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Socio-Emotional Development in the Context of Close Relationships:
The Role of Culture

A dissertation submitted in partial satisfaction of the requirements
for the degree Doctor of Philosophy

in

Psychological Sciences

by

Carmen Kho

Committee in charge:

    Professor Alexandra Main, Chair
    Professor Matthew Zawadzki
    Professor Keke Lai

2020

The Dissertation of Carmen Kho is approved, and it is acceptable

in quality and form for publication on microfilm and electronically:

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Alexandra Main, Chair

University of California, Merced

2020

Dedicated to all underrepresented minorities in academia,
including international students.

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Acknowledgements

"Whatever you do, do it all for the glory of God." 1 Corinthians 10:31

I thank God for an amazing graduate journey. This journey would not have been possible without the hearts and minds of these individuals.

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Dr Matthew Zawadzki: My graduate career would not have been the same without you. You never fail to challenge me, to say it as it is, and to nudge me towards the right direction every time I needed a little push. Thank you for taking me under your wing as one of your student collaborators and for believing in my ideas.

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My graduate school support group: Mandy, for being my academic soulmate. From research ideas to inevitable rants to writing time, thank you. Megan, Allison, and Tammy, I would not have survived graduate school without all of you. Sydney, you deserve a special mention for reminding me why I loved research in the first place, for being the best research assistant, and for pushing me to be a better mentor and researcher.

My family: Thank you for believing in my "American dream", and for continuing to support me through financial assistance, prayer, advice, countless facetimes, support, and love when I needed it the most. To my parents, you instilled in me the spirit of hard work and resilience, and for that I am forever grateful.

And finally, Jacob: You believed in me from the very beginning, even when I failed to see the light at the end of the tunnel. Thank you for listening to me talk about my research, for sitting through countless presentation practices, for pushing me to do better, and for constantly reminding me how far I've come. You took the brunt of my stress, yet continued to be my ear, my advocate, and my rock. My graduate journey would not have been possible without your love and support, and for that I cannot thank you enough.

<div align="center">
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EDUCATION

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	Master Thesis: "Acculturation and Parent-Child Sex Communication among Latina Mothers and Children"
	Graduate Advisor: Carl D. Sneed
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2018	Psychological Sciences Summer Support Award [$3960]
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2016	Psychological Sciences Summer Support Award [$4232]
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2009	Overall Achievement Award UCSIU
2008-2010	Dean's List, UCSIU
2006-2010	UCSIU Tun Sri Ahmad Razali Scholarship Award [~$6250]

PUBLICATIONS

Kho, C., Main, A., Chung, S., & Zhou, Q. (2019). Intrusive parenting in Chinese American immigrant families: Relations with cultural orientations and children's adjustment. *Asian American Journal of Psychology.* Advance online publication. DOI: 10.1037/aap0000165 https://psycnet.apa.org/record/2019-41280-001

Main, A., & **Kho, C.** (2019). A relational framework for integrating the study of empathy in children and adults. *Emotion Review.* DOI: 10.1177/1754073919868755 https://journals.sagepub.com/eprint/4QCVXRZVQYSGICVHFKWB/full

Main, A., Walle, E. A., **Kho, C.,** & Halpern, J. (2017). The interpersonal functions of empathy: A relational perspective. *Emotion Review.* DOI:10.1177/1754073916669440 https://escholarship.org/content/qt1nc9w26g/qt1nc9w26g.pdf

Chung, S., Zhou, Q., **Kho, C.,** & Main, A. (in press). Latent profiles of parent-child conflict topics in Chinese American immigrant families with preadolescent children. *Family Process.*

MANUSCRIPTS UNDER REVIEW

Kho, C. & Zawadzki, M. (under review). Does stress generalize across culture?: A Multidimensional and Dynamic Model of Culture and Stress.

Kho, C., Zawadzki, M., & Main, A. (under review). Culture as a dynamic process: How one's social environment predicts moment-to-moment variation in cultural values.

Zawadzki, M., **Kho, C.,** & Small, A. (under review). Applying a cultural lens to understanding the relationship between stress and psychological health.

Hussain, M., **Kho, C**, Main, A., & Zawadzki, M. (under review). Horizontal collectivism moderates the relationship between in-the-moment social connections and well-being among Latino/a college students.

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Kho, C., Main, A., Wiebe, D., Cameron, L., & Raymond, J. (in prep). Parents' and adolescents' empathic accuracy in the context of managing type 1 diabetes.

Kho, C., Zawadzki, M., & Main, A. (in prep). Culture as a dynamic process: Examining associations with stress and health in everyday life

Zawadzki, M. J., Hussain, M., Kho, C., & Ramirez Loyola, M. (in prep). Comparing multidimensional facets of stress with emotional, social, and subjective well-being using ecological momentary assessment.

INVITED TALKS

Kho, C. (March, 2017). Observed psychological control and warmth in Chinese American immigrant families. Talk presented at the Annual Psychological Sciences Symposium at UC Merced.

Kho, C. (October, 2016). Perspectives of the UC Merced student experience: The role of family and culture in social and emotional development. Talk presented at the UC Merced Board of Trustees Meeting, Merced, CA.

CONFERENCE TALKS

Kho, C., Main, A., Wiebe, D., & Cameron, L. (2019). Parents' and adolescents' empathic accuracy in the context of managing type I diabetes. Talk presented at the Society for Research in Child Development biennial conference, Baltimore, MD.

