeiders, Umaña-Taylor, Updegraff, & Jahromi, 2015). The current finding suggests that these enculturative stressors, and their resultant

psychological distress (Wang, Schwartz, & Zamboanga, 2010; Zeiders et al., 2015), can contribute to disruptions to maternal ethnic socialization. Although, psychological distress was not directly assessed in the current study (because the larger study did not include an assessment that allowed for a prospective test of the association), it is likely that mothers experiencing higher Spanish language competency pressures are struggling to engage in ethnic socialization due to the psychological distress that these sources of enculturative stress cause. This finding extends the range of parenting behaviors that are affected by ecological and cultural stressors to include ethnic socialization practices, moving beyond prior work examining harsh parenting (Jocson & McLoyd, 2015; Neppl et al., 2016), discipline (Jocson & McLoyd, 2015), warmth (Lorenzo-Blanco et al., 2016; Simons et al., 2016; White et al., 2009), parental investment, and monitoring (Simons et al., 2016).

Moreover, my findings suggest that disruptions to maternal ethnic socialization practices, in turn, undermine adolescent bicultural competence. Prior work established that maternal ethnic socialization has important implications for U.S. Asian female adolescents' host and heritage cultural identities (Gartner et al., 2014) and for U.S. Latino adolescents' bicultural orientations (Schwartz & Zamboanga, 2008). The current findings extend the range of adolescent cultural competencies influenced by parental ethnic socialization to include bicultural competence – comprising affective, behavioral, and cognitive components. This extension is important because it highlights the benefits of maternal ethnic socialization practices not only for adolescents' cultural orientations, but also for adolescents' development of competencies needed to successfully navigate bicultural demands. In addition, the family context might be the primary context in which

youth learn about the heritage culture (Knight et al., 1993; 2016; Motti-Stefanidi, 2018). Disruptions to maternal ethnic socialization, therefore, may be associated with decreases in adolescents' opportunities to learn about heritage culture traditions, values, beliefs, and history. Limited familial affordances associated with the heritage culture may be related to decreases in youth engagement in heritage identity processes (Umaña-Taylor et al., 2009; Umaña-Taylor & Guimond, 2012) and likely to decreases in youth exploration of the meaning of their bicultural memberships (Gartner et al., 2014). This in turn, may constrain youth opportunities to internalize heritage and host culture domains (i.e., attitudes, behaviors, knowledge, and values; Knight et al., 2011; Schwartz & Zamboanga, 2008; Tajfel & Turner, 1986) and to successfully integrate cultural domains from both cultural systems, thus undermining youth bicultural competence development.

Environmental Stressors and Parental Ethnic Socialization

Enculturative stressors. Consistent with the mediated effect described above, mothers' exposures to enculturative stressors when their children were in the 5th grade predicted lower levels of maternal ethnic socialization in the 7th grade, above and beyond any effect of mothers' nativity, earlier levels of maternal ethnic socialization, and exposure to other environmental stressors. The remaining findings, however, failed to support the family stress model notion that environmental stressors disrupt this culturally salient parenting practice among U.S. Mexican-origin parents. First, though the current work suggests that mothers' Spanish language pressures disrupt maternal ethnic socialization, this finding did not extend to fathers. This replicates patterns seen in prior work documenting parents' gender differences in response to cultural stressors. For example, combined acculturative and enculturative stressors were associated with higher

parent-child conflict for fathers compared to mothers among U.S. Chinese-origin families (Hou et al., 2016). Acculturative stressors, however, were positively related to mothers' (not fathers') marital conflict among U.S. Chinese-origin families (Hou et al., 2016), and to mothers' (not fathers') depressive symptoms among U.S. Mexican-origin families (White et al., 2009). My finding extends this work and suggests that fathers may respond differently to Spanish language pressures than mothers, and that these enculturative stressors – and any resultant psychological distress – have different implications for fathers' parenting practices. Importantly, however, my research did not offer a direct statistical comparison between mothers' and fathers' findings. I tested hypothesized models separately with data on mothers and data on fathers. This allowed me to retain the largest and most diverse sample of U.S. Mexican-origin adolescents in the models tested with mother data, including adolescents from both single- and two-parent family contexts. It also permitted additional examination of paternal processes in the subsample of adolescents from two-parent families. It did not, however, provide statistical tests of maternal and paternal differences. Future work may consider a direct examination of such differences.

Substantially more work is needed to understand maternal and paternal differences in family stress processes generally (White et al., 2017), and in differences in responses to cultural stressors specifically. It may be important to consider documented gender differences in the causes and correlates of depression (Almeida & Kessler, 1998, Nolen-Hoeksema, 2001). Specifically, my measure of Spanish language pressures included many items related to intrapersonal relationships (e.g., "People have treated you rudely or unfairly because you do not speak Spanish well" and "You feel uncomfortable

being around people who only speak Spanish"), a domain of stress that may be more strongly related to female depression than to male depression (Nolen-Hoeksema, 2001). Alternatively, parental involvement and roles may work to differentiate the influence of enculturative stressors on mothers' and fathers' ethnic socialization. Prior work suggests that ethnic-racial minority and immigrant fathers' engagement with their youth tend to be different than mothers' engagement, such that fathers are more likely to engage in "rough-and-tumble' play, encourage risk-taking, and socialize gender roles (Cabrera, Birgit, & Leyendecker, 2017). Further, fathering roles in Latino families have traditionally included more of a focus on sanctioning and modeling forms of socialization, rather than verbal forms of socialization (Taylor & Behnke, 2005). My measure of ethnic socialization was predominantly composed of verbal approaches to cultural socialization, like telling youth about cultural traditions, values, beliefs, and ethnic group history. Thus, it may not have captured some of the gendered ways in which fathers engage in cultural socialization, which could include more *sanctioning* and *modeling* and less *telling* (Taylor & Behnke, 2005). It is possible that the family stress model describes variability in fathers' ethnic socialization when broader forms of socialization are captured. More work is needed in this area.

Other environmental stressors. For both mothers and fathers, acculturative stressors did not relate to their ethnic socialization practices. Prior research documenting the association between parents' exposures to cultural stressors and disrupted parenting or family functioning has concentrated on acculturative stressors alone (Hou et al., 2016; White et al., 2009), or on a combination of acculturative and enculturative stressors (Hou et al., 2016; Lorenzo-Blanco et al., 2016). Both of these approaches, however, do not

support examination of the simultaneous yet unique influences of acculturative versus enculturative stressors on parenting. My more fine-grained approach indicates that parents' experiences of acculturative stress due to English language pressures when their children were in the 5th grade do not predict lower levels of parental ethnic socialization in the 7th grade, controlling for parents' nativity, earlier levels of ethnic socialization, and exposure to other environmental stressors.

Similarly, parents' exposures to ecological stressors (i.e., economic hardship and neighborhood danger) were not associated with decreases in parental ethnic socialization. This finding generalized to mothers and fathers. Economic hardship and neighborhood danger are important stressors in the family stress model literature. Prior research across ethnically and racially diverse groups suggests that these ecological stressors have important implications for family cohesion (White et al., 2012) and for parenting behaviors, including discipline (Jocson & McLoyd, 2015), harsh parenting (Jocson & McLoyd, 2015; Neppl et al., 2016), and nurturing parenting (Simons et al., 2016). The current study findings, however, suggest that the effects of parents' exposures to ecological stressors when their children were in the 5th grade do not extend to their culturally salient parenting practice of ethnic socialization in the 7th grade, controlling for parents' nativity, earlier levels of ethnic socialization, and exposure to cultural stressors.

Culturally salient parenting practices, including ethnic socialization, are theorized to be part of ethnic-racial minority and immigrant families' adapting cultural systems of socialization and to have evolved from groups' collective histories and current environmental demands and affordances (Garcia Coll et al., 1996; James, Coard, Fine, & Rudy, 2018). Moreover, adaptive cultures can manifest as culturally defined parenting

responses to environmental stressors (White et al., 2015b). It may be that parents' exposures to these environmental stressors do not disrupt parental ethnic socialization practices, specifically, because these practices are central aspects of U.S. Mexican families' adapting cultural systems of socialization (Garcia Coll & Pachter, 2002; Knight et al., 1993; Rodriguez, Umaña-Taylor, Smith, & Johnson, 2009), which have evolved within the demands and affordances encountered as ethnic-racial minority and immigrant parents negotiate minoritized experiences relative to English-language competency pressures, economic hardships, and dangerous neighborhoods (Garcia Coll et al., 1996; White, Nair, & Bradley, 2018b). In addition, other aspects of these families' adaptive cultures, including values, roles, and traditions, may work as protecting mechanisms (Martin, Conger, & Robins, 2019; White et al., 2015b) and shield parents from experiencing ethnic socialization disruptions. Thus, it may be important to examine the influence of family environmental stressors *and* affordances on culturally salient parenting practices in future research. It is also important to consider that beneficial changes in these environmental stressors could have taken place between 5th grade and 7th grade that alleviated parents' psychological distress and mitigated the stress process.

My findings underscore the need to use culturally informed methods (White, Knight, & Roosa, 2015a) to elucidate the underlying family processes taking place among ethnic-racial minority and immigrant families. In addition, they highlight the importance of using contextual approaches that take into consideration the unique characteristics of the niches in which these families are functioning (Bronfenbrenner & Morris, 2006; Super & Harkness, 1986). Further, they illustrate the agency and resiliency of these families to adapt to commonly encountered environmental stressors in ways that

promote developmental competencies among their youth (García Coll et al., 1996; White et al., 2018b). Most importantly, however, they remind us of the transactional and culturally bounded nature of human development (Fuller & Garcia Coll, 2010).

Parental Ethnic Socialization and Adolescent Bicultural Competence

Though maternal ethnic socialization in the 7th grade predicted higher levels of adolescents' bicultural competence in the 12th grade, consistent with the mediated mechanism described above, this finding did not extend to fathers. Specifically, fathers' ethnic socialization was not associated with adolescent bicultural competence. Prior work highlights the influence of different family roles on the meanings and consequences of parents' socialization beliefs and practices for youth developmental competencies (White et al., 2018b). For example, among U.S. Mexican-origin families, fathers' ethnic socialization practices predicted adolescent heritage identity processes while mothers' engagement in the same practices predicted heritage identity attitudes (White, Knight, Jensen, & Gonzales, 2018a). Similarly, among U.S. Chinese-origin families, mothers', but not fathers', bicultural socialization beliefs, beliefs about the importance of learning about heritage and host cultures, predicted adolescent bicultural socialization beliefs (Kim & Hou, 2016). My findings also suggest that parental roles may qualify the association between parental ethnic socialization and adolescent bicultural competence. Particularly in relatively traditional U.S. Mexican-origin families, mothers may be more likely to be the primary cultural socializing agents for their youth (Knight et al., 2011), especially in the context of verbal socialization. Mothers' verbal socialization, therefore, may have a more direct influence on their adolescents' bicultural competence development. Further, fathers may engage in other types of cultural socialization

practices (Cabrera et al., 2017; Taylor & Behnke, 2005) to promote adolescents' bicultural competence. For instance, fathers may be more likely to take their children to cultural events (e.g., soccer game) and model or sanction culturally relevant behaviors (Taylor & Behnke, 2005). It may be important, therefore, to examine the influence of different types of parental cultural socialization practices, and of additional, gendered parental affordances and demands (White, Liu, Gonzales, Knight, & Tein, 2016), on the development of adolescent bicultural competence.

Adolescent Gender and Nativity Differences

Contrary to hypotheses 2 and 3, there were no adolescent gender or nativity differences on the influence of parents' exposures to cultural and ecological stressors on adolescents' bicultural competence via parental ethnic socialization. Prior work has documented gender and nativity differences in parenting behaviors, including ethnic socialization, among Latino families. For instance, U.S. Mexican-origin parents with strong attachment to the Mexican culture tended to be more protective of girls than of boys (Domènech Rodriguez et al., 2009; McHale et al., 2005) and U.S. Latino parents' ethnic socialization decreased as youths' generational statuses increased (the more family generations that are born in the U.S.; Huynh & Fuligni, 2008; Umaña-Taylor et al., 2009). My findings, however, suggest that parental ethnic socialization has the same implications for adolescent bicultural competence regardless of adolescent gender and nativity. These findings are consistent with work on indicators of adolescent biculturalism suggesting no gender differences on the positive association between parental cultural orientations and adolescent bicultural socialization beliefs (Kim & Hou, 2016), and no nativity differences on the positive associations between parental cultural

socialization and adolescent host culture and heritage culture orientations (Gartner et al., 2014). Overall, parental ethnic socialization practices appear to relate to adolescents' biculturalism in similar ways across adolescent nativity and gender groups.

Limitations and Future Directions

There were some limitations. Prior work has suggested that the current study's sample is representative of the population from which it was drawn (Roosa et al., 2008); however, it is a predominantly first generation immigrant parent sample. Increasing the number of immigrants from subsequent generations might provide additional insights on the unique implications of parents' exposures to enculturative versus acculturative stressors for adolescent bicultural competence development. The current study examined the language dimension of enculturative and acculturative stress (Rodriguez et al., 2002). Language is an important source of acculturative or enculturative stress (Luna et al., 2008; Mori, 2000). Including additional dimensions (e.g., pressure to acculturate and pressure against acculturation), however, might provide a more comprehensive picture of the influence of parents' exposures to cultural stressors on adolescent bicultural competence.

Additional considerations should guide future work on cultural socialization. For example, my measure of ethnic socialization primarily assessed verbal cultural socialization, rather than behavioral cultural socialization. The examination of different ways in which ethnic-racial minority and immigrant parents socialize their youth vis-à-vis the heritage culture is greatly needed (Knight et al., 2011). Additionally, many ethnic-racial and immigrant parents have the goal to rear children who are bicultural (e.g., learn norms that reflect both ethnic-racial or heritage and mainstream or host cultures) so they

can live effectively within the two cultural systems (Aldoney & Cabrera, 2016; Kim & Hou, 2016; Tam & Chan, 2015). Including, therefore, a measure of parents' ethnic socialization *and* a measure of parents' mainstream socialization might provide a better representation of the different types of culturally salient parenting practices in which these parents engage to promote youth bicultural competence development. In addition, it is possible that parental mainstream socialization mediates the link between parents' exposures to English language pressures and adolescents' bicultural competence.

Last, the family stress model highlights psychological distress as a key intervening mechanism between environmental stressors and disrupted parenting (Conger et al., 2010). Though prior work has already established a link between environmental stressors and parental depression (Conger et al., 2002; Elder et al., 1995; Hill & Herman-Stahl, 2002; White et al., 2009; Zeiders et al., 2015), this study did not include psychological distress in the mediational mechanism. Future work, may want to examine if parental psychological distress can explain associations between parents' exposures to environmental stressors and parents' ethnic socialization practices to shed light on additional intervening mechanisms.

Conclusions

The current study highlights the utility of the family stress model for research on bicultural competence development and offers important cultural extensions. Findings suggest that parents' high exposure to ecological stressors do not compromise parental ethnic socialization or adolescent bicultural competence development. On the other hand, mothers' exposures to enculturative stressors can disrupt maternal ethnic socialization, and in turn, undermine adolescents' bicultural competence. These findings highlight the

importance of examining the influence of multiple family environmental stressors and different family roles on adolescent bicultural competence development. Additionally, they indicate the need for further cultural-adaptations to the family stress model – especially the inclusion of mainstream socialization – to inform the association between parental acculturative stressors and adolescent bicultural competence. By examining the influence of multiple family environmental stressors on culturally salient parenting practices, and their implications for adolescent bicultural competence development, this work provides insights on ethnic-racial minority and immigrant families' adapting cultures, and advances scholarship on the family stress model and on the transactional nature of human development.

Dissertation Conclusions

This work bridges important gaps in the body of biculturalism literature by relying on a culturally informed developmental and contextual perspective. Together these studies capture important features of ethnic-racial minority and immigrant families' adapting cultures and advance scientific knowledge regarding the mechanisms via which the family context might influence the development of bicultural competence. Specifically, these studies recognize that ethnic-racial minority and immigrant parents (1) undergo dual-cultural adaptation, or adapt to living within the ethnic-racial or heritage culture (enculturation) and the mainstream or host culture (acculturation); (2) might be exposed to cultural stressors associated with the processes involved in dual-cultural adaptation and to other environmental stressors that tend to co-occur with these, and (3) engage in culturally salient parenting practices to teach their youth about the ethnic-racial or heritage culture (i.e., ethnic socialization; Garcia Coll & Pachter, 2002). These unique

characteristics of ethnic-racial minority and immigrant families' adapting cultures might present shifting demands and affordances specific to the heritage and the host cultures that can influence the development of adolescents' bicultural competence (Berry et al., 2006; Ward & Geeraert, 2016).