Kho, C., Main, A., Wiebe, D., & Cameron, L. (2019). Parents' and adolescents' empathic accuracy during discussions about coping with type 1 diabetes: Links with individual and relationship characteristics. Talk presented at the Society for Personality and Social Psychology annual conference, Portland, OR.

Kho, C., Zawadzki, M., & Main, A. (2019). <u>Culture as a dynamic process: Examining associations with stress and health in everyday life.</u> Talk presented at the Society for Personality and Social Psychology Health Preconference, Portland, OR.

Kho, C., Main, A., Chung, S., & Zhou, Q. (2018). <u>Parental control in Chinese American immigrant families: Relations with cultural orientations and children's psychological adjustment.</u> Talk presented at the Society for Research on Adolescence biennial conference, Minneapolis, MN.

Kho, C. (2009). <u>Gender differences in moral reasoning among Malaysian undergraduates.</u> Paper presented at International Education Conference (INEC) Malaysia.

CONFERENCE POSTER PRESENTATIONS

Kho, C., Main, A., & Rote, W. (March, 2019). <u>Parental psychological control and adolescents' perceptions of parent-adolescent interactions: The role of relationship quality.</u> Poster presented at the Society for Research in Child Development biennial conference, Baltimore, MD.

Kho, C., Main, A., Yung, S. & Chen, S. (April, 2018). <u>Emotion regulation and stress during emerging adulthood in first generation college students: The role of culture.</u> Poster presented at the Society for Research on Adolescence biennial conference, Minneapolis, MN.

Johnston, S., Main, A., Disla, J., Kho, C., & Campbell, K. (April, 2017). <u>Associations between familism and quality of interaction with primary caregivers across Hispanic and non-Hispanic white emerging adults.</u> Poster presented at the Society for Research in Child Development biennial conference, Austin, TX.

Zawadzki, M., Kho, C., & Small, A. (March, 2017). <u>Applying a cultural lens to understanding the relationship between stress and psychological health.</u> Poster presented at the American Psychosomatic Society annual scientific meeting, Sevilla, Spain.

Kho, C., & Main, A., & Zhou, Q. (January, 2017). <u>Relations of culture and psychological control to pre-adolescents' adjustment in Chinese American immigrant families.</u>

Poster presented at the Annual UC Merced Symposium on the Child and Family, Merced, CA.

Kho, C., & Main, A., & Zhou, Q. (March, 2016). <u>Relations of culture and psychological control to pre-adolescents' adjustment in Chinese American immigrant families.</u> Poster presented at the Society for Research on Adolescence biennial conference, Baltimore, MD.

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Graduate Teaching Fellow, University of California, Merced
- Analysis of Psychological Data (PSY 10) - Fall 2019
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Graduate Teaching Assistant, University of California, Merced
- Social Psychology (PSY 156) – Spring 2017
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- Abnormal Psychology (PSY 142) – Fall 2017
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2020	Graduate Student Panel Member, Psychological Sciences Graduate Visitation, UC Merced
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2017-2018	GRAD-EXCEL Mentor Fellow, UC Merced (Mentoring first-year graduate students)
2017	Organizing committee, Annual UC Merced Symposium on the Child and Family, UC Merced
2017	Mentored reviewer, SRCD Biennial Meeting April 2017
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2016	Mentored reviewer, SRCD Special Topics Meeting October
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Health Psychology Workshop: A Statistical Mediation Analysis with Intensive
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Abstract of the Dissertation

Socio-Emotional Development in the Context of Close Relationships:
The Role of Culture
Carmen Kho
Doctor of Philosophy, Psychological Sciences
University of California, Merced 2020
Committee Chair: Alexandra Main

Culture plays an important role in socio-emotional development. Within the context of close relationships, culture can influence the way we think about and relate to others. However, the transactional associations between close relationships and culture may differentially influence socio-emotional development at different developmental stages. Moreover, existing literature on culture and socio-emotional development lack ecologically-valid measures and rarely take into account the element of time. The goal of this dissertation is to examine how cultural factors may affect socio-emotional development by (i) using ecologically valid approaches and (ii) taking into account the element of time. Study I examined the relations between cultural orientations, intrusive parenting, and child adjustment in Chinese American immigrant families. Participants were Chinese American children and their parents from first- and second-generation immigrant families. Observed intrusive parenting behaviors were coded from videotaped parent–child conflict discussions. Findings indicated that there was a unique positive association between child Chinese orientation and child-reported intrusive parenting, a unique negative association between parents' American orientation and child-reported intrusive parenting, and a unique positive association between child American orientation and observed intrusive parenting. Intrusive parenting was negatively associated with child adjustment, but associations varied depending on measurement. Findings suggest that different measures of intrusive parenting are differentially associated with children's adjustment in Chinese American immigrant families. Study II expanded upon the findings of Study I to examine culture and socio-emotional development within a different developmental period and a different cultural context. Specifically, Study II examined endorsement of cultural values in Latinx emerging adults using an intensive longitudinal design. Participants reported on their cultural values, social environment, and socio-emotional wellbeing twice a day for 14 consecutive days. Using multilevel modeling, findings suggest substantial variation of cultural values at the within-person level. Follow-up analyses indicated that facets of the social environment, including occurrence of social interaction, who the interaction person was, quality of social interaction, closeness of relationship, and belongingness were consistently associated with interdependent, but not independent values. Furthermore, interdependent values were associated with better socio-emotional wellbeing in Latinx college students, but this pattern was not found for independent values. These findings highlight the need to study changes in culture as a function of the social environment, and the need to measure culture using ecologically valid measures that allow for more sensitive and dynamic assessments. Taken together, this dissertation presented testable, hence replicable means to examining the complex relationships between the macrosystem (culture), the microsystem (close relationships), and the chronosystem (time).

Chapter 1: General Introduction

Close relationships have important implications for our socio-emotional wellbeing (Reis, 2012) and may take different forms throughout the lifespan. For example, parents and family typically represent the most significant relationships for a young child, but this social circle may expand to include peers and romantic partners as the child transitions into adolescence and adulthood. Drawing upon the bioecological model (Bronfenbrenner, 2001), the transactional influence between close relationships and socio-emotional development cannot be understood without also considering the cultural context. Incorporating culture into our understanding of close relationships will help inform the intersectionality of these important contextual factors and its impact on socio-emotional development (Campos & Kim, 2017). In the following sections, I first outline the theoretical framework that guided this dissertation. Then, I provide a brief overview on existing work and identify two main gaps in the literature. Finally, I describe the current studies included in this dissertation.

Theoretical Framework

This dissertation is grounded in the bioecological theory of human development as first proposed by Bronfenbrenner in 1977 (Bronfenbrenner, 1977). The bioecological model is made up of a series of complex, interdependent systems (e.g., the microsystem, mesosystem, exosystem, macrosystem) that interact to impact human development (Bronfenbrenner, 1977). In what follows, I will focus on the microsystem and macrosystem components of the bioecological model. The innermost system is the microsystem which includes the individual's relationships and interactions with their immediate surroundings, including, but not limited to, family, friends, and romantic partners. The macrosystem, which is the outermost system, includes cultural values, customs, laws, and resources.

As is the case with many theories, the bioecological theory has continued to evolve since it was first introduced, but it is also this recurrent transformation that led to conceptual confusion and inaccurate application of the theory. Indeed, Tudge and colleagues examined a total of 45 published articles that have referenced the Bronfenbrenner's theory between 2001 and 2015, and found that only 6 out of these articles appropriately described, tested, and evaluated the most recent version of the bioecological theory, while others relied on the outmoded versions of the theory (Tudge et al., 2016; Tudge, Mokrova, Hatfield, & Karnik, 2009). To this end, it is important to note that this dissertation is based on the more recent version of this theory (Bronfenbrenner, 2001). Specifically, this version of the bioecological model acknowledges the element of time (addition of the chronosystem) as well as the active role of the individual in affecting one's course of development, a mechanism termed proximal processes (for a review on the development of the bioecological theory, see Rosa & Tudge, 2013).

Proximal processes are the epicenter of the bioecological theory and are viewed as the central driving forces of human development. Briefly, proximal processes refer to a complex and transactional interaction between an individual and their context and immediate environment, that takes place regularly over time (Bronfenbrenner & Ceci, 1993). As such, it is reasonable to expect proximal processes to take place within the context of close relationships. In sum, the bioecological model provides a strong foundation for examining the interface between culture and close relationships (parents, peers, romantic partners, etc.) and its influence on socio-emotional development.

Social Emotional Development and Close Relationships

Social and emotional development includes a child's experience, expression, management of emotions, and the ability to establish positive and rewarding relationships with others (Cohen, Onunaku, Clothier, & Poppe, 2005). These skills develop from birth through consistent and repeated interactions with others. A healthy socio-emotional development unfolds over time within a transactional context between the individual and the environment. Therefore, one's socio-emotional wellbeing at a given time may represent building blocks necessary for a healthy socio-emotional development. Socio-emotional wellbeing represents an umbrella term focusing on the myriad of psychosocial and emotional health of an individual. Importantly, one's socio-emotional wellbeing at any given point in time contribute to the overall trajectory and course of socio-emotional development.

I use the term close relationships to refer to the immediate social environment and interpersonal relationships with whom an individual regularly comes into contact. This corresponds to the microsystem as outlined in Bronfenbrenner's bioecological model (2001). Close relationships make take different forms at various developmental periods, sometimes termed as *age-salient relationships* (Englund, Kuo, Puig, & Collins, 2011). For example, parents and caregivers may be the most salient close relationships from infancy through childhood and may expand or change to include peers and romantic partners in adolescence and adulthood. As such, studies focusing on close relationships have been conducted examining a myriad of constructions such as attachment, love, and social networks. Generally, research on close relationships is predicated on the notion that family members, friends, and romantic partners are interdependent relationship entities and that each makes a distinct contribution to socio-emotional developmental outcomes (Laursen & Bukowski, 1997).

Despite taking various forms at different developmental stages, close relationships have important implications for social and emotional development throughout the lifespan. For instance, studies have demonstrated that infants who are securely attached to their parents/caregivers evident generally better socio-emotional outcomes (e.g., Bowlby, 1973), and parenting dimensions are significant predictors of socio-emotional adjustment in children and young adults (e.g., Pinquart, 2017; Mattanah, Lopez, & Govern, 2011). In addition to parents, the ability to form meaningful relationships with others have been shown to impact socio-emotional wellbeing in adolescents (Buhrmester, 1990) and college students (Rankin, Paisley, Mulla, & Tomeny, 2018). Additionally, in a longitudinal study focusing on various close relationships throughout the lifespan, Englund and colleagues found that quality of age-salient relationships during different developmental periods not only predicted the quality of subsequent relationships, but also showed links with adaptive functioning in early adulthood, emphasizing the long-term effects of close relationships on socio-emotional development (Englund et al., 2011). Similarly, multiple other studies have highlighted the longitudinal effect of parent-child relationships on adjustment and functioning in adulthood (e.g., Mallers, Charles, Neupert, & Almeida, 2010). Taken together, these studies point toward close relationships as a significant context in which socio-emotional development should be examined.