Findings from these studies suggest that both promoting characteristics (i.e., parents' adaptation to host culture) and inhibiting characteristics (i.e., parental exposure to cultural stressors linked to dual-cultural adaptation) found among ethnic-racial minority and immigrant families can simultaneously work to influence the development of adolescents' bicultural competence (Garcia Coll et al., 1996). In study 1, findings indicate that *parallel* parental enculturation and acculturation trajectories influence adolescent bicultural competence. Specifically, they suggest that parental acculturation can promote adolescents' bicultural competence whereas very high levels of parental enculturation can undermine adolescents' bicultural competence. In study 2, findings suggest that parents' high exposure to ecological stressors (i.e., economic hardship, neighborhood danger) do not compromise parental ethnic socialization or adolescent bicultural competence development. On the other hand, mothers' exposures to cultural stressors (i.e., enculturative stressors) can disrupt maternal ethnic socialization, and in turn, undermine adolescents' bicultural competence.

Notably, parents' enculturation and acculturation processes and mothers' exposures to cultural stressors associated with the process of enculturation have important implications for the development of adolescent bicultural competence. These findings highlight the central role of the family context and underscore the need to use culturally informed methods (White et al., 2015a) to elucidate the underlying family

processes contributing to adolescent bicultural competence development. In addition, they highlight the importance of using contextual approaches that take into consideration the unique characteristics of the niches in which ethnic-racial minority and immigrant families are functioning (Bronfenbrenner & Morris, 2006; Super & Harkness, 1986). Further, they illustrate the agency and resiliency of these families to adapt to commonly encountered environmental stressors in ways that promote developmental competencies among their youth (García Coll et al., 1996; White et al., 2018b). Most importantly, however, they remind us of the transactional and culturally bounded nature of human development (Fuller & Garcia Coll, 2010).

References

Acock, A. C. (2005). Working with missing values. *Journal of Marriage and Family, 67*(4),1012–1028. doi:10.1111/j.1741-3737.2005.00191.x

Aldoney, D., & Cabrera, N. J. (2016). Raising American citizens: socialization goals of low-income immigrant Latino mothers and fathers of young children. *Journal of Child and Family Studies, 25*(12), 3607-3618. doi:10.1007/s10826-016-0510-x

Almeida, D. M., & Kessler, R. C. (1998). Everyday stressors and gender differences in daily distress. *Journal of Personality and Social Psychology, 75*(3), 670. doi:10.1037/0022-3514.75.3.670

Arnett, J. J. (2014). *Adolescence and emerging adulthood*. Boston, MA: Pearson.

Barrera, M., Jr., Caples, H., & Tein, J.-Y. (2001). The psychological sense of economic hardship: Measurement models, validity, and cross-ethnic equivalence for urban families. *American Journal of Community Psychology, 29*, 493–517. doi:10.1023/A:1010328115110

Basilio, C. D., Knight, G. P., O'Donnell, M., Roosa, M. W., Gonzales, N. A., Umaña-Taylor, A. J., & Torres, M. (2014). The Mexican American Biculturalism Scale: Bicultural comfort, facility, and advantages for adolescents and adults. *Psychological Assessment, 26*(2), 539-554. doi:10.1037/a0035951

Benet-Martinez, V., & Haritatos, J. (2005). Bicultural identity integration (BII): Components and psychosocial antecedents. *Journal of Personality, 73*(4), 1015-1050. doi:10.1111/j.1467-6494.2005.00337.x

Benet-Martinez, V., Leu, J., Lee, F., & Morris, M. (2002). Negotiating biculturalism: Cultural frame switching in bicultural individuals with oppositional versus compatible cultural identities. *Journal of Cross Cultural Psychology, 33*, *492*-516. doi:10.1177/0022022102033005005

Berry, J. W. (1974). Psychological Aspects of Cultural Pluralism: Unity and Identity Reconsidered. Topics in Culture Learning, 2, 17-22.

Berry, J. W., Kim, U., Minde, T., & Mok, D. (1987). Comparative studies of acculturative stress. *International Migration Review, 21*(3),491-511. doi:10.2307/2546607

Berry, J. W., Phinney, J. S., Sam, D. L., & Vedder, P. (2006). Immigrant youth: Acculturation, identity, and adaptation. *Applied Psychology, 55*(3), 303–332. doi:10.1111/j.1464-0597.2006.00256.x

Bollen, K. A., & Curran, P. J. (2006). *Latent curve models: A structural equation perspective*. Hoboken, NJ: Wiley. doi:10.1002/0471746096

Bornstein, M. H. (2017). The specificity principle in acculturation science. Perspectives on *Psychological Science, 12*(1), 3-45. doi:10.1177/1745691616655997

Bornstein, M. H., & Cote, L. R. (2006). *Acculturation and parent-child relationships: Measurement and development.* Lawrence Erlbaum Associates Publishers.

Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. In R. M. Lerner(Ed.), *Theoretical models of human development. Handbook of child psychology* (Vol. 1, 6th ed., pp. 793–828). Hoboken, NJ: Wiley

Carlo, G., Basilio, C. D., & Knight, G. P. (2016). The associations of biculturalism to prosocial tendencies and positive self evaluations. *Journal of Latina/o Psychology*, *4*(4), 189. doi:10.1037/lat0000058

Cabrera, N. J., & Leyendecker, B. (Eds.). (2017). *Handbook on positive development of minority children and youth*. New York, NY: Springer. doi:10.1007/978-3-319-43645-6

Carrera, S. G., & Wei, M. (2014). Bicultural competence, acculturative family distancing, and future depression in Latino/a college students: a moderated mediation model. *Journal of Counseling Psychology*, *61*(3), 427-436. doi:10.1037/cou0000023

Cole, D. A., & Maxwell, S. E. (2003). Testing mediational models with longitudinal data: questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology*, *112*(4), 558. doi:10.1037/0021-843X.112.4.558

Conger, R. D., Conger, K. J., & Martin, M. J. (2010). Socioeconomic status, family processes, and individual development. *Journal of Marriage and Family, 72*, 685–704. doi:10.1111/j.1741-3737.2010.00725.x

Conger, R. D., Wallace, L. E., Sun, Y., Simons, R. L., McLoyd, V. C., & Brody, G. H. (2002). Economic pressure in African American families: A replication and extension of the family stress model. *Developmental Psychology,* 38, 179 –193. doi:10.1037/0012-1649.38.2.179

Cruz, R. A., King, K. M., Cauce, A. M., Conger, R. D., & Robins, R. W. (2017). Cultural orientation trajectories and substance use: Findings from a longitudinal study of Mexican-origin youth. *Child Development*, *88*(2), 555-572. doi:10.1111/cdev.12586

David, E. J. R., Okazaki, S., & Saw, A. (2009). Bicultural self-efficacy among college students: Initial scale development and mental health correlates. *Journal of Counseling Psychology*, *56*(2), 211-226. doi:10.1037/a0015419

De Houwer, A. (2007). Parental language input patterns and children's bilingual use. *Applied Psycholinguistics*, *28*(3), 411-424. doi:10.1017.S0142716407070221

Delgado, M. Y., Updegraff, K. A., Roosa, M. W., & Umaña-Taylor, A. J. (2011). Discrimination and Mexican-origin adolescents' adjustment: The moderating roles of adolescents', mothers', and fathers' cultural orientations and values. *Journal of Youth and Adolescence*, *40*(2), 125-139. doi: 10.1007/s10964-009-9467-z

Domènech Rodriguez, M. M., Donovick, M. R., & Crowley, S. L. (2009). Parenting styles in a cultural context: Observations of "protective parenting" in first-generation Latinos. *Family Process*, *48*(2), 195-210. doi:10.1111/j.1545-5300.2009.01277.x

Doucerain, M. M., Deschênes, S. S., Aubé, K., Ryder, A. G., & Gouin, J. P. (2016). Respiratory sinus arrhythmia is prospectively associated with early trajectories of acculturation among new international students. *Journal of Cross-Cultural Psychology*, *47*(3), 421-440. doi:10.1177/0022022115624015

Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., & Mac Iver, D. (1993). Development during adolescence: The impact of stage-environment fit on young adolescents' experiences in schools and in families. *American Psychologist*, *48*(2), 90-111. doi:10.1037/0003-066X.48.2.90

Elder Jr, G. H., Eccles, J. S., Ardelt, M., & Lord, S. (1995). Inner-city parents under economic pressure: Perspectives on the strategies of parenting. *Journal of Marriage and the Family*, 771-784. doi:10.2307/353931

Enders, C. K. (2010). *Applied missing data analysis*. Guilford Press.

Enders, C. K. (2013). Dealing with missing data in developmental research. *Child Development Perspectives*, *7*(1), 27-31. doi:10.1111/cdep.12008

Fuller, B., & García Coll, C. (2010). Learning from Latinos: contexts, families, and child development in motion. *Developmental Psychology*, *46*(3), 559. doi:10.1037/a0019412

Garcıa Coll, C., Lamberty, G., Jenkins, R., McAdoo, H. P., Crnic, K., Wasik, B. H., & Vázquez Garcıa, H. (1996). An integrative model for the study of developmental competencies in minority children. *Child Development*, *67*(5), 1891-1914. doi:10.1111/j.1467-8624.1996.tb01834.x

Garcia Coll, C., & Pachter, L. M. (2002). Ethnic and minority parenting. In M. Bornstein (Ed.), *Handbook of parenting: Vol. 4. Social conditioning and applied parenting* (2nd ed., pp. 1–20). Mahwah, NJ: Erlbaum.

Gartner, M., Kiang, L., & Supple, A. (2014). Prospective links between ethnic socialization, ethnic and American identity, and well-being among Asian-American

adolescents. *Journal of Youth and Adolescence*, *43*(10), 1715-1727. doi:10.1007/s10964-013-0044-0

Gil, A. G., Vega, W. A., & Dimas, J. M. (1994). Acculturative stress and personal adjustment among Hispanic adolescent boys. *Journal of Community psychology*, *22*(1), 43-54. doi:10.1002/1520-6629(199401)22:1<43::AID-JCOP2290220106>3.0.CO;2-T

Gonzales, N. A., Germán, M., & Fabrett, F. C. (2012). US Latino youth. In Handbook of race and development in mental health (pp. 259-278). Springer, New York, NY. doi:10.1007/978-1-4614-0424-8

Gonzales, N. A., Knight, G. P., Gunn, H. J., Tein, J. Y., Tanaka, R., & White, R. M. (2018). Intergenerational gaps in Mexican American values trajectories: Associations with parent–adolescent conflict and adolescent psychopathology. *Development and Psychopathology*, 30(5), 1611-1627. doi:10.1017/S0954579418001256

Gonzales, N. A., Knight, G. P., Morgan-Lopez, A. A., Saenz, D., & Sirolli, A. (2002). Acculturation and the mental health of Latino youths: An integration and critique of the literature. *Latino children and families in the United States: Current research and future directions*, 45-74.

Hill, N. E., & Herman-Stahl, M. A. (2002). Neighborhood safety and social involvement: Associations with parenting behaviors and depressive symptoms among African-American and Euro-American mothers. *Journal of Family Psychology*, *16*(2), 209. doi:10.1037//0893-3200.16.2.209

Hong, Y. Y., Morris, M. W., Chiu, C. Y., & Benet-Martinez, V. (2000). Multicultural minds: A dynamic constructivist approach to culture and cognition. *American Psychologist*, *55*(7), 709-720. doi:10.1037/0003-066X.55.7.709

Hou, Y., Kim, S. Y., & Wang, Y. (2016). Parental acculturative stressors and adolescent adjustment through interparental and parent–child relationships in Chinese American families. *Journal of Youth and Adolescence*, *45*(7), 1466-1481. doi:10.1007/s10964-016-0441-2

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1-55. doi:10.1080/10705519909540118

Hughes, D., Rodriguez, J., Smith, E. P., Johnson, D. J., Stevenson, H. C., & Spicer, P. (2006). Parents' ethnic-racial socialization practices: A review of research and directions for future study. *Developmental Psychology*, *42*(5), 747. doi:10.1037/0012-1649.42.5.747

Huynh, Q. L. (2009). Variations in biculturalism: Measurement, validity, mental and physical health correlates, and group differences (Doctoral dissertation). Retrieved from

UC Riverside Electronic Theses and Dissertations.
https://escholarship.org/uc/item/0369z2bh

Huynh, V. W., & Fuligni, A. J. (2008). Ethnic socialization and the academic adjustment of adolescents from Mexican, Chinese, and European backgrounds. *Developmental Psychology*, *44*(4), 1202. doi:10.1037/0012-1649.44.4.1202

IBM Corp. (2016). IBM SPSS Statistics (Version 24.0) [Macintosh]. Armonk, NY: IBM Corp.

James, A. G., Coard, S. I., Fine, M. A., & Rudy, D. (2018). The central roles of race and racism in reframing family systems theory: A consideration of choice and time. *Journal of Family Theory & Review*, *10*(2), 419-433. doi:10.1111/jftr.12262

Jocson, R. M., & McLoyd, V. C. (2015). Neighborhood and Housing Disorder, Parenting, and Youth Adjustment in Low-Income Urban Families. *American Journal of Community Psychology*, *55*(3-4), 304-313. doi:10.1007/s10464-015-9710-6

Keller, H. (2003). Socialization for competence: Cultural models of infancy. *Human Development, 46,* 288–311. doi:10.1159/000071937

Kim, S. Y., & Hou, Y. (2016). Intergenerational Transmission of Tridimensional Cultural Orientations in Chinese American Families: The Role of Bicultural Socialization. *Journal of Youth and Adolescence*, *45*(7), 1452-1465. doi:10.1007/s10964-016-0423-4

Kim, S. Y., Nair, R., Knight, G. P., Roosa, M. W., & Updegraff, K. A. (2009). Measurement equivalence of neighborhood quality measures for European American and Mexican American families. *Journal of Community Psychology,* 37, 1–20. doi:10.1002/jcop.20257

Kim, S. Y., Shen, Y., Huang, X., Wang, Y., & Orozco-Lapray, D. (2014). Chinese American parents' acculturation and enculturation, bicultural management difficulty, depressive symptoms, and parenting. *Asian American Journal of Psychology*, *5*(4), 298. doi:10.1037/a0035929

Klein, A., & Moosbrugger, H. (2000). Maximum likelihood estimation of latent interaction effects with the LMS method. *Psychometrika*, *65*(4), 457-474.

Knight, G. P., Basilio, C. D., Cham, H., Gonzales, N. A., Liu, Y., & Umaña-Taylor, A. J. (2014). Trajectories of Mexican American and mainstream cultural values among Mexican American adolescents. *Journal of Youth and Adolescence*, *43*(12), 2012-2027. doi:10.1007/s10964-013-9983-8

Knight, G. P., Berkel, C., Umaña-Taylor, A. J., Gonzales, N. A., Ettekal, I., Jaconis, M., & Boyd, B. M. (2011). The familial socialization of culturally related values in Mexican

American families. *Journal of Marriage and Family*, *73*(5), 913-925. doi:10.1111/j.1741-3737.2011.00856.x

Knight, G. P., Bernal, M. E., Garza, C. A., Cota, M. K., & Ocampo, K. A. (1993). Family socialization and the ethnic identity of Mexican-American children. *Journal of Cross-Cultural Psychology*, *24*(1), 99-114. doi:10.1177/0022022193241007

Knight, G. P., Carlo, G., Mahrer, N. E., & Davis, A. N. (2016). The socialization of culturally related values and prosocial tendencies among Mexican-American Adolescents. *Child Development*, *87*(6), 1758-1771. doi:10.1111/cdev.12634

Knight, G. P., Gonzales, N. A., Saenz, D. S., Bonds, D. D., German, M., Deardorff, J., . . . Updegraff, K. A. (2010). The Mexican American Cultural Values Scale for adolescents and adults. *The Journal of Early Adolescence*, *30*, 444–481. doi:10.1177/0272431609338178

Knight, G. P., Safa, M. D., & White, R. M. (2018). Advancing the assessment of cultural orientation: A developmental and contextual framework of multiple psychological dimensions and social identities. *Development and Psychopathology*, 30(5), 1867-1888. doi:10.1017/S095457941800113X

Knight, G. P., Vargas-Chanes, D., Losoya, S. H., Cota-Robles, S., Chassin, L., & Lee, J. M. (2009). Acculturation and enculturation trajectories among Mexican-American adolescent offenders. *Journal of Research on Adolescence*, *19*, 625–653. doi:10.1111/j.1532-7795.2009.00614.x

LaFromboise, T., Coleman, H. L., & Gerton, J. (1993). Psychological impact of biculturalism: evidence and theory. *Psychological Bulletin*, *114*(3), 395-412. doi:10.1037/0033-2909.114.3.395

Lau, A. S. (2010). Physical discipline in Chinese American immigrant families: An adaptive culture perspective. *Cultural Diversity and Ethnic Minority Psychology*, *16*(3), 313. doi:10.1037/a0018667

Leidy, M. S., Parke, R. D., Cladis, M., Coltrane, S., & Duffy, S. (2009). Positive marital quality, acculturative stress, and child outcomes among Mexican Americans. *Journal of Marriage and Family*, *71*(4), 833-847. doi:10.1111/j.1741-3737.2009.00638.x

Leventhal, T., Dupéré, V., & Brooks-Gunn, J. (2009). Neighborhood influences on adolescent development. In R. Lerner & L. Steinberg (Eds.), Contextual influences on adolescent development. *Handbook of adolescent psychology* (Vol. 2, pp. 411–443). Hoboken, NJ: Wiley. doi:10.1002/9780470479193.adlpsy00

Lorenzo-Blanco, E. I., Meca, A., Unger, J. B., Romero, A., Gonzales-Backen, M., Piña-Watson, B., ... & Villamar, J. A. (2016). Latino parent acculturation stress: Longitudinal

effects on family functioning and youth emotional and behavioral health. *Journal of Family Psychology, 30*(8), 966. doi:10.1037/fam0000223

Luna, D., Ringberg, T., & Peracchio, L. A. (2008). One individual, two identities: Frame switching among biculturals. *Journal of Consumer Research, 35*(2), 279-293. doi:10.1086/586914

MacKinnon, D. P. (2008). *Introduction to statistical mediation analysis*. Routledge.