The Role of Culture

According to the bioecological model, the transactional relationship between close relationships and socio-emotional development is situated within a larger, socio-cultural context. Culture is defined as a dynamic information system of both explicit and implicit rules, involving attitudes, values, beliefs, norms, and behaviors, shared by a group and transmitted across generations, that allows the group to meet basic needs of survival (Matsumoto, 2007). This definition highlights that culture serves an important function of adaptability, able to change and evolve over time and across individuals.

Culture can influence the type and nature of close relationships by shaping how people think, feel, and behave as well as how one expects others to think, feel, and behave in relationship contexts (Markus & Kitayama, 1991; Triandis, 1995). Previous studies have often noted that individuals taken into account various kinds of cultural norms and expectations, including their own preferences within the context of close relationships (e.g., Weisner, 2014). Indeed, research has demonstrated that culture influences how people form, maintain, and terminate their close relationships, including relationships with family, partners, and friends (e.g., Hashimoto, Mojaverian, & Kim, 2012; Schug, Yuki, & Maddux, 2010). These cross-cultural differences may be attributed to a wide range of mechanisms such as cultural divergence in interpersonal stressors and friction (Hashimoto et al., 2012) or self-disclosure to close friends (Schug et al., 2010). A great deal of research has focused on the impact of culture on socio-emotional development (e.g., Savina & Wan, 2017). Most importantly, studies have shown that culture can intersect with close relationships, such as parenting, to impact socio emotional development (e.g., Lansford et al., 2018). More recently, studies have argued that culture should not be viewed separately from the proximal processes given its significance in everyday interactions including language and communication (Vélez-Agosto, Soto-Crespo, Vizcarrondo-Oppenheimer, Vega-Molina, & García Coll, 2017). Taken together, this prior work highlights the importance of culture in understanding the links between close relationships and socio-emotional development.

Limitations of Existing Research

Generally, the prior work presented above highlights two main gaps in the literature. First, most research lack ecologically valid measures in assessing culture, close relationships, and socio-emotional development. For example, most studies on parenting behaviors and child adjustment have relied heavily on self-report measures, which may be problematic due to reporter bias. To this end, it is imperative to include a multi-method approach where applicable. A multi-method approach to research can help provide a more well-rounded examination of the variables of interest.

Second, these studies offer a limited view on the element and role of time. Although Bronfenbrenner states that studies focusing on development should be ideally longitudinal and take into account the sociocultural history of events, this notion is not always translated into research (Tudge et al., 2009). Importantly, there are different ways to conceptualize and measure time. In addition to longitudinal research that takes place over the course of years and developmental stages, changes can also take place on smaller timescales (e.g., day to day or moment to moment). An example of this micro-level of development is the real-time interactions that take place in everyday life, such as parent-child interactions.

Current Studies

Taking into consideration the identified gaps, I aim to examine the interface of culture and close relationships on the socio-emotional development during two different development periods: late childhood and emerging adulthood. Although development is a continuous process throughout the lifespan, these developmental periods may be particularly important to examine due to the higher amount of changes and life transitions that may take place during these stages. Specifically, this dissertation examined the relationship between contextual factors and how they are associated with socio-emotional development by (i) using ecologically valid approaches in addition to self-report measures and (ii) taking into account the element of time. Findings could not only help guide intervention and policy aimed at helping children and emerging adults navigate the demands of culture and close relationships, but also to enrich our understanding of what demands and needs these developmental periods entail to achieve adaptive socio-emotional wellbeing.

In the subsequent chapters I examine the interface between culture and close relationships on development through two separate but related projects. In the first study, I examine the links between parent-child cultural orientations, parenting behaviors, and child's socio-emotional adjustment in a sample of Chinese American immigrant children and their families using path model analysis. Using a multi-method approach, intrusive parenting was measured using parent's self-report, child's self-report, and observed during a conflict discussion task. This observational method to measuring parenting behaviors examines parenting during real-time interactions between parents and children and offers a more ecologically valid approach to understanding parenting behaviors in the context of parent-child interactions than most studies in this area. Similarly, this study also uses a multi-informant approach including parent- and child-reports on parenting behaviors, and parent- and teacher-reports on child's socio-emotional adjustment. I hypothesize that parents' and children's Chinese orientation would be associated with higher levels of intrusive parenting, whereas American orientation would be associated with lower levels of intrusive parenting. Second, I hypothesize that higher levels of intrusive parenting would be associated with higher child maladjustment (higher internalizing and externalizing problems).

In the second study, I examine culture, close relationships, and socio-emotional wellbeing in everyday life over a two-week period. I expand close relationships to include friends, peers, and romantic partners, and examine how these factors are associated with social and emotional adjustment in emerging adults. Specifically, using an ecological momentary assessment (EMA) approach, endorsement of cultural values, aspects of social environment, and socio-emotional wellbeing are measured twice a day for 14 consecutive days. The goals of this intensive longitudinal study are three-fold. First, because culture has never been tested using an EMA approach, this study aims to test the potential fluctuations of cultural values and provide evidence that endorsement of independent and interdependent values does fluctuate within person. Secondly, using a multilevel modeling approach, this study tests the associations between social environment and endorsement of cultural values in the moment. Specifically, I hypothesize that aspects of the social environment (occurrence of social interactions, person of interaction, quality of interaction, perceived closeness of relationship, and sense of belongingness) may differentially predict

endorsement of independent and interdependent values. Finally, this study aims to tests the associations between endorsement of cultural values and socio-emotional wellbeing (sadness, happiness, anxiety, worry, rumination, loneliness, and stress).

Chapter 2: Culture and Parenting
Introduction

Following Amy Chua's (2011) controversial memoir on tiger mothers, parenting behaviors of Asian American families continue to receive a great deal of attention in the parenting literature. In recent years, researchers have focused on identifying the specific parental behaviors (e.g., intrusive parenting) that are associated with tiger parenting (see Juang, Qin, & Park, 2013 for a review). However, there remain gaps in our understanding of intrusive parenting in Asian American families. Particularly, researchers have largely focused on: (a) comparing between Asian American and European American families, with limited studies focusing on within group variability, and (b) the educational achievement as an outcome of interest and the development period of adolescence, with fewer studies examining the psychosocial wellbeing of children (Juang et al., 2013). Using a multi-method and multi-reporter approach, the present study examined links between parent and child cultural orientations (American and Chinese orientations), intrusive parenting (observed, parent, and child report), and children's adjustment (parent- and teacher-reported internalizing and externalizing problems) in a sample of first- and second-generation Chinese American children and their parents from immigrant families.

Intrusive Parenting and Child Adjustment

Intrusive parenting refers to manipulative and inhibiting parental behaviors that negatively affect children's healthy development (Barber, 2002). Studies on parenting have operationalized intrusive parenting in different ways and have thus used a myriad of terms to refer to parenting behaviors considered intrusive. For example, Barber and Harmon (2002) focused on psychological control (i.e., parental behaviors that intrude upon the child's emotions and thoughts) as central to intrusive parenting. Intrusive parenting has also been described as reflecting "controlling" (Grolnick & Pomerantz, 2009) and "authoritarian" parenting styles (Baumrind, 1971). Authoritarian parents may use fear to elicit obedience and compliance in children (Darling & Steinberg, 1993). Consistent with the hypothesis that intrusive parenting limits children's healthy autonomy development, intrusive parenting has been linked to children's maladjustment, including higher internalizing problems (Grolnick & Pomerantz, 2009; Soenens, Park, Vansteenkiste, & Mouratids, 2012), higher externalizing problems (Rathert, Fite, & Gaertner, 2011; Nelson, Hart, Yang, Olsen, & Jin, 2006), lower self-esteem (Nguyen, 2008), and lower academic achievement (Chen, Dong, & Zhou, 1997).

Intrusive Parenting in Chinese American Immigrant Families: Cultural Considerations

Culture shapes the way parents and parenting concepts are constructed, which may in turn affect parenting behaviors (Bornstein, 2012). Similarly, culture can shape children's perceptions of parenting behaviors. Hence, the definition and meaning of intrusive parenting behaviors is largely dependent on culture (Kağitcibaşi, 2007). As such, immigrant families provide a unique context for studying associations between intrusive parenting and children's adjustment because children and parents often experience challenges while navigating between the demands of their heritage and host cultures. Specifically, immigrant families are exposed to new cultural values surrounding parenting practices to which they may feel pressure to *acculturate* (i.e., adapt to the host culture), but

meanwhile, they may also feel compelled to *maintain* parenting practices of their heritage culture (Tsai & Chentsova-Dutton, 2002).

The associations between intrusive parenting and child adjustment in non-Western cultural contexts remain poorly understood. On the one hand, scholars have proposed that concepts such as "authoritarian" and "controlling" parenting may have different implications for Chinese families compared with Western families (Chao, 1994), and that Baumrind's authoritative parenting model may not represent the optimal parenting style in collectivistic cultures (Chao & Tseng, 2002). In this vein, studies show that native Chinese parents reported higher authoritarian parenting compared to Chinese American parents (Chen, Sun, & Yu, 2017), and Asian American families endorsed more authoritarian parenting than European American families (Pong, Hao, & Gardner, 2005). On the other hand, researchers found that despite cultural differences in the frequency of different parenting practices, authoritative parenting, and not authoritarian parenting, is associated with optimal developmental outcomes in Chinese and Chinese American children. Specifically, in a sample of urban Chinese families, adolescents of authoritative mothers exhibited the best overall adjustment, while adolescents of authoritarian mothers showed the worst adjustment (Zhang, Wei, Ji, Chen, & Deater-Deckard, 2017). Similarly, within Asian American families, harsh parenting is associated with adolescents' poorer psychological functioning (Kim, Wang, Orozco-Lapray, Shen, & Murtuza, 2013; Nguyen, 2008). Taken together, these studies suggest that despite the cultural difference in prevalence of intrusive parenting, its detrimental effects on children's adjustment are similar across cultures.

Typically, Chinese American parents have been portrayed as more authoritarian in their parenting (e.g., Steinberg, Lamborn, Dornbusch, & Darling, 1992) and endorse higher levels of controlling parenting practices when compared to other ethnic groups (e.g., Luk, King, McCarty, Vander Stoep, & McCauley, 2016). However, less is known about factors that may be associated with within-group differences in intrusive parenting among Chinese immigrant families. Previous studies suggested that parents' cultural orientations may play a role because parenting values may influence parenting behaviors (Friedlmeier, Corapci, & Cole, 2011) and cultural values can vary considerably within immigrant populations (Phinney, Ong, & Madden, 2000). Indeed, higher levels of acculturation have been linked to lower levels of inconsistent and harsh discipline in Chinese immigrant parents (Liu, Lau, Chen, Dinh, & Kim, 2009). Moreover, higher acculturation has been associated with Chinese American mothers' better psychological well-being, which in turn predicted higher levels of authoritative parenting and lower levels of authoritarian parenting (Yu, Cheah, & Calvin, 2016). Collectively, these studies support the links between parents' cultural orientations and parenting behaviors.