Martin, M. J., Conger, R. D., & Robins, R. W. (2019). Family stress processes and drug and alcohol use by Mexican American adolescents. *Developmental Psychology, 55*(1), 170. doi: 10.1037/dev0000629

Marks, A. K., Patton, F., & Coll, C. G. (2011). Being bicultural: A mixed-methods study of adolescents' implicitly and explicitly measured multiethnic identities. *Developmental Psychology, 47*(1), 270. doi:10.1037/a0020730

Marsh, H. W., Wen, Z., Hau, K. T., & Nagengast, B. (2006). Structural equation models of latent interaction and quadratic effects. *Structural Equation Modeling: A Second Course*, 225-265.

Masarik, A. S., & Conger, R. D. (2017). Stress and child development: A review of the Family Stress Model. *Current Opinion in Psychology, 13*, 85-90. doi:10.1016/j.copsyc.2016.05.008

Maslowsky, J., Jager, J., & Hemken, D. (2014). Estimating and interpreting latent variable interactions: A tutorial for applying the latent moderated structural equations method. *International Journal of Behavioral Development, 39*(1), 87-96. doi:10.1177/0165025414552301

Masten, A. S., & Obradović, J. (2006). Competence and resilience in development. *Annals of the New York Academy of Sciences*, 1094(1), 13-27.

McHale, S. M., Updegraff, K. A., Shanahan, L., Crouter, A. C., & Killoren, S. E. (2005). Siblings' differential treatment in Mexican American families. *Journal of Marriage and Family, 67*(5), 1259-1274. doi:10.1111/j.1741-3737.2005.00215.x

Migration Policy Institute. (2016). *Frequently Requested Statistics on Immigrants and Immigration in the United States.* Retrieved from http://www.migrationpolicy.org/article/frequently-requested-statistics-immigrants-and-immigration-united-states

Mori, S. C. (2000). Addressing the mental health concerns of international students. *Journal of Counseling & Development, 78*(2), 137-144. doi:10.1002/j.1556-6676.2000.tb02571.x

Motti-Stefanidi, F. (2018). Resilience among immigrant youth: The role of culture, development and acculturation. *Developmental Review*. doi:10.1016/j.dr.2018.04.002

Motti-Stefanidi, F., Berry, J., Chryssochoou, X., Sam, D. L., & Phinney, J. (2012). Positive immigrant youth adaptation in context: Developmental, acculturation, and social-psychological perspectives. In *Capitalizing on Migration: The Potential of Immigrant Youth* (pp. 117-158). Cambridge University Press.

Motti-Stefanidi, F., Pavlopoulos, V., & Asendorpf, J. B. (2018). Immigrant youth acculturation and perceived discrimination: Longitudinal mediation by immigrant peers' acceptance/rejection. *Journal of Applied Developmental Psychology*. doi:0.1016/j.appdev.2018.03.001

Muthén, L. K., & Muthén, B. O. (2010). *Mplus User's Guide: Statistical Analysis with Latent Variables: User's Guide*. Muthén & Muthén

Neppl, T. K., Senia, J. M., & Donnellan, M. B. (2016). Effects of economic hardship: Testing the family stress model over time. *Journal of Family Psychology, 30*(1), 12. doi:10.1037/fam0000168

Nguyen, A. M. D., & Benet-Martínez, V. (2007). Biculturalism unpacked: Components, measurement, individual differences, and outcomes. *Social and Personality Psychology Compass, 1*(1), 101-114 doi:10.1111/j.1751-9004.2007.00029.x

Nguyen, A. M. D., & Benet-Martínez, V. (2013). Biculturalism and adjustment: A meta-analysis. *Journal of Cross-Cultural Psychology, 44*(1), 122-159. doi:10.1177/0022022111435097

Nolen-Hoeksema, S. (2001). Gender differences in depression. *Current Directions in Psychological Science, 10*(5), 173-176. doi: 10.1111/1467-8721.00142

Oppedal, B. (2006). Development and acculturation. In D.L. Sam & J.W. Berry (Eds.), *The Cambridge handbook of acculturation psychology* (pp. 97-112). Cambridge, United Kingdom: Cambridge University Press.

Palacios, J., & Moreno, M. C. (1996). Parents' and adolescents' ideas on children: Origins and transmission of intracultural diversity. In S. Harkness & C. M. Super (Eds.), *Parents' cultural belief systems: Their origins, expressions, and consequences* (pp. 254-269). New York: Guilford Press.

Preacher, K. J., Wichman, A. L., MacCallum, R. C., & Briggs, N. E. (2008). *Latent growth curve modeling.* Thousand Oaks, CA: Sage Publications, Inc. doi:10.4135/9781412984737

Raffaelli, M., & Ontai, L. L. (2004). Gender socialization in Latino/a families: Results from two retrospective studies. *Sex Roles*, *50*(5-6), 287-299. doi:10.1023/B:SERS.0000018886.58945.06

Roche, K. M., Ghazarian, S. R., & Fernandez-Esquer, M. E. (2012). Unpacking acculturation: Cultural orientations and educational attainment among Mexican-origin youth. *Journal of Youth and Adolescence*, *41*(7), 920-931. doi:10.1007/s10964-011-9725-8

Rodriguez, N., Mira, C. B., Paez, N. D., & Myers, H. F. (2007). Exploring the complexities of familism and acculturation: Central constructs for people of Mexican origin. *American Journal of Community Psychology*, *39*(1-2), 61-77. doi:10.1007/s10464-007-9090-7

Rodriguez, N., Myers, H. F., Mira, C. B., Flores, T., & Garcia-Hernandez, L. (2002). Development of the Multidimensional Acculturative Stress Inventory for adults of Mexican origin. *Psychological Assessment*, *14*(4), 451. doi:10.1037/1040-3590.14.4.451

Rodriguez, J., Umana-Taylor, A., Smith, E. P., & Johnson, D. J. (2009). Cultural processes in parenting and youth outcomes: Examining a model of racial-ethnic socialization and identity in diverse populations. *Cultural Diversity and Ethnic Minority Psychology*, *15*(2), 106. doi:10.1037/a0015510

Romero, A. J., Cuéllar, I., & Roberts, R. E. (2000). Ethnocultural variables and attitudes toward cultural socialization of children. *Journal of Community Psychology*, 28(1), 79-89.

Roosa, M. W., Deng, S., Ryu, E., Lockhart Burrell, G., Tein, J. Y., Jones, S., ... & Crowder, S. (2005). Family and child characteristics linking neighborhood context and child externalizing behavior. *Journal of Marriage and Family*, *67*(2), 515-529. doi:10.1111/j.0022-2445.2005.00132.x

Roosa, M. W., Liu, F. F., Torres, M., Gonzales, N. A., Knight, G. P., & Saenz, D. (2008). Sampling and recruitment in studies of cultural influences on adjustment: a case study with Mexican Americans. *Journal of Family Psychology*, *22*(2), 293. doi:10.1037/0893-3200.22.2.293

Safa, M. D. & White, R. M. B. (Unpublished manuscript). Biculturalism beyond dual-cultural orientations among Latinos in the U.S.: Conceptual, developmental, and theoretical implications.

Safa, M. D., White, R. M. B., & Knight, G. P. (Unpublished manuscript). Family contextual effect on bicultural competence development among U.S. Mexican-origin adolescents.

Safa, M. D., White, R. M. B., Mahrer, N. E., Knight, G. P., Gonzales, N. A., & Pasco M.C. (2018). U.S. Mexican-origin adolescents' bicultural competence and mental health in context. *Cultural Diversity and Ethnic Minority Psychology.* doi:10.1037/cdp0000231

Sam, D. L., & Berry, J. W. (Eds.). (2006). *The Cambridge handbook of acculturation psychology*. Cambridge University Press. doi:10.1017/CBO9781316219218

Satorra, A. (2000). Scaled and adjusted restricted tests in multi-sample analysis of moment structures. In *Innovations in multivariate statistical analysis* (pp. 233-247). Springer, Boston, MA.

Schwartz, S. J., Des Rosiers, S., Huang, S., Zamboanga, B. L., Unger, J. B., Knight, G. P., ... & Szapocznik, J. (2013). Developmental trajectories of acculturation in Hispanic adolescents: Associations with family functioning and adolescent risk behavior. *Child Development, 84*(4), 1355-1372. doi:10.1111/cdev.12047

Schwartz, S. J., & Unger, J. B. (2010). Biculturalism and context: What is biculturalism, and when is it adaptive?. *Human Development, 53*(1), 26-32. doi:10.1159/000268137

Schwartz, S. J., Unger, J. B., Zamboanga, B. L., Córdova, D., Mason, C. A., Huang, S., ... & Villamar, J. A. (2015). Developmental trajectories of acculturation: Links with family functioning and mental health in recent-immigrant Hispanic adolescents. *Child Development, 86*(3), 726-748. doi:10.1111/cdev.12341

Schwartz, S. J., Unger, J. B., Zamboanga, B. L., & Szapocznik, J. (2010). Rethinking the concept of acculturation: implications for theory and research. *American Psychologist, 65*(4), 237. doi:10.1037/a0019330

Schwartz, S. J., & Zamboanga, B. L. (2008). Testing Berry's model of acculturation: A confirmatory latent class approach. *Cultural Diversity and Ethnic Minority Psychology*, 14(4), 275. doi:10.1037/a0012818

Selig, J. P., & Preacher, K. J. (2009). Mediation models for longitudinal data in developmental research. *Research in Human Development, 6*(2-3), 144-164. doi:10.1080/15427600902911247

Simons, L. G., Wickrama, K. A. S., Lee, T. K., Landers-Potts, M., Cutrona, C., & Conger, R. D. (2016). Testing family stress and family investment explanations for conduct problems among African American adolescents. *Journal of Marriage and Family, 78*(2), 498-515. doi:10.1111/jomf.12278

South, S. J., Crowder, K., & Chavez, E. (2005). Exiting and entering high-poverty neighborhoods: Latinos, Blacks and Anglos compared. *Social Forces, 84*, 873–900. doi:10.1353/sof.2006.0037

Steiger, J. H. (1998). A note on multiple sample extensions of the RMSEA fit index.

Steinberg, L. D. (2008). *Adolescence* (8th ed.). New York, NY: McGraw-Hill.

Super, C. M., & Harkness, S. (1986). The developmental niche: A conceptualization at the interface of child and culture. *International Journal of Behavioral Development, 9*(4), 545-569. doi:10.1177/016502548600900409

Tadmor, C. T., Galinsky, A. D., & Maddux, W. W. (2012). Getting the most out of living abroad: biculturalism and integrative complexity as key drivers of creative and professional success. *Journal of Personality and Social Psychology*, *103*(3) 520-542. doi:10.1037/a0029360

Tadmor, C. T., & Tetlock, P. E. (2006). Biculturalism: A model of the effects of second-culture exposure on acculturation and integrative complexity. *Journal of Cross-Cultural Psychology, 37*(2), 173-190. doi:10.1177/0022022105284495

Tajfel, H. & Turner, J. C. (1986). The social identity theory of intergroup behavior. In S. Worchel & W. G. Austin (Eds.), *Psychology of Intergroup Relations* (pp. 7-24). Chicago: Nelson-Hall.

Tam, K. P., & Chan, H. W. (2015). Parents as cultural middlemen: The role of perceived norms in value socialization by ethnic minority parents. *Journal of Cross-Cultural Psychology, 46*(4), 489-507. doi:10.1177/0022022115575739

Taylor, B. A., & Behnke, A. (2005). Fathering across the border: Latino fathers in Mexico and the US. *Fathering, 3*(2), 99-121.

Telzer, E. H., Yuen, C., Gonzales, N., & Fuligni, A. J. (2016). Filling gaps in the acculturation gap-distress model: Heritage cultural maintenance and adjustment in Mexican–American families. *Journal of Youth and Adolescence*, 45(7), 1412-1425. doi:10.1007/s10964-015-0408-8

Titzmann, P. F., & Lee, R. M. (2018). Adaptation of Young Immigrants. *European Psychologist*. *23*(1),72-82. doi:10.1027/1016-9040/a000313

Tofighi, D., & MacKinnon, D. P. (2011). RMediation: An R package for mediation analysis confidence intervals. *Behavior Research Methods, 43*(3), 692-700. doi:10.3758/s13428-011-0076-x

Torres, L., Driscoll, M. W., & Voel, M. (2012). Discrimination, acculturation, acculturative stress, and Latino psychological distress: A moderated mediational model. *Cultural Diversity and Ethic Minority Psychology, 19*(1), 17–25. doi:10.1037/a0026710

Umaña-Taylor, A. J., Alfaro, E. C., Bámaca, M. Y., & Guimond, A. B. (2009). The

central role of familial ethnic socialization in Latino adolescents' cultural orientation. *Journal of Marriage and Family*, *71*(1), 46-60. doi:10.1111/j.1741-3737.2008.00579.x

Umaña-Taylor, A. J., & Guimond, A. B. (2012). A longitudinal examination of parenting behaviors and perceived discrimination predicting Latino adolescents' ethnic identity. *Developmental Psychology*, *46*(3), 636-650. doi:10.1037/a0019376

Umaña-Taylor, A. J., Quintana, S. M., Lee, R. M., Cross, W. E., Rivas-Drake, D., Schwartz, S. J., ... & Seaton, E. (2014). Ethnic and racial identity during adolescence and into young adulthood: An integrated conceptualization. *Child Development*, *85*(1), 21-39. doi:10.1111/cdev.12196

Umaña-Taylor, A. J., & Updegraff, K. A. (2007). Latino adolescents' mental health: Exploring the interrelations among discrimination, ethnic identity, cultural orientation, self-esteem, and depressive symptoms. *Journal of Adolescence*, *30*(4), 549-567. doi:10.1016/j.adolescence.2006.08.002

Umaña-Taylor, A. J., Zeiders, K. H., & Updegraff, K. A. (2013). Family ethnic socialization and ethnic identity: A family-driven, youth-driven, or reciprocal process?. *Journal of Family Psychology*, *27*(1), 137. doi:10.1037/a0031105

U.S. Census Bureau. (2011) *American community survey 2006-2010 five year summary files*. Washington, DC: Author

von Soest, T., & Hagtvet, K. A. (2011). Mediation analysis in a latent growth curve modeling framework. *Structural Equation Modeling*, *18*(2), 289-314. doi:10.1080/10705511.2011.557344

Wang, S. C., Schwartz, S. J., & Zamboanga, B. L. (2010). Acculturative stress among Cuban American college students: Exploring the mediating pathways between acculturation and psychosocial functioning. *Journal of Applied Social Psychology*, *40*(11), 2862-2887. doi: 10.1111/j.1559-1816.2010.00684.x

Ward, C., & Geeraert, N. (2016). Advancing acculturation theory and research: The acculturation process in its ecological context. *Current Opinion in Psychology*, *8*, 98-104. doi:10.1016/j.copsyc.2015.09.021

Wei, M., Liao, K. Y. H., Chao, R. C. L., Mallinckrodt, B., Tsai, P. C., & Botello-Zamarron, R. (2010). Minority stress, perceived bicultural competence, and depressive symptoms among ethnic minority college students. *Journal of Counseling Psychology*, *57*(4), 411-422. doi:10.1037/a0020790

West, A. L., Zhang, R., Yampolsky, M., & Sasaki, J. Y. (2017). More Than the Sum of Its Parts: A Transformative Theory of Biculturalism. *Journal of Cross-Cultural Psychology*, *48*(7), 963-990. doi:10.1177/0022022117709533

White, R. M., Knight, G. P., Jensen, M., & Gonzales, N. A. (2018a). Ethnic socialization in neighborhood contexts: Implications for ethnic attitude and identity development among Mexican-origin adolescents. *Child Development*, *89*(3), 1004-1021. doi:10.1111/cdev.12772

White R. M. B., Knight, G. P., & Roosa, M. W. (2015a). Using culturally informed theory to study Mexican American children and families. In Y.M. Caldera and E. W. Lindsey (Eds.), *Mexican American children and families: Multidisciplinary perspectives* (pp. 27-43). New York, NY: Routledge Press.