In comparison to literature on parental cultural orientations and its associations with parenting and child adjustment, less is known about children's cultural orientations and their associations with parenting and child adjustment. A notable exception would be a study conducted by Chen and colleagues (2014), in which they found that parent-reported children's American orientations were associated with better psychological adjustment and this association was mediated by parents' higher use of authoritative parenting. However, most of the aforementioned research has relied solely on parent and child report of parenting behaviors and child adjustment. It remains unclear whether parents' actual

display of intrusive behaviors in parent-child interactions is associated with children's adjustment in Chinese American immigrant families. Thus, the present study utilizes a multi-method approach, including child and parent report as well as observational measures, to provide a fuller picture of intrusive parenting in Chinese American families. Finally, most studies examining intrusive parenting have focused on adolescents. The present study examines children in late childhood, a period in which children are beginning to engage in more autonomy seeking (Freitag, Belsky, Grossmann, Grossmann, & Scheuerer-Englisch, 1996). Studying the links between intrusive parenting and adjustment in late childhood has important implications for preventive interventions that protect against maladaptive conflict and later adjustment problems.

The Present Study

The present study examined the relations of cultural orientations to multiple measures of intrusive parenting in first- and second-generation Chinese American immigrant parents and their children. Specifically, I examined the concurrent associations between parents' and children's cultural orientations to American and Chinese culture with observed and parent- and child-reported intrusive parenting. I hypothesized that parents' and children's Chinese orientation would be associated with higher levels of intrusive parenting, whereas American orientation would be associated with lower levels of intrusive parenting. Second, I examined the relations of intrusive parenting to children's adjustment (parent- and teacher-reported internalizing and externalizing problems). I hypothesized that higher levels of intrusive parenting would be associated with higher child maladjustment (higher internalizing and externalizing problems). Although cross-sectional data is not ideal for testing mediation, I further tested whether intrusive parenting mediated the link between cultural orientations and child adjustment. Finally, based on the well established links of socioeconomic status (SES) to parenting and child outcomes (Bradley & Corwyn, 2002), family SES was included as a covariate along with parent's gender, parent's preferred language, child age, and child's gender.

Method

Participants

Participants were 239 Chinese American children (48.1% female, *M* age = 9.19 years, *SD* = 0.73, range = 7.49 to 10.96 years), their parents (81.3% mothers), and teachers. The sample was part of a longitudinal study examining psychological, social, and academic adjustment of first- (24.2%) and second-generation (75.8%) Chinese American children. The following conditions were set as eligibility criteria for the study: (a) the child was in first or second grade at the time of screening, (b) the child lived with at least one of her/his biological parents, (c) both biological parents identified as ethnic Chinese, (d) the child was either first generation (born outside the U.S.) or second generation (born in the U.S. with at least one foreign-born parent), and (e) both the parent and child were able to speak English or Chinese (Mandarin or Cantonese). Of this sample, 76.2% of parents were born in mainland China, 9.1% were born in Hong Kong, 3.2% were born in Taiwan, and 11.5% were born in other countries. On average, parents had lived in the U.S. for more than 1 decade (range 1 to 38 years, *M* = 11.8 years).

Parents' years of school education ranged from 5 years (elementary school education) to 20 years (doctorate or other advanced degree) (*M* = 13.3 years, *SD* = 2.44 years). More than half (63.0%) of parents were employed full time. Families' per capita

income was calculated by dividing the total family income for the past year by the number of individuals living in the household. Families' estimated median income for the past year was $37,500 (range $5,000 to $100,000, M = $47,020, SD = $30,106.40). Most parents (88.7%) were married and living within the same household as their spouse. Number of other children in the same household ranged from 0 to 6 persons (M = 1.07, SD = 0.72), and number of adults within the same household, including the non-participating parent, ranged from 0 to 4 persons (M = 1.35, SD = 1.04). This paper used data collected from the second wave of assessment because the conflict discussion during which observed intrusive parenting was coded was only collected at Wave 2. Most of the children were in third (45.6%) or fourth (47.7%) grade, and the remaining children were in either 2nd grade (2.9%) or 5th grade (3.8%). After obtaining approval from the university institutional review board, the sample was recruited using a variety of methods including through schools and seeking referrals from community organizations (see Chen et al., 2014).

Procedures

The child and one parent participated in a 2.5-hour laboratory assessment, which included a child interview, cognitive-behavioral tasks, a parent interview and questionnaire session, and parent-child interaction tasks. All questionnaires and interviews were administered separately for parent and child in their preferred language indicated at the beginning of the visit. All written materials were available in English, simplified Chinese, or traditional Chinese. Most parents (75.6%) completed the questionnaires in Chinese and all the children completed the assessment in English. A trained research assistant usually did the first few questions in each scale together with the child. Then, the child filled out the rest of the items in that scale by him/herself, but the research assistant was available if the child had questions. After the lab visit, the child's classroom teacher was asked to complete the questionnaires by mail. Parents were paid $50 and children received small prizes. Teachers were paid $25 for filling out the survey for each child.

Measures

The present study used data collected from parent, teacher, and child questionnaires and an observed parent-child conflict discussion task.