White, R. M., Liu, Y., Gonzales, N. A., Knight, G. P., & Tein, J. Y. (2016). Neighborhood qualification of the association between parenting and problem behavior trajectories among Mexican-origin father–adolescent dyads. *Journal of Research on Adolescence*, *26*(4), 927-946. doi:10.1111/jora.12245

White, R., Liu, Y., Nair, R. L., & Tein, J. Y. (2015b). Longitudinal and integrative tests of family stress model effects on Mexican origin adolescents. *Developmental Psychology*, *51*(5), 649. doi:10.1037/a0038993

White, R., Nair, R. L., & Bradley, R. H. (2018b). Theorizing the benefits and costs of adaptive cultures for development. *American Psychologist*, *73*(6), 727. doi:10.1037/amp0000237

White, R., Roosa, M. W., Weaver, S. R., & Nair, R. L. (2009). Cultural and contextual influences on parenting in Mexican American families. *Journal of Marriage and Family*, *71*(1), 61-79. doi:10.1111/j.1741-3737.2008.00580.x

White, R., Roosa, M. W., & Zeiders, K. H. (2012). Neighborhood and family intersections: Prospective implications for Mexican American adolescents' mental health. *Journal of Family Psychology*, *26*(5), 793. doi:10.1037/a0029426

White, R., Updegraff, K. A., Umaña-Taylor, A. J., Zeiders, K. H., Perez-Brena, N., & Burleson, E. (2017). Neighborhood and school ethnic structuring and cultural adaptations among Mexican-origin adolescents. *Developmental Psychology*, *53*(3), 511. doi:10.1037/dev0000269

White, R. M. B., Zeiders, K. H., Gonzales, N. A., Tein, J., & Roosa, M. W. (2013). Cultural values, U.S. neighborhood danger, and Mexican American parents' parenting. *Journal of Family Psychology*, *27*, 265 – 275. doi:10.1037/a0032888

Yoon, E., Langrehr, K., & Ong, L. Z. (2011). Content analysis of acculturation research

in counseling and counseling psychology: a 22-year review. *Journal of Counseling Psychology, 58*(1), 83-96. doi:10.1037/a0021128

Zeiders, K. H., Umaña-Taylor, A. J., Updegraff, K. A., & Jahromi, L. B. (2015). Acculturative and enculturative stress, depressive symptoms, and maternal warmth: examining within-person relations among Mexican-origin adolescent mothers. *Development and Psychopathology*, *27*(1), 293-308. doi:10.1017/S0954579414000637

Zeiders, K. H., Updegraff, K. A., Umaña-Taylor, A. J., McHale, S. M., & Padilla, J. (2016). Familism values, family time, and Mexican-Origin young adults' depressive symptoms. *Journal of Marriage and Family*, *78*(1), 91-106. doi: 10.1111/jomf.12248

Table 1

Summary of Descriptive Statistics and Intercorrelations for Study Variables in the Mother-Adolescent Dyad Sample (N = 749)

Variables	1	2	3	4	5	6	7	8	9	10	11	*M*	*SD*
1. 5th Mexican Values (M)	___											4.41	.37
2. 5th Mainstream Values (M)	.373**	___										3.20	.62
3. 7th Mexican Values (M)	.638**	.244**	___									4.39	.40
4. 7th Mainstream Values (M)	.263**	.682**	.413**	___								3.20	.62
5. 10th Mexican Values (M)	.644**	.273**	.696**	.320**	___							4.40	.39
6. 10th Mainstream Values (M)	.260**	.688**	.297**	.741**	.395**	___						3.19	.61
7. 5th Mexican Values (Y)	.030	-.036	.063	.004	.043	-.019	___					4.52	.33
8. 5th Mainstream Values (Y)	.044	.128**	.026	.105**	.004	.120**	.285**	___				2.91	.74
9. 12th Bicultural Facility (Y)	.017	.043	.017	.099*	.060	.118**	.073	-.031	___			3.87	.59
10. 12th Bicultural Comfort (Y)	.076	.046	.040	.032	.040	.034	.158**	-.097*	.481**	___		3.51	.96
11. 12th Bicultural Advantage (Y)	.007	.050	-.002	.049	.050	.093*	.140**	-.046	.582**	.397**	___	4.10	.55

Note. M = Mother report; Y = Youth report; 5th = 5th grade; 7th = 7th grade; 10th = 10th grade; 12th = 12th grade. Descriptive analyses were conducted in SPSS using listwise deletion.

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

Table 2

Summary of Descriptive Statistics and Intercorrelations for Study Variables in the Father-Adolescent Dyad Sample (n = 579)

Variables	1	2	3	4	5	6	7	8	9	10	11	*M*	*SD*
1. 5th Mexican Values (F)	___											4.38	.38
2. 5th Mainstream Values (F)	.418**	___										3.40	.62
3. 7th Mexican Values (F)	.701**	.330**	___									4.37	.36
4. 7th Mainstream Values (F)	.296**	.725**	.436**	___								3.44	.59
5. 10th Mexican Values (F)	.686**	.227**	.715**	.257**	___							4.34	.37
6. 10th Mainstream Values (F)	.270**	.643**	.358**	.715**	.391**	___						3.38	.57
7. 5th Mexican Values (Y)	.060	-.038	.065	-.021	.003	-.001	___					4.51	.33
8. 5th Mainstream Values (Y)	.047	.038	.071	.070	-.010	.086	.284**	___				2.92	.76
9. 12th Bicultural Facility (Y)	-.056	.001	-.112*	.036	-.057	.064	.085	-.059	___			3.90	.59
10. 12th Bicultural Comfort (Y)	.017	-.014	-.086	-.004	-.075	.009	.153**	-.093*	.489**	___		3.52	.96
11. 12th Bicultural Advantage (Y)	-.066	.001	-.111*	.062	-.077	.039	.165**	-.061	.593**	.374**	___	4.13	.54

Note. F = Father report; Y = Youth report; 5th = 5th grade; 7th = 7th grade; 10th = 10th grade; 12th = 12th grade. Descriptive analyses were conducted in SPSS using listwise deletion.

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

Table 3

Summary of Mothers' Enculturation and Acculturation Growth Factors

Latent Growth Factor	Mean	Variance
Enculturation Intercept	4.407** (.013)	.095** (.009)
Enculturation Slope	-.001 (.003)	.002* (.001)
Acculturation Intercept	3.197**(.022)	.267** (.020)
Acculturation Slope	.001 (.004)	.002 (.002)

Note. Unstandardized coefficients reported. Standard errors are reported in parentheses.
* $p <$ .05. ** $p <$ .01.

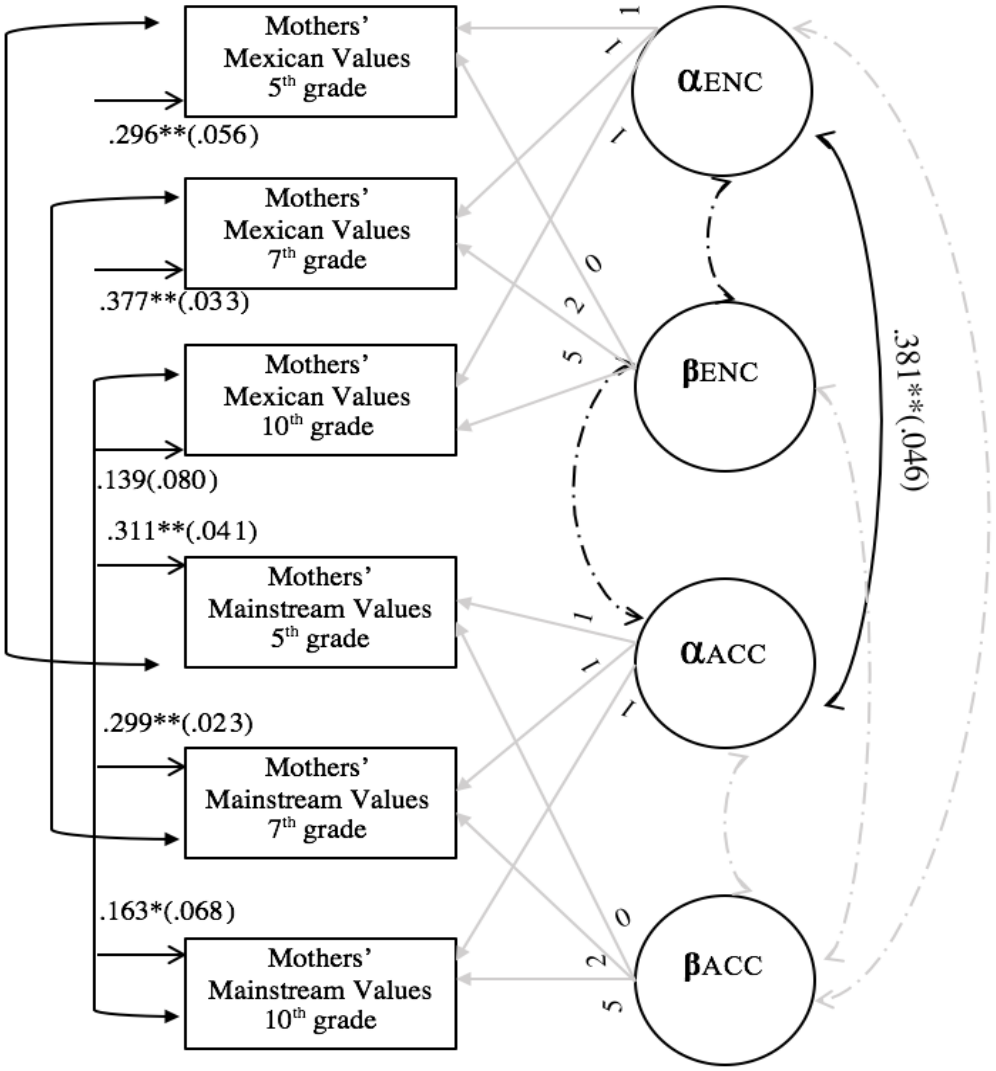


Figure 1. Test of hypothesized parallel process model for mothers' enculturation and acculturation growth trajectories *(N* = 749). 5th grade family annual income was included as an auxiliary variable. ENC = Enculturation. ACC = Acculturation. Completely standardized coefficients reported (STDYX in *Mplus*). Standard errors are reported in parentheses. Only significant coefficients are shown to enhance clarity. Black solid lines represent significant paths. Black dash lines represent non-significant paths ($p > .05$). Grey solid lines represent fixed parameters. Grey dash lines represent correlations involving growth factors with no variability. Model fit: χ^2 (4) = 2.826, p = .587; CF1 = 1, RMSEA = .000; SRMR = .006.
* p <. 05. ** p <. 01.

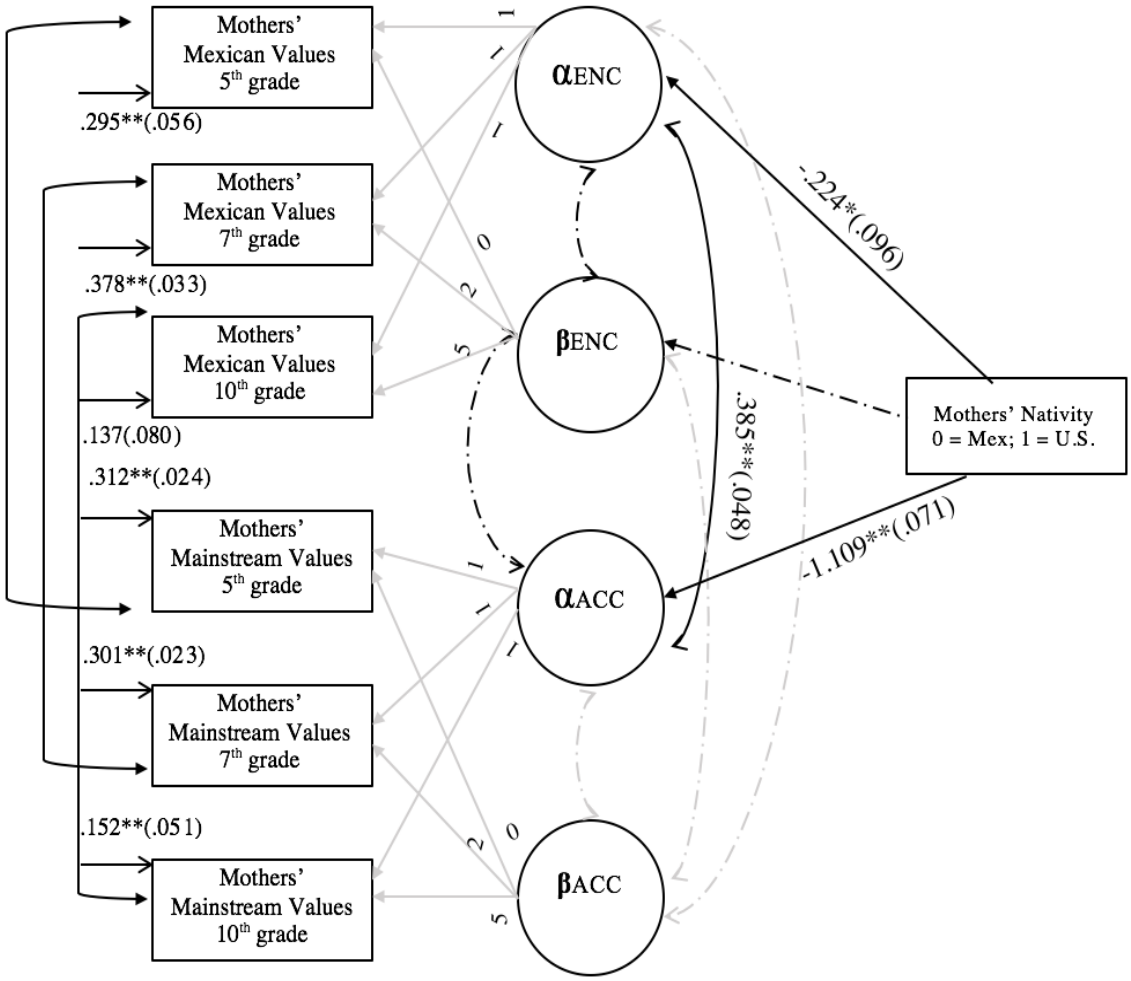


Figure 2. Test of hypothesized parallel process model for mothers' enculturation and acculturation growth trajectories with mothers' nativity as a predictor of growth factors *(N* = 749). 5th grade family annual income was included as an auxiliary variable. ENC = Enculturation. ACC= Acculturation. Mex = Mexico. Completely standardized coefficients reported (STDY in *Mplus*). Standard errors are reported in parentheses. Only significant coefficients are shown to enhance clarity. Black solid lines represent significant paths. Black dash lines represent non-significant paths ($p > .05$). Grey solid lines represent fixed parameters. Grey dash lines represent correlations involving growth factors with no variability. Model fit: χ^2 (8) = 5.406, p = .713; CF1 = 1, RMSEA = .000; SRMR = .014.
* $p <$. 05. ** $p <$. 01.

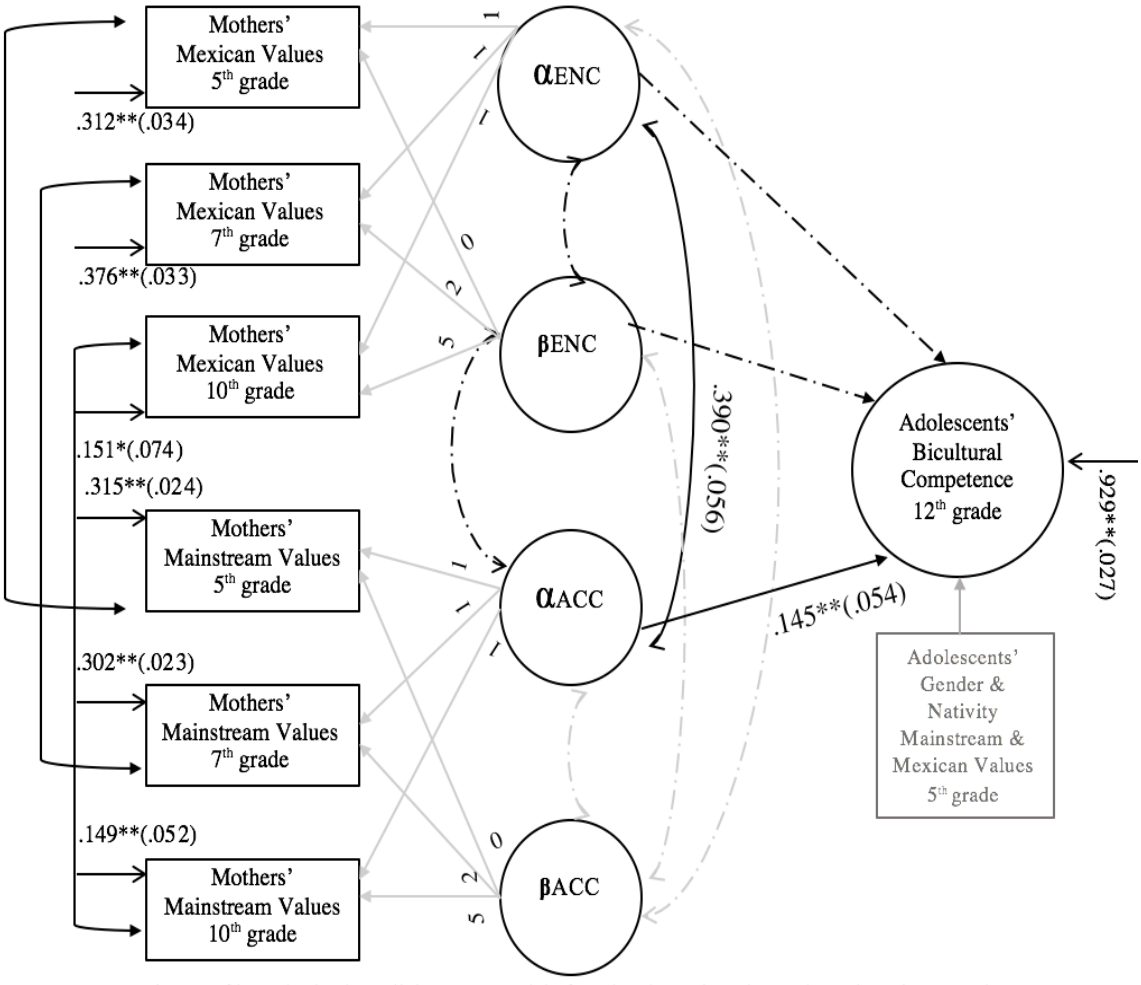


Figure 3. Test of hypothesized parallel process model of mothers' enculturation and acculturation growth trajectories predicting their adolescents' bicultural competence *(N* = 749). Mothers' nativity was included as a predictor of the growth factors but not included in the figure for ease of presentation. 5th grade family annual income was included as an auxiliary variable. ENC = Enculturation. ACC = Acculturation. Completely standardized coefficients reported (STDYX in *Mplus*). Standard errors are reported in parentheses. Only significant coefficients are shown to enhance clarity. Black solid lines represent significant paths. Black dash lines represent non-significant paths ($p > .05$). Grey solid lines represent fixed parameters. Grey dash lines represent correlations involving growth factors with no variability. Model fit: χ^2 (43) = 84.642, $p < .001$; CF1 = .984, RMSEA = .036; SRMR = .036.
* $p <. 05$. ** $p <. 01$.

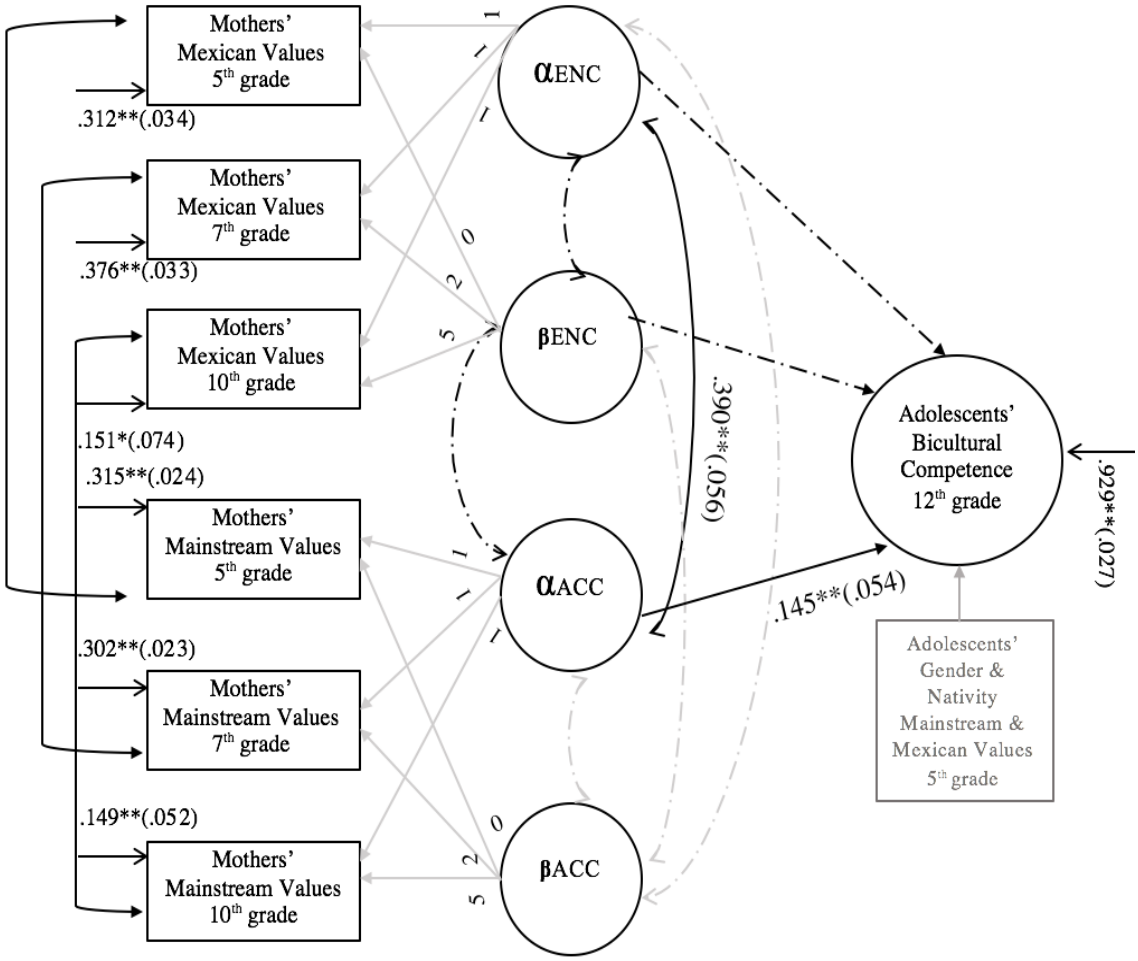


Figure 4. Test of hypothesized parallel process model of mothers' enculturation and acculturation growth trajectories predicting their adolescents' bicultural competence with adolescents' gender and nativity covariates *(N* = 749). Mothers' nativity was included as a predictor of the growth factors but not included in the figure for ease of presentation. 5th grade family annual income was included as an auxiliary variable. ENC = Enculturation. ACC= Acculturation. Completely standardized coefficients reported (STDYX in *Mplus*). Standard errors are reported in parentheses. Only significant coefficients are shown to enhance clarity. Black solid lines represent significant paths. Black dash lines represent non-significant paths ($p > .05$). Grey solid lines represent fixed parameters. Grey dash lines represent correlations involving growth factors with no variability. Grey lines represent fixed parameters. Model fit: χ^2 (63) = 114.993, $p < .001$; CF1 = .981, RMSEA = .033; SRMR = .037.
* $p <.$ 05. ** $p <.$ 01.

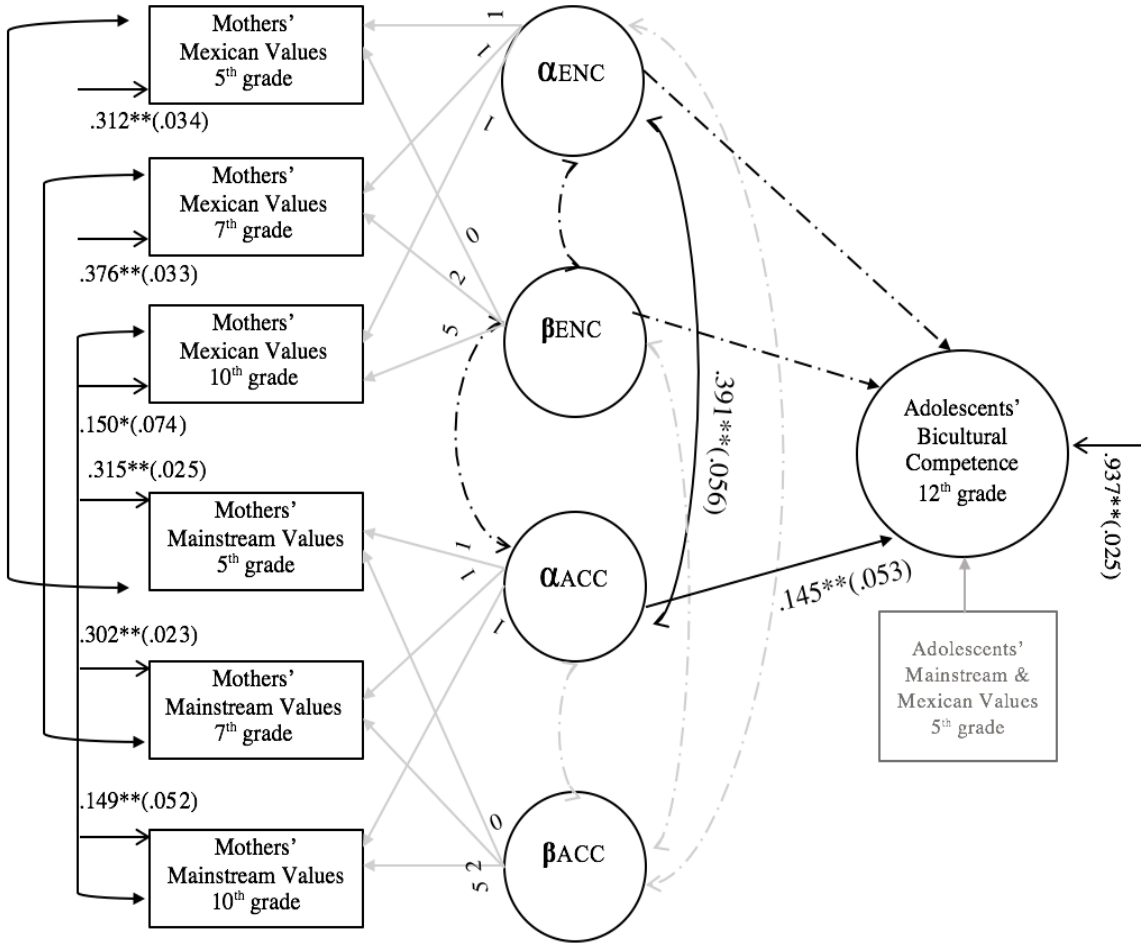


Figure 5. Test for null model comparison: parallel process of mothers' enculturation and acculturation growth trajectories predicting their adolescents' bicultural competence without auxiliary variable *(N* = 749). Mothers' nativity was included as a predictor of the growth factors but not included in the figure for ease of presentation. ENC = Enculturation. ACC = Acculturation. Completely standardized coefficients reported (STDYX in *Mplus*). Standard errors are reported in parentheses. Only significant coefficients are shown to enhance clarity. Black solid lines represent significant paths. Black dash lines represent non-significant paths ($p > .05$). Grey solid lines represent fixed parameters. Grey dash lines represent c correlations involving growth factors with no variability. Model fit: $\chi^2(43) = 84.615$, $p < .001$; CF1 = .984, RMSEA = .036; SRMR = .036.
* $p < .05$. ** $p < .01$.

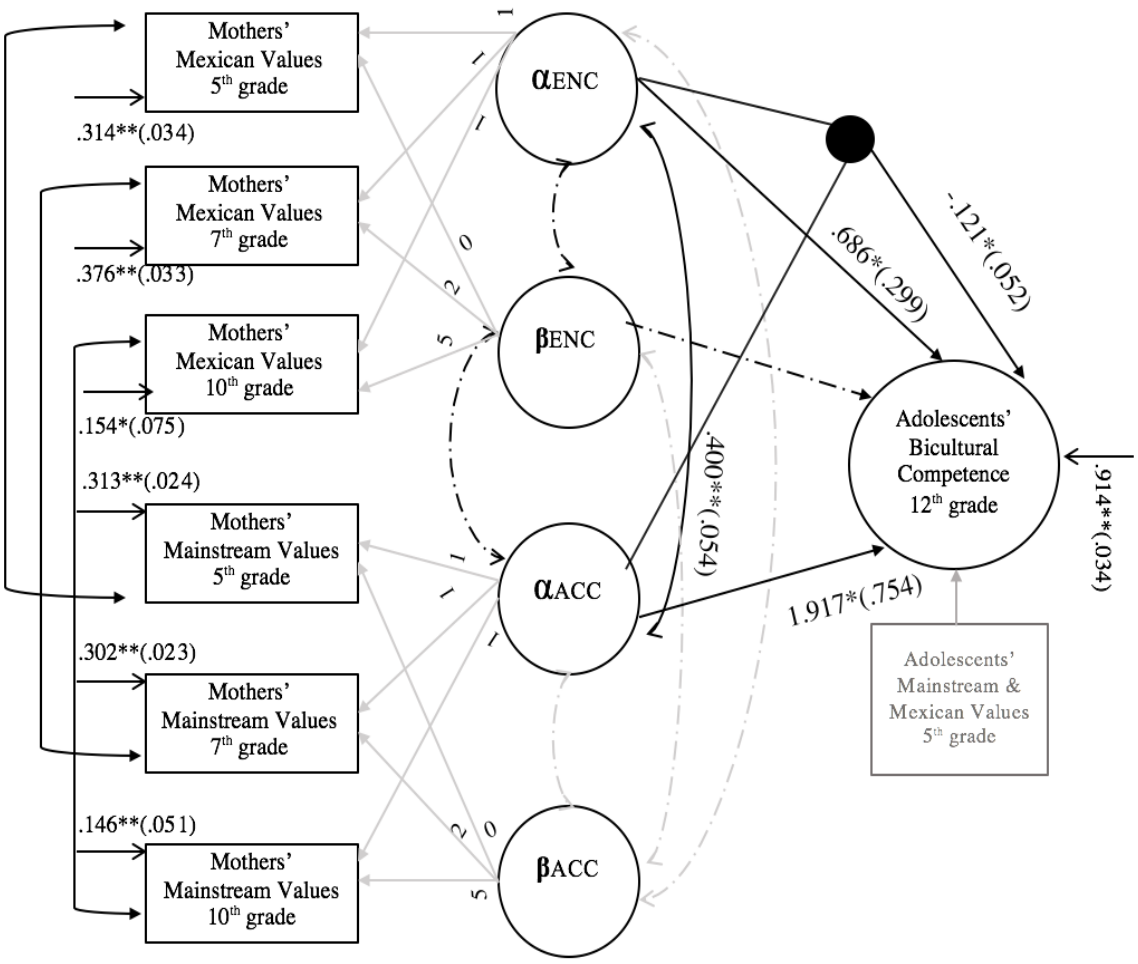


Figure 6. (FINAL MODEL) Test of hypothesized parallel process model of mothers' enculturation and acculturation growth trajectories predicting their adolescents' bicultural competence with intercepts interaction *(N* = 749). Mothers' nativity was included as a predictor of the growth factors but not included in the figure for ease of presentation. Black dot represents the interaction term. ENC = Enculturation. ACC = Acculturation. Completely standardized coefficients reported (STDYX in *Mplus*). Standard errors are reported in parentheses. Only significant coefficients are shown to enhance clarity. Black solid lines represent significant paths. Black dash lines represent non-significant paths ($p > .05$). Grey solid lines represent fixed parameters. Grey dash lines represent correlations involving growth factors with no variability. * $p < .05$. ** $p < .01$.