Demographic characteristics (parent report). The Family Demographics and Migration History Questionnaire was used to assess family demographic characteristics. The scale used in the present study was adapted from a measure used in a study of Mexican American immigrant families (Roosa et al., 2008). The demographic variables included in the present study are: family SES (computed as the averages of standardized scores from paternal and maternal level of education and family income), parent's gender, child gender and age.

Parent and child cultural orientations (parent and child report). Parents and children reported on their own orientations toward American and Chinese cultures using the Cultural and Social Acculturation Scale (CSAS; Chen & Lee, 1996; see also Chen & Tse, 2010). The CSAS is a bi-dimensional scale that assesses individuals' contact with and engagement in both the heritage (Chinese) and host (American) cultures. The CSAS assesses parents' and children's bi-dimensional cultural orientations in three domains: language proficiency (e.g., "How well do you/does your child speak Cantonese or Mandarin/English?"; 1 = *extremely poor*, 5 = *very good*), media use (e.g., "How often do you/does your child watch Chinese/English movies?"; 1 = *almost never*, 6 = *almost*

everyday), and social relationships (e.g., "How often do you/does your child invite Chinese/Caucasian-American friends to your house?"; 1 = *almost never*, 5 = *more than once a week*). The alphas for parents' cultural orientations were .79 and .75 for the American and Chinese orientation subscales, and the alphas for child cultural orientations were .68 and .72 for the American and Chinese subscales, respectively. The composites for American and Chinese orientation were computed as the averages of standardized scores in the corresponding subscales.

Intrusive parenting. Parents and children reported on intrusive parenting using the 11-item Maternal Psychological Control Scale (Olsen et al., 2002). The scale was suitable for both mothers and fathers due to its gender-neutral wording, and the items were reworded to be appropriate for children. The scale assesses intrusive parenting on a scale of 1 (*never)* to 5 (*always*), including personal attack (e.g., "I bring up child's past mistakes when criticizing him/her", "S/he brings up my old mistakes when criticizing me"), erratic emotional behavior (e.g., "I change mood when with my child", "S/he changes mood when s/he is with me"), guilt induction (e.g., "I tell my child that he/she should be ashamed when he/she misbehaves", " S/he tells me that I should be ashamed or feel bad about myself when I misbehave or am naughty"), and love withdrawal (e.g., "I am less friendly with my child when my child does not see things my way", "S/he is less friendly with me when I do not see things his/her way"). The alphas for parent- and child-reported intrusive parenting were .85 and .84 respectively.

Observed intrusive parenting. As part of the lab assessment, parents and children separately completed a checklist to identify the topics they most frequently argued about in the past month (a modified version of the Issues Checklist by Prinz, Foster, Kent, & O'Leary, 1979). Topics include: (1) Cleaning up/Chores, (2) Free Time, (3) Family Rules, (4) Appearance/Health, (5) Respect/Manners, (6) Noise, (7) How Family Gets Along, (8) Supervision, (9) Money, (10) Alcohol or Smoking, (11) School, (12) Extracurricular Activities, and (13) Traditional Chinese Values. For each issue, parents and children separately rated whether they had argued about that topic in the past month, and if yes, how upsetting the issue was on a scale of 1 (*slightly upsetting*) to 5 (*very upsetting*). In this sample, the top five topics endorsed by parents are: respect/manners ($M = 2.36$), free time ($M = 2.22$), family rules ($M = 2.13$), cleaning up/chores ($M = 1.94$), and appearance/health ($M = 1.69$). The top five topics endorsed by children are: schools ($M = 1.69$), family rules ($M = 1.62$), respect/manners ($M = 1.52$), cleaning up/chores ($M = 1.36$), and extracurricular activities ($M = 1.34$). The topics that received the largest summed rating from both parents and children were discussed for 8 minutes in a private videotaped discussion.

Prior to coding, the lead author and Chinese-speaking undergraduate research assistants viewed several videos to develop a coding scheme for intrusive parenting behaviors. The observers were all fluent in Chinese (Mandarin and Cantonese) and had cultural knowledge and experience with Chinese culture. Barber's (1996) Psychological Control Scale – Observer Report was used as a guide in developing the coding scheme. Based on the observation of the videos and the theoretical conceptualization of intrusive parenting behaviors, the following five behaviors were determined to be indicative of intrusive parenting within the context of the parent-child conflict discussion task: dominating the conversation (e.g., parent raising his/her voice, "Stop, let me finish first!"), interrupting the child (i.e. not allowing the child to voice opinions), invalidating the child

(e.g., "What you think about this is not important"), personal attack (e.g., "You're so lazy!"), and guilt induction (e.g., "You know this makes mummy feel very sad").

Once the coding scheme was developed, intrusive parenting behaviors were assessed by two independent observers. First, each observer viewed the interaction once without assigning any codes to get an overall feel for the conversation. Observers then coded for intrusive parenting every 30 seconds on a scale of 0 (*not true*) to 3 (*very true*) across the 8-minute interaction, taking into account both the frequency and intensity of the intrusive behavior. Coders were instructed to consider both verbal statements as well as nonverbal (e.g., glaring, negative affect) aspects of intrusive parenting. Scores for intrusive parenting were computed by averaging these ratings across the entire interaction. To establish inter-rater reliability, the lead author trained bilingual Chinese American research assistants to reliably code 10 videos to ensure consistent application of code definition. After satisfactory reliability ($r > .80$) had been reached, the main coder independently coded all the videos and the reliability coder coded approximately 30% of all videos. Given the ordinal nature of the coding scale, intra-class correlations were used to calculate inter-rater reliability. A total of 33 videos were excluded from analysis: Twenty-three participants did not complete the discussion, whereas the remaining 10 videos were excluded due to the language/dialect (e.g. Taishanese) that was not understood by the observers.

Child adjustment (parent and teacher report). Parents completed the internalizing (e.g., "Complains of loneliness") and externalizing (e.g., "Argues a lot") problem subscales of the Child Behavior Checklist during the lab visit (CBCL; Achenbach & Rescorla, 2001), and teachers completed the Teacher Report Form via mail (TRF; Achenbach & Rescorla, 2001). Both the CBCL and TRF have similar structures and the items on the internalizing and externalizing subscales are identical. Items on both CBCL and TRF are scored on a Likert scale from 0 (*not true*) to 2 (*very true/often true*). The Chinese versions of the CBCL and TRF internalizing and externalizing subscales have demonstrated good internal consistency (αs > .80) and test-retest reliability (rs > .80) in Chinese American children (Chen et al., 2014). In the present sample, the alphas were .90 and .90 for parent and teacher report of internalizing problems, and .99 and .87 for parent and teacher report of externalizing problems, respectively.

Results

All analyses were conducted using SPSS and Mplus 7.4 statistical software (Muthen & Muthen, 2017). All the reported continuous study variables were normally distributed, except for teacher-reported externalizing problems, which was slightly positively skewed. First, correlations among all study variables were examined. Second, a path analysis was used to test the hypothesized path from parent/child cultural orientations to multiple measures of intrusive parenting, and from intrusive parenting to child adjustment. Demographic variables (family SES, parent's gender, parent's preferred language, child age and gender) were controlled for in the model. The model was tested using full information maximum likelihood to handle missing data and the Maximum Likelihood Robust (MLR) estimator to adjust for standard error estimates due to nonnormality. Descriptive statistics of all variables are presented in Table 1.

Correlation Analyses

Correlations among study variables are reported in Table 2. Here I summarize the correlations that are most relevant to our study hypotheses. First, there was a positive

correlation between observed intrusive parenting and parent-reported intrusive parenting, suggesting some cross-method convergence across reported and observed intrusive parenting behaviors. Second, parents who displayed more intrusive behaviors during the discussion had children with higher parent- and teacher-reported externalizing, but not internalizing, problems. Children with high American orientation had parents who displayed higher intrusive behaviors. Parent-reported intrusive behaviors were positively associated with both parent-reported externalizing and internalizing problems, but not teacher report. Parents' and children's ratings on cultural orientations were significantly correlated on both Chinese and American orientation. Finally, parents' American orientation was positively correlated with family SES.

Path Analysis

A path analysis model was specified to test the hypothesized associations between parent and child cultural orientations, intrusive parenting (parent- and child-reported and observed), and child adjustment (see Figure 1). The tested model showed a good fit to the data, $\chi2$ ($df = 40$, $N = 206$) = 47.73, $p = 0.19$, CFI = 0.97, RMSEA = 0.03, SRMR = 0.04. Consistent with hypotheses, parents who displayed more observed intrusive parenting behaviors reported higher child externalizing problems, indicating poorer adjustment. Additionally, parent-reported intrusive parenting was positively associated with parent-reported, but not teacher-reported, child internalizing and externalizing problems. Parents' American orientation was associated with lower child-reported intrusive parenting, while children's Chinese orientation was positively associated with child-reported intrusive parenting, partially supporting the hypotheses. There was also a significant relation between child's American orientation and observed intrusive parenting, indicating that parents whose children reported higher American orientation displayed higher levels of intrusive parenting during the discussion. Parent gender was associated with parent-reported intrusive parenting, with fathers more likely to report higher intrusive parenting than mothers. Child gender was uniquely associated with observed intrusive parenting, with parents of boys being more likely to display intrusive parenting behaviors compared with parents of girls. Similarly, teachers were more likely to report higher externalizing problems in boys than girls. Interestingly, teacher-reported behavioral problems were associated with higher family SES. Parents who selected English as their preferred language also reported higher child internalizing problems. Based on the significant paths between child American orientation and observed intrusive parenting, as well as between observed intrusive parenting and parent-reported externalizing problems, I tested the significance of indirect effect using the "Model Indirect" command in Mplus 7.4. The indirect effect is marginally significant ($a*b = 0.41$, $p = 0.08$). Thus, observed intrusive parenting marginally mediated the link between children's American orientation and parent-reported externalizing problems.

To explore alternative pathways, I also tested an alternative model (cultural orientations → internalizing/externalizing problems → intrusive parenting). The alternative model fit the data adequately: $\chi2$ ($df = 14$, $N = 206$) = 29.04, $p = 0.01$, CFI = 0.94, RMSEA = 0.069, SRMR = 0.037, though the fit was weaker than the hypothesized model that was tested. I found little evidence for child-driven effects (internalizing/externalizing problems → intrusive parenting), with the exception of a significant positive path from parent-reported child externalizing problems to parent report

of intrusive parenting. No evidence of indirect relations was found. Thus, I discuss the results of hypothesized model in the remainder of the manuscript.

Discussion

To our knowledge, this is the first study to examine relations between observed and reported intrusive parenting behaviors during parent-child interactions with cultural orientations and child adjustment in Chinese American immigrant families. As expected, intrusive parenting was generally associated with poorer child adjustment, though findings varied depending on measurement and reporter. I discuss these findings in detail below.

Relations of Intrusive Parenting to Child Adjustment

Observed intrusive parenting was associated with parent-reported