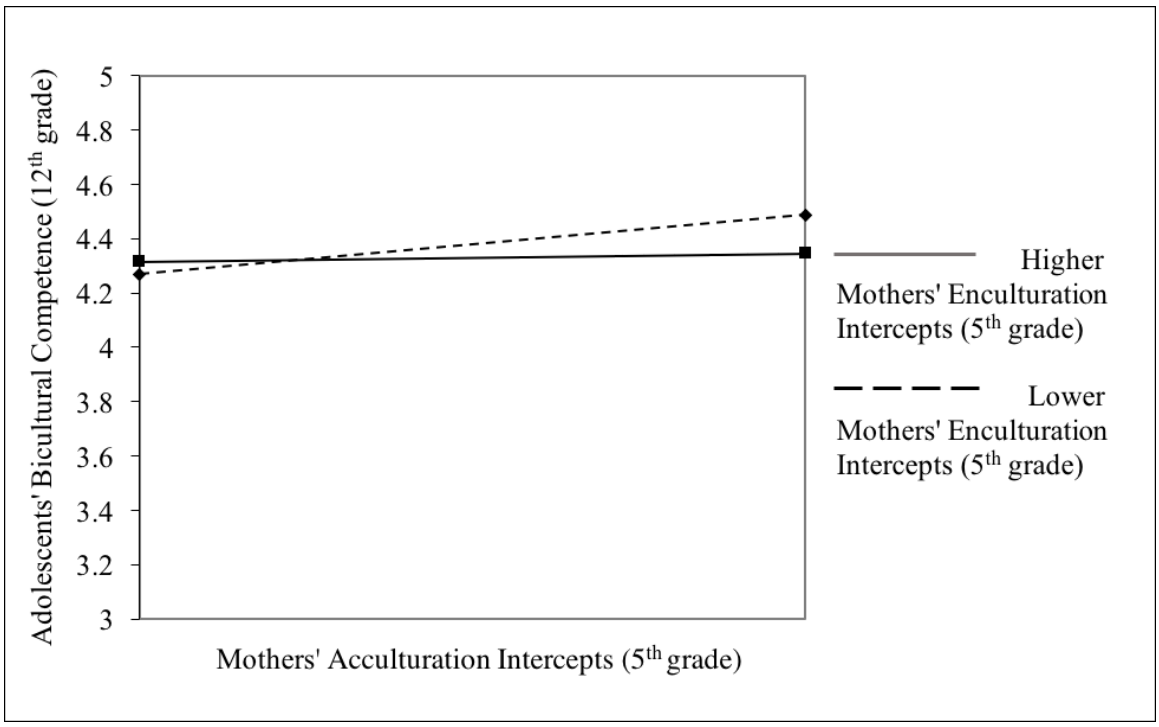


Figure 7. Moderating role of mothers' enculturation intercepts (target adolescent in 5th grade) in the association between mothers' acculturation intercepts (target adolescent in 5th grade) and adolescents' 12th grade bicultural competence. Scale only presented for values up to 1 *SD* above and below the mean of adolescents' bicultural competence. Higher versus lower levels of mothers' enculturation intercepts were defined by 1 *SD* above and below the mean, respectively. Higher enculturation intercepts correspond to values above or equal to 4.7 and lower intercepts correspond to values below or equal to 4.1. Higher acculturation intercepts correspond to values above or equal to 3.7 and lower intercepts correspond to values below or equal to 2.7.

Table 4
Summary of Fathers' Enculturation and Acculturation Growth Factors

Latent Growth Factor	Mean	Variance
Enculturation Intercept	4.384** (.017)	.095** (.009)
Enculturation Slope	-.008** (.003)	0 (Fixed)
Acculturation Intercept	3.417**(.028)	.293** (.025)
Acculturation Slope	-.004 (.005)	.004 (.002)

Note. Unstandardized coefficients reported. Standard errors are reported in parentheses.
* $p <$. 05. ** $p <$. 01.

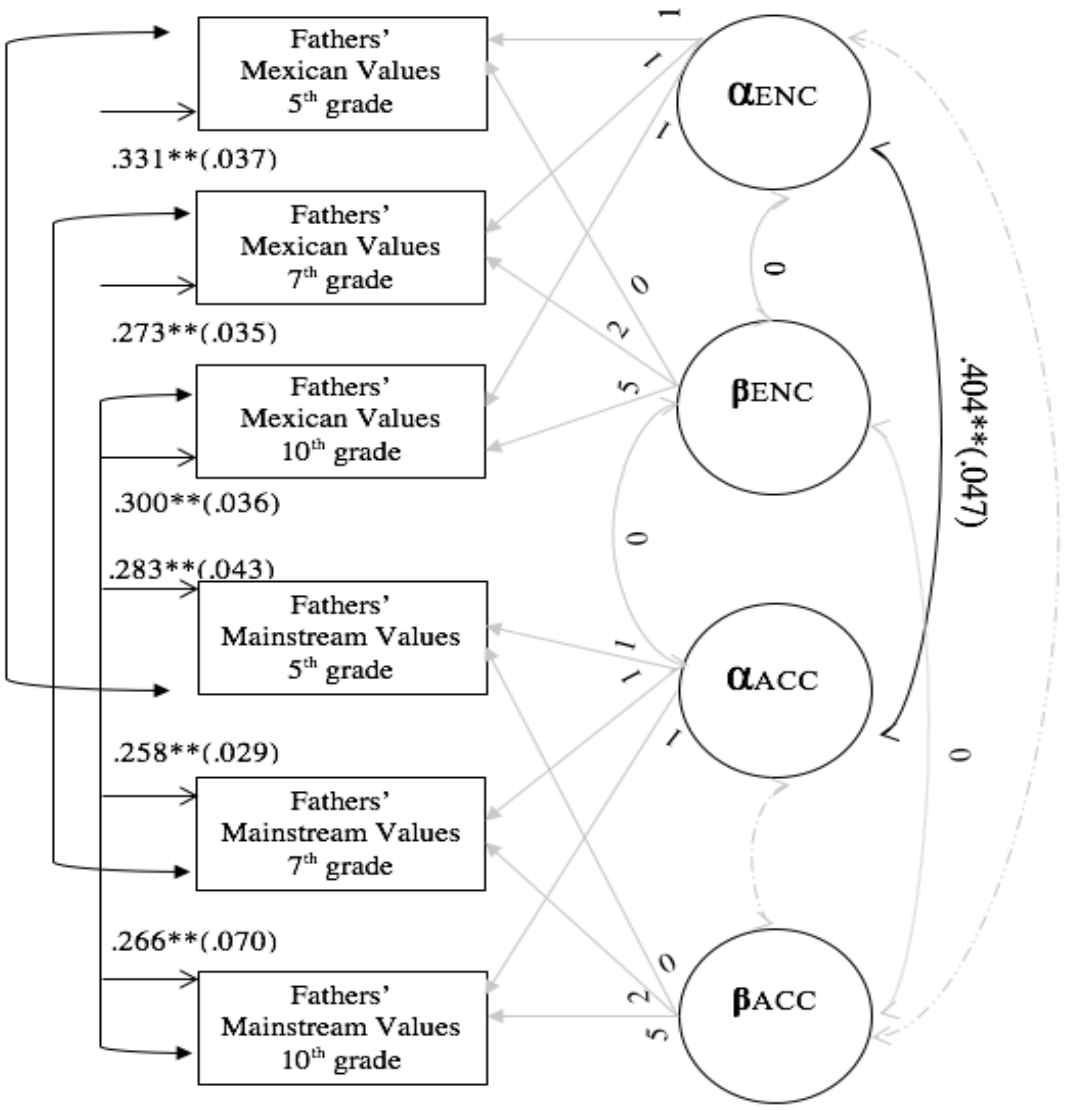


Figure 8. Test of hypothesized parallel process model for fathers' enculturation and acculturation growth trajectories *(n* = 579). 5th grade family annual income was included as an auxiliary variable. ENC = Enculturation. ACC = Acculturation. Completely standardized coefficients reported (STDYX in *Mplus*). Standard errors are reported in parentheses. Only significant coefficients are shown to enhance clarity. Black solid lines represent significant paths. Grey solid lines represent fixed parameters. Grey dash lines represent correlations involving growth factors with no variability. Model fit: χ^2 (8) = 7.713, p = .462; CFI = 1, RMSEA = .000; SRMR = .024. * p <. 05. ** p <. 01.

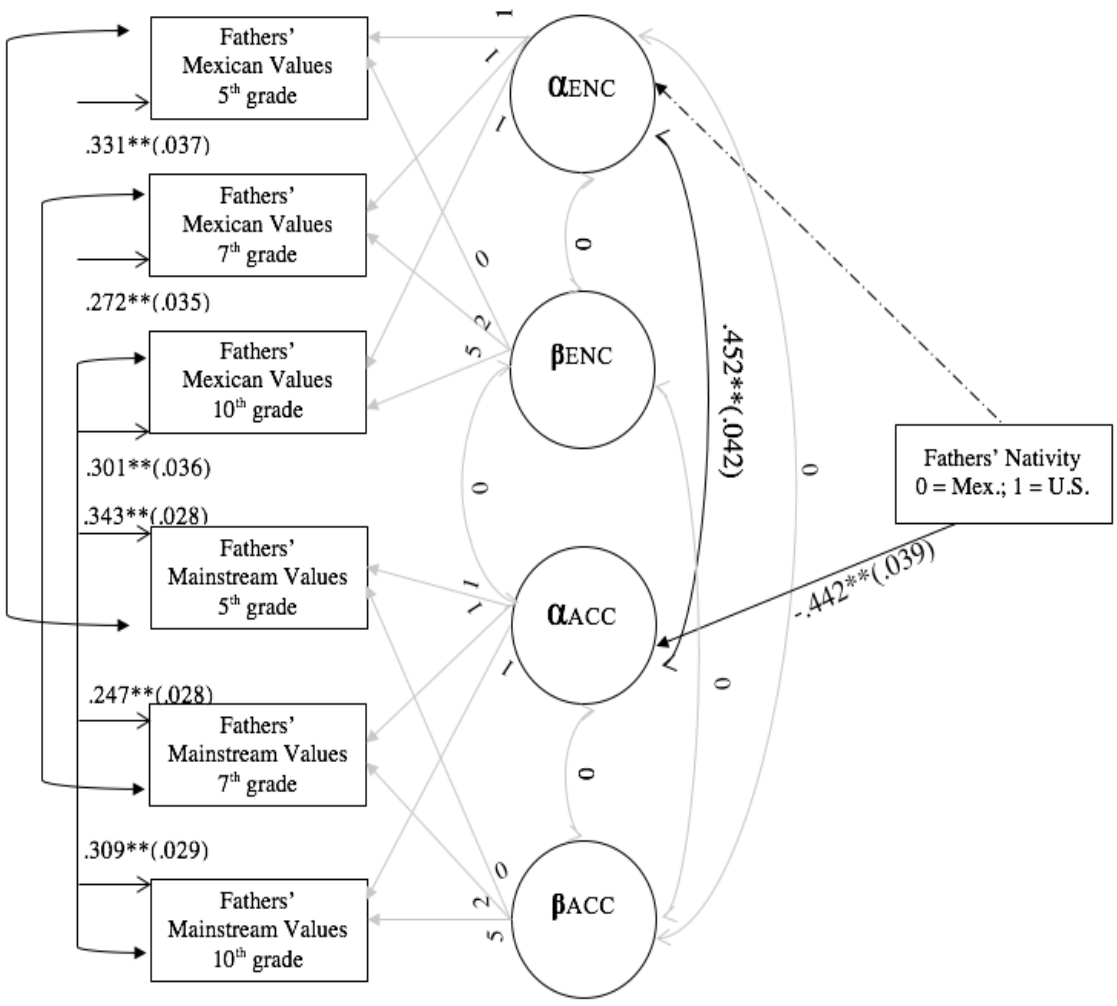


Figure 9. Test of hypothesized parall1el process model for fathers' enculturation and acculturation growth trajectories with fathers' nativity as a predictor of growth factors *(n* = 579). 5th grade family annual income was included as an auxiliary variable. ENC = Enculturation. ACC = Acculturation. Mex = Mexico. Completely standardized coefficients reported (STDY in *Mplus*). Standard errors are reported in parentheses. Only significant coefficients are shown to enhance clarity. Black solid lines represent significant paths. Black dash lines represent non-significant paths ($p > .05$). Grey solid lines represent fixed parameters. Model fit: χ^2 (15) = 14.806, p = .465; CFI = 1, RMSEA = .000; SRMR = .060.
* $p <$. 05. ** $p <$. 01.

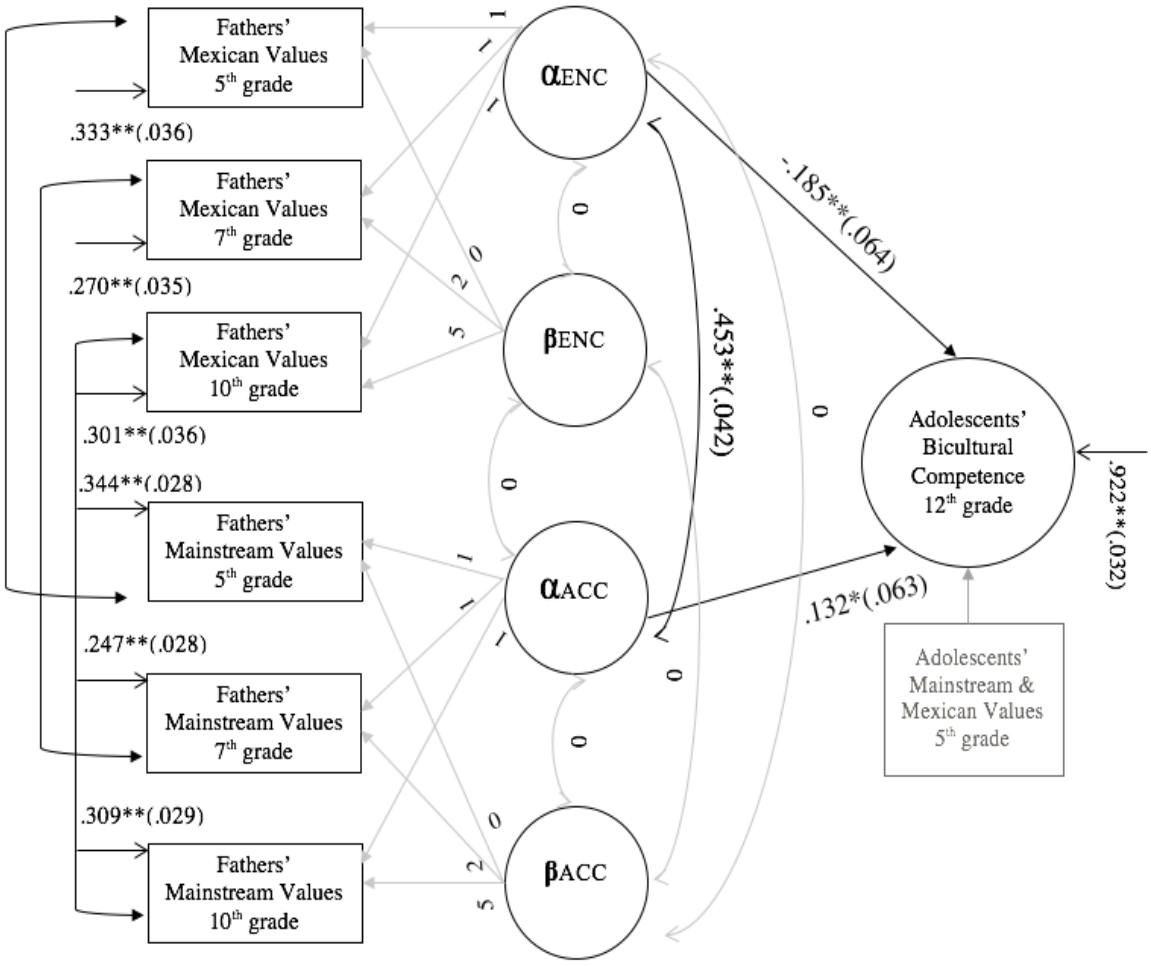


Figure 10. (FINAL MODEL) Test of hypothesized parallel process model of fathers' enculturation and acculturation growth trajectories predicting their adolescents' bicultural competence *(n* = 579). Fathers' nativity was included as a predictor of the growth factors but not included in the figure for ease of presentation. 5th Grade family annual income was included as an auxiliary variable. ENC = Enculturation. ACC = Acculturation. Completely standardized coefficients reported (STDYX in *Mplus*). Standard errors are reported in parentheses. Only significant coefficients are shown to enhance clarity. Black solid lines represent significant paths. Grey solid lines represent fixed parameters. Model fit: χ^2 (50) = 74.096, p = .015; CFI = .986, RMSEA = .029; SRMR = .048.
* p <. 05. ** p <. 01.

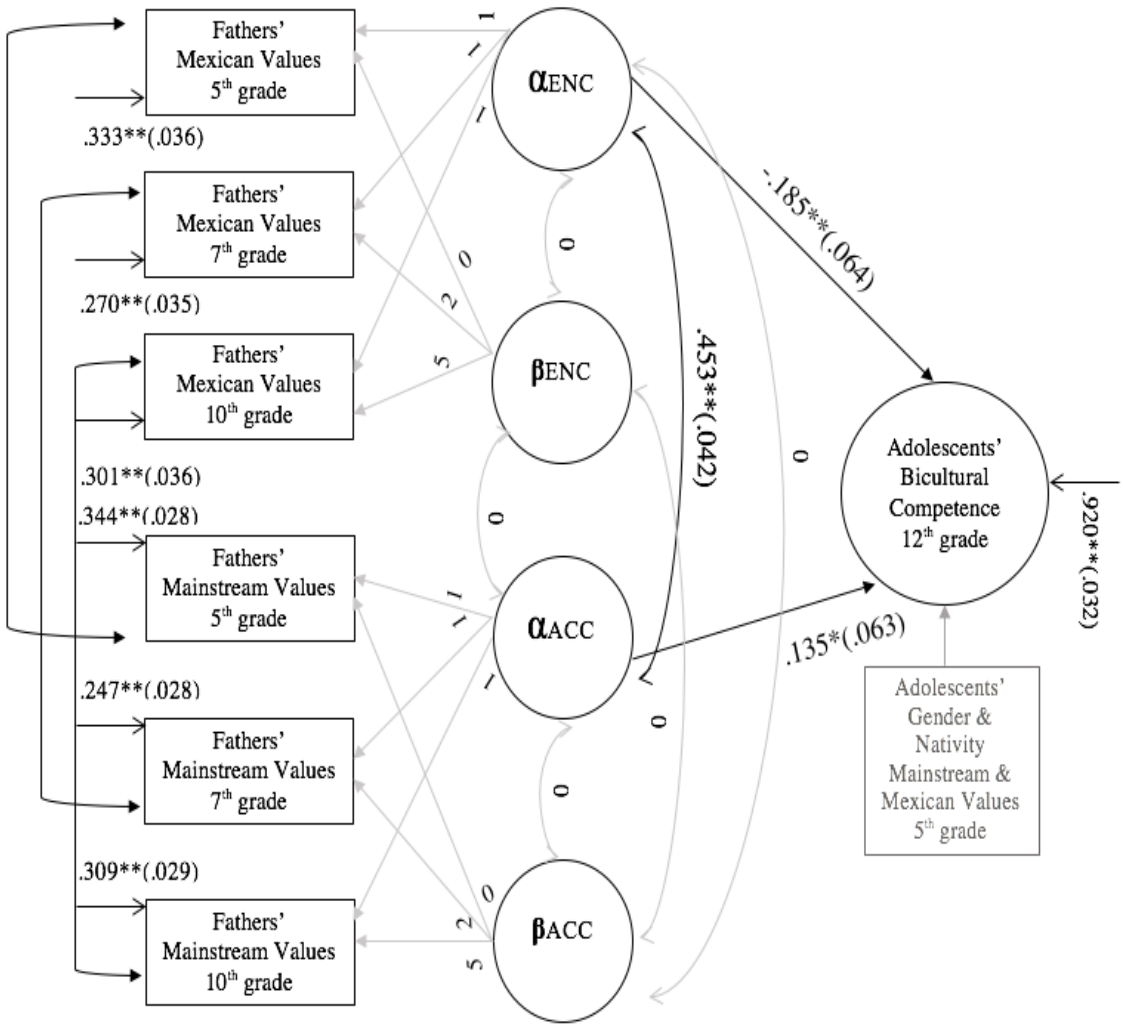


Figure 11. Test of hypothesized parallel process model of fathers' enculturation and acculturation growth trajectories predicting their adolescents' bicultural competence with adolescents' gender and nativity covariates *(n* = 579). Fathers' nativity was included as a predictor of the growth factors but not included in the figure for ease of presentation. 5th grade family annual income was included as an auxiliary variable. ENC = Enculturation. ACC = Acculturation. Completely standardized coefficients reported (STDYX in *Mplus*). Standard errors are reported in parentheses. Only significant coefficients are shown to enhance clarity. Black solid lines represent significant paths. Grey solid lines represent fixed parameters. Model fit: χ^2 (70) = 159.746, $p < .001$; CF1 = .952, RMSEA = .047; SRMR = .059.
* $p <. 05$. ** $p <. 01$.

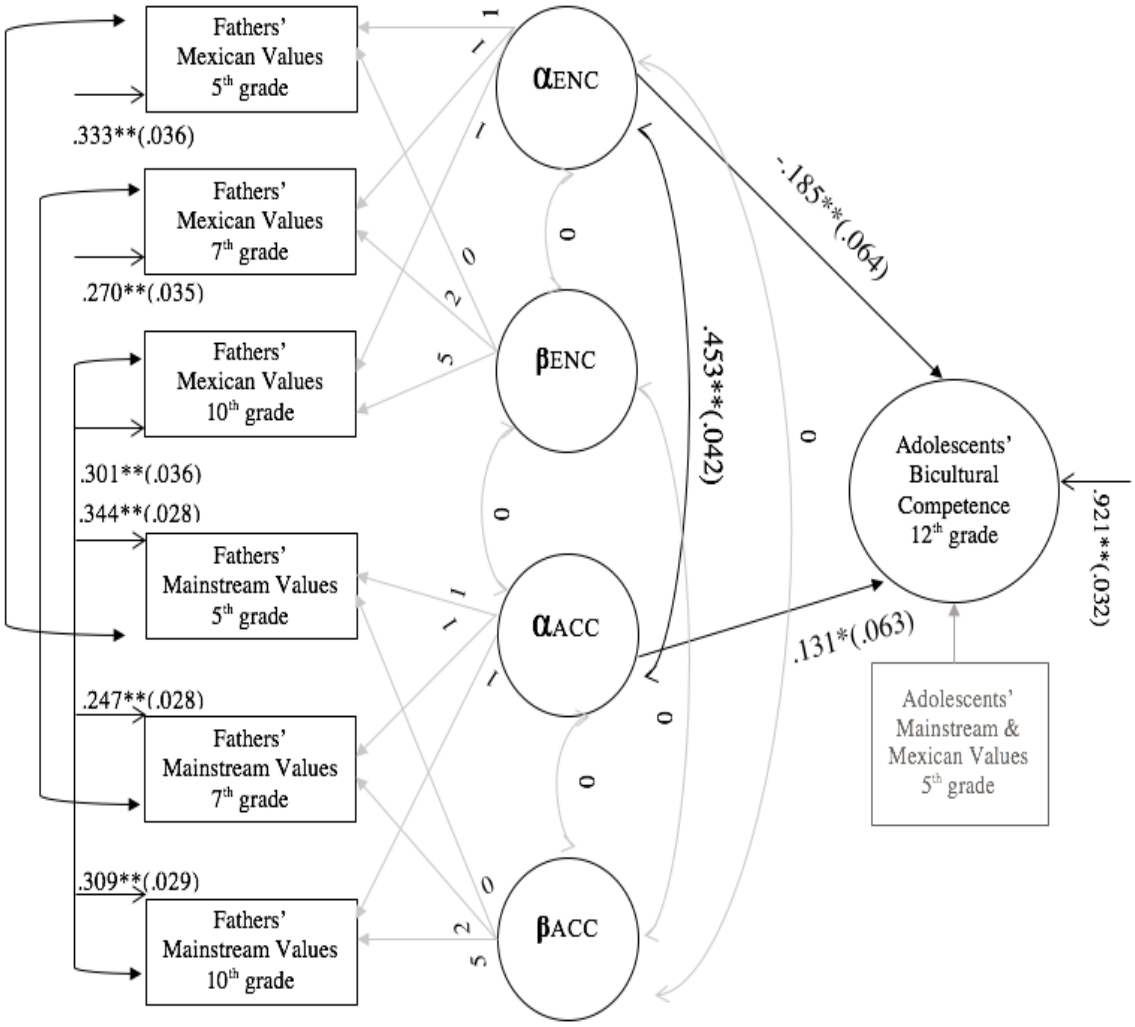
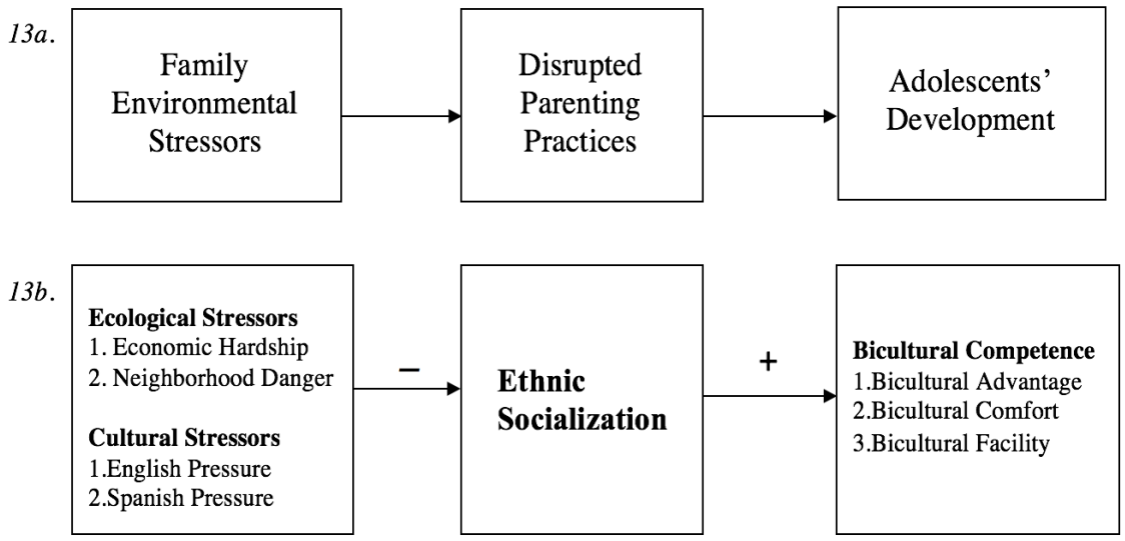


Figure 12. Test for null model comparison: parallel process of fathers' enculturation and acculturation growth trajectories predicting their adolescents' bicultural competence without auxiliary variable *(n* = 579). Fathers' nativity was included as a predictor of the growth factors but not included in the figure for ease of presentation. ENC = Enculturation. ACC = Acculturation. Completely standardized coefficients reported (STDYX in *Mplus*). Standard errors are reported in parentheses. Only significant coefficients are shown to enhance clarity. Black solid lines represent significant paths. Grey solid lines represent fixed parameters. Model fit: χ^2 (50) = 73.844, p = .015; CFI = .986, RMSEA = .029; SRMR = .047.
* $p < .05$. ** $p < .01$.



Figures 13a and 13b. Conceptual and Investigated Models. (*13a)* Conceptual model describing the implications of family environmental stressors for adolescents' development via disrupted parenting practices. (*13b*) Investigated model describing the implications of parental exposure to ecological stressors (i.e., economic hardship and neighborhood danger) and cultural stressors (i.e., English language pressures or Spanish language pressures) for adolescents' development of different components of bicultural competence via disrupted parental ethnic socialization practices.

Table 5

Summary of Descriptive Statistics and Intercorrelations for Study Variables in the Mother-Adolescent Dyad Sample

Variables	1	2	3	4	5	6	7	8	9	10	11	*M*	*SD*
1. 5th Spanish Pressures (M)	____											1.26	.55
2. 5th English Pressures (M)	-.264**	____										2.33	1.18
3. 5th Economic Hardship (M)	-.044	.310**	____									2.64	.88
4. 5th Neighborhood Danger (M)	-.041	.118**	.190**	____								2.52	1.03
5. 5th Ethnic Socialization (M)	-.166**	.284**	.054	-.013	____							3.10	.52
6. 7th Ethnic Socialization (M)	-.186**	.229**	.065	-.016	.661**	____						3.18	.50
7. 5th Mexican Values (Y)	-.012	-.028	-.040	-.020	-.013	.033	____					4.52	.33
8. 5th Mainstream Values (Y)	-.055	.154**	.192**	.035	.027	.058	.285**	____				2.91	.74
9. 10th Bicultural Facility (Y)	-.026	-.122*	-.052	-.071	.058	.108	.048	-.118*	____			3.67	.55
10. 10th Bicultural Comfort (Y)	-.166**	.069	-.054	.050	.084	.178**	.083	-.069	.385**	____		3.24	.98
11. 10th Bicultural Advantage (Y)	-.132*	-.049	-.100	-.015	.138*	.231**	.111*	-.156**	.457**	.318**	____	3.91	.55

Note. M = Mother report; Y = Youth report; 5th = 5th grade; 7th = 7th grade; 10th = 10th grade. Descriptive analyses were conducted in SPSS using listwise deletion.

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

Table 6

Summary of Descriptive Statistics and Intercorrelations for Study Variables in the Father-Adolescent Dyad Sample

Variables	1	2	3	4	5	6	7	8	9	10	11	*M*	*SD*
1. 5th Spanish Pressures (F)	___											1.29	.62
2. 5th English Pressures (F)	-.097*	___										1.99	.95
3. 5th Economic Hardship (F)	-.019	.307**	___									2.37	.84
4. 5th Neighborhood Danger (F)	-.018	.237**	.346**	___								2.42	.94
5. 5th Ethnic Socialization (F)	-.080	.034	-.003	-.114*	___							3.00	.54
6. 7th Ethnic Socialization (F)	-.105*	.063	.011	-.075	.682**	___						3.13	.52
7. 5th Mexican Values (Y)	-.045	-.014	.002	.007	-.031	.027	___					4.51	.33
8. 5th Mainstream Values (Y)	-.023	.098*	.127**	.091*	-.017	.039	.284**	___				2.92	.76
9. 10th Bicultural Facility (Y)	.015	.063	-.013	-.008	-.043	-.049	.058	-.112	___			3.69	.55
10. 10th Bicultural Comfort (Y)	-.137	.011	-.025	-.028	-.036	-.067	.091	-.133*	.406**	___		3.25	.99
11. 10th Bicultural Advantage (Y)	-.073	-.004	-.028	-.007	-.056	.022	.141*	-.147*	.506**	.369**	___	3.94	.53

Note. F = Father report. Y = Youth report; 5th = 5th grade; 7th = 7th grade; 10th = 10th grade. Descriptive analyses were conducted in SPSS using listwise deletion.

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

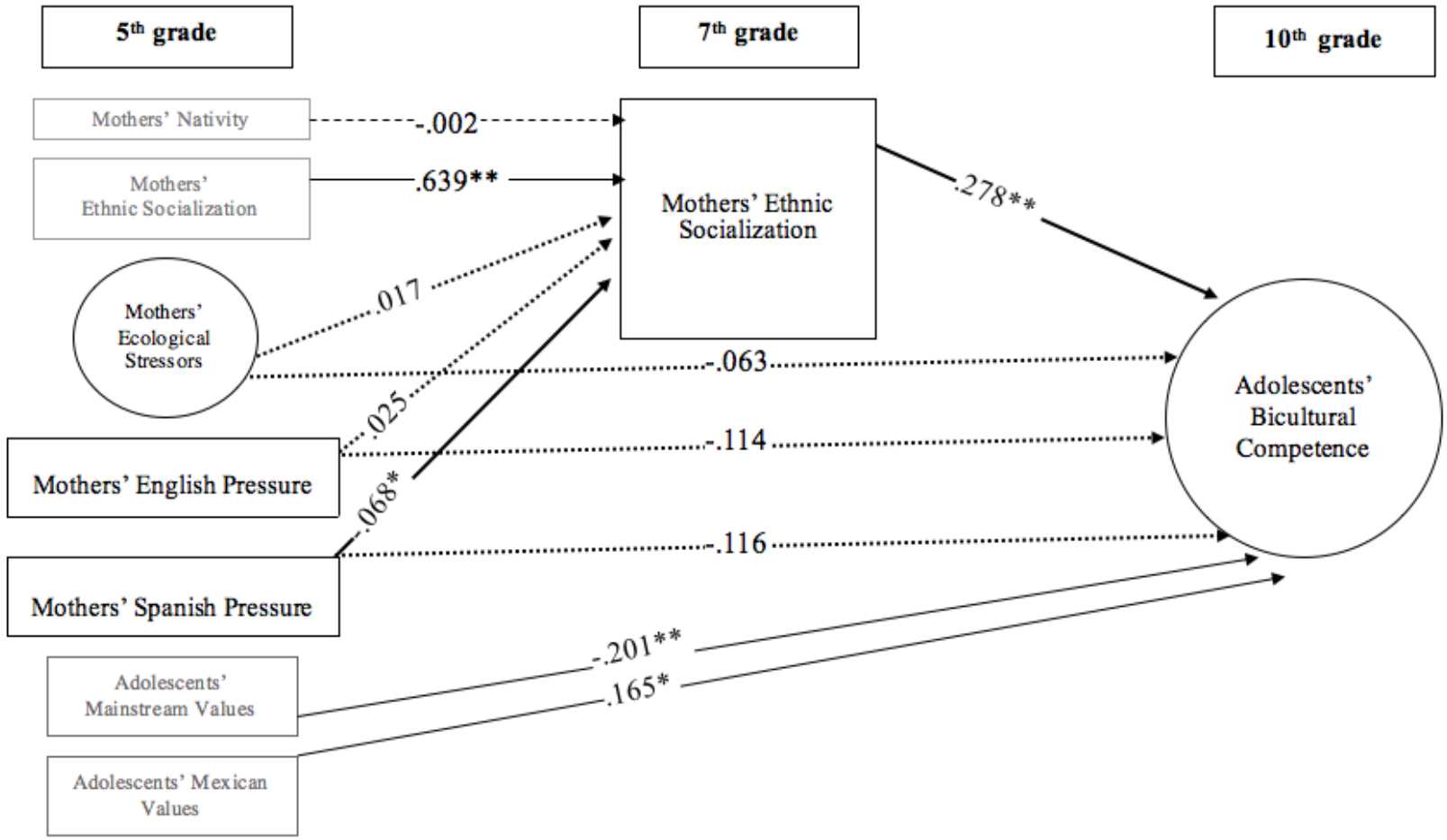


Figure 14. (FINAL MODEL) Test of hypothesized model linking 5th grade mothers' exposure to ecological stressors, English language competency pressures, and Spanish language competency pressures to 10th grade adolescents' bicultural competence via 7th grade mothers' ethnic socialization (N = 749). Completely standardized coefficients are reported. Nativity is coded (0 = Mexico born; 1= U.S. born). 5th grade family income is included as an auxiliary variable. Exogenous variables are allowed to correlate for missing data estimation. Solid lines represent significant paths. Dash lines represent non-significant paths ($p > .05$). Grey boxes represent covariates. Model fit: $\chi^2(28) = 36.475$, $p = .131$; CFI = .993; RMSEA = .020, SRMR = .028. * $p < .05$. ** $p < .01$.

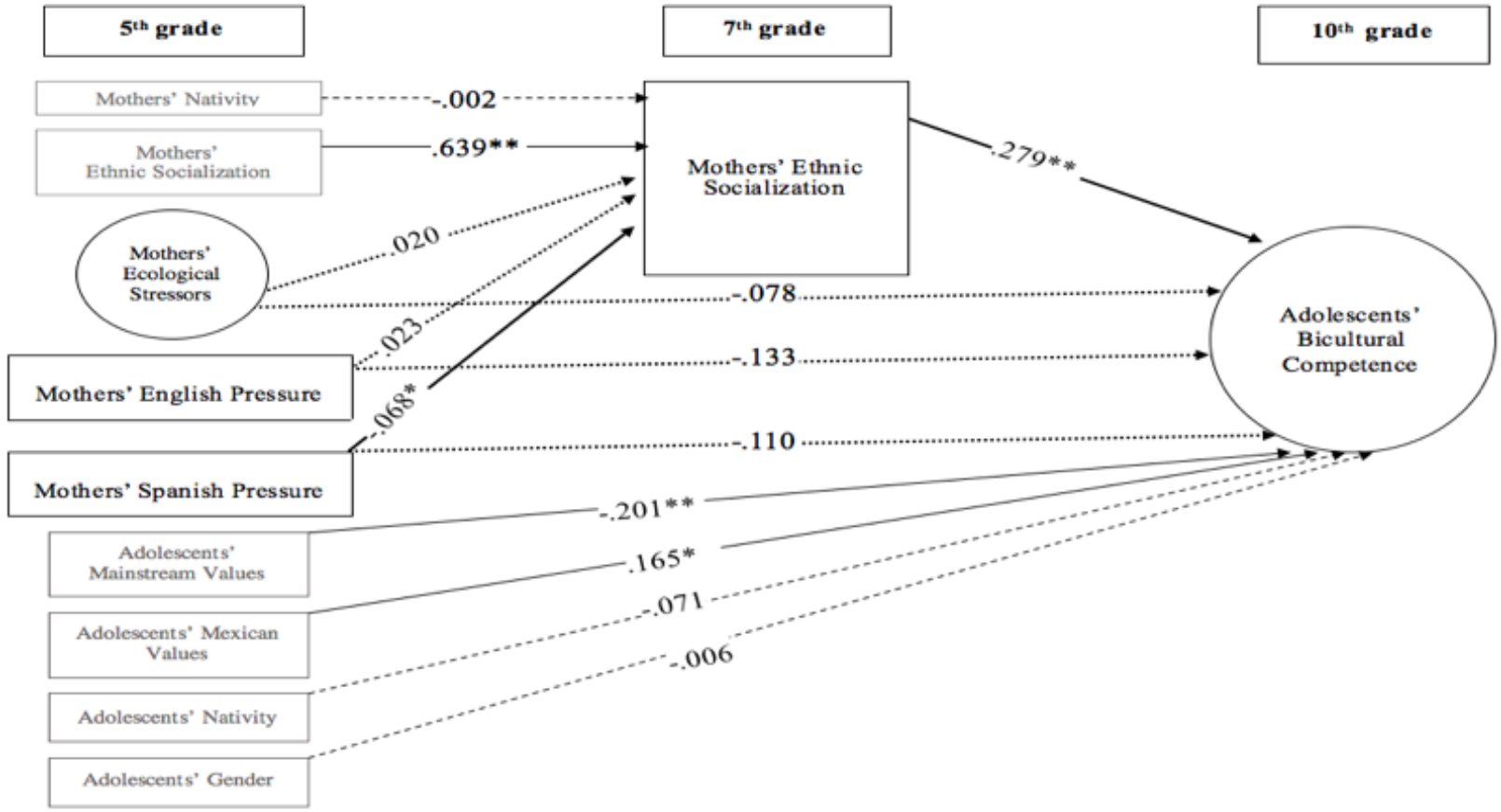


Figure 15. Test of hypothesized model linking 5th grade mothers' exposure to ecological stressors, English language competency pressures, and Spanish language competency pressures to 10th grade adolescents' bicultural competence via 7th grade mothers' ethnic socialization with adolescents' gender and nativity covariates ($N = 749$). Completely standardized coefficients are reported. Nativity is coded (0 = Mexico born; 1= U.S. born). Gender is coded (0 = male; 1= female). 5th grade family income is included as an auxiliary variable. Exogenous variables are allowed to correlate for missing data estimation. Solid lines represent significant paths. Dash lines represent non-significant paths ($p > .05$). Grey boxes represent covariates. Model fit: $\chi^2(36) = 48.510$, $p = .079$; CFI = .992; RMSEA = .022, SRMR = .027.
* $p < .05$. ** $p < .01$

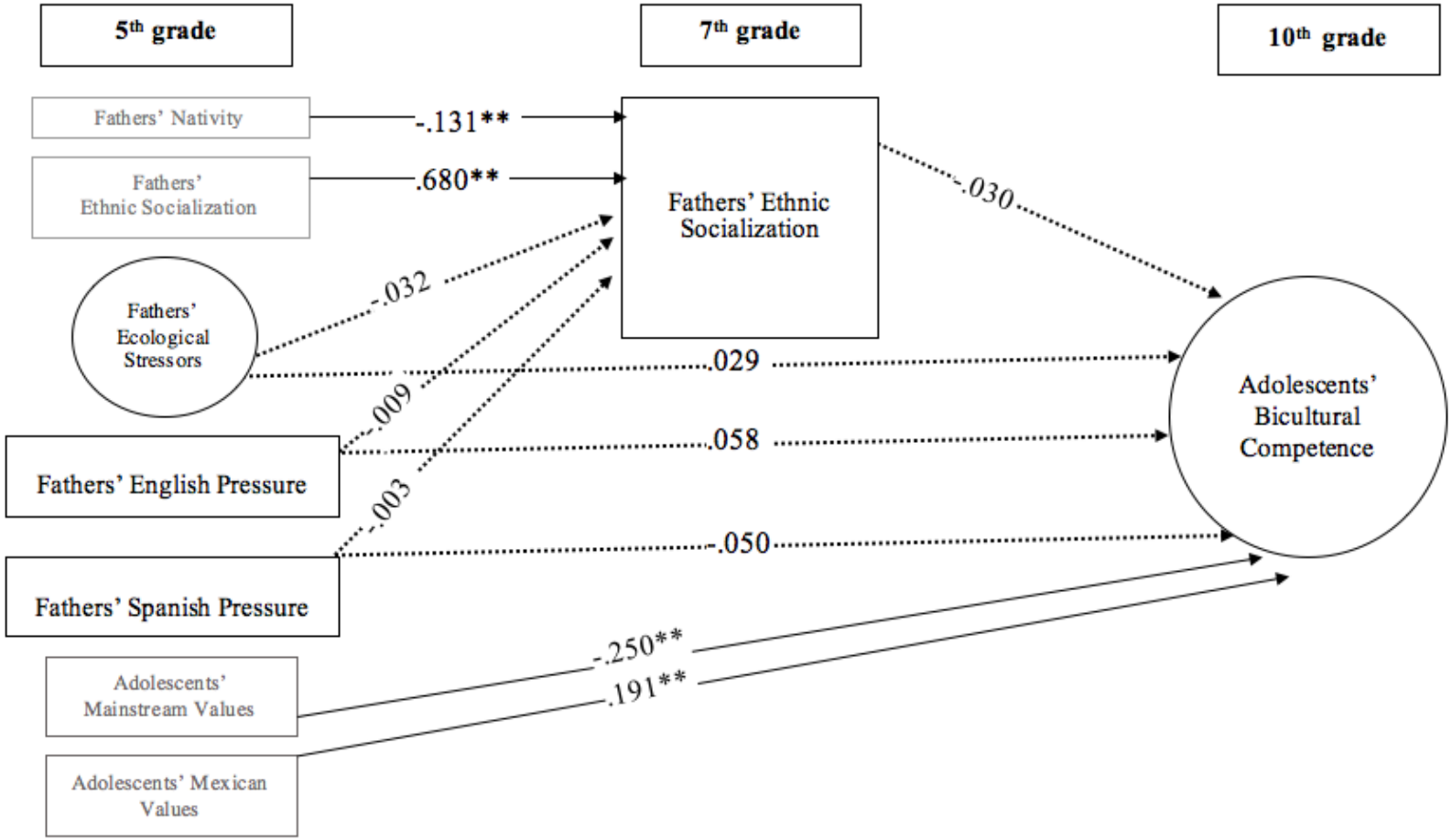


Figure 16. (FINAL MODEL) Test of hypothesized model linking 5th grade fathers' exposure to ecological stressors, English language competency pressures, and Spanish language competency pressures to 10th grade adolescents' bicultural competence via 7th grade fathers' ethnic socialization (n = 579). Completely standardized coefficients are reported. Nativity is coded (0 = Mexico born; 1= U.S. born). 5th grade family income is included as an auxiliary variable. Exogenous variables are allowed to correlate for missing data estimation. Solid lines represent significant paths. Dash lines represent non-significant paths ($p > .05$). Grey boxes represent covariates. Model fit: $\chi^2(28) = 25.295$, $p = .612$; CFI = 1.000; RMSEA = .000, SRMR = .025.

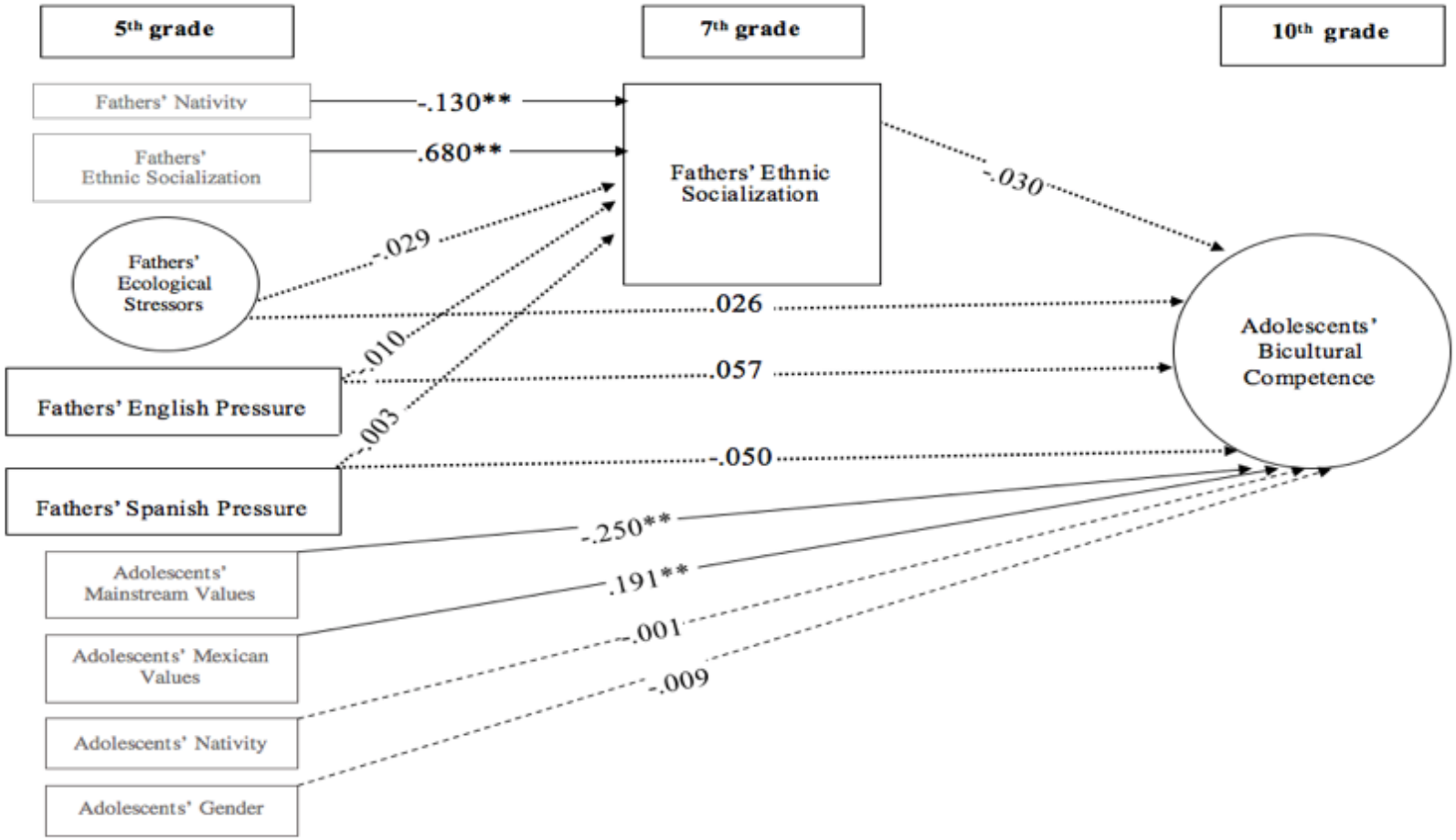


Figure 17. Test of hypothesized model linking 5th grade fathers' exposure to ecological stressors, English language competency pressures, and Spanish language competency pressures to 10th grade adolescents' bicultural competence via 7th grade fathers' ethnic socialization with adolescents' gender and nativity covariates (n = 579). Completely standardized coefficients are reported. Gender is coded (0 = male; 1= female). Nativity is coded (0 = Mexico born; 1= U.S. born). 5th grade family income is included as an auxiliary variable. Exogenous variables are allowed to correlate for missing data estimation. Solid lines represent significant paths. Dash lines represent non-significant paths (p > .05). Grey boxes represent covariates. Model fit: $\chi^2(36) = 29.834$, p = .756; CFI = 1.00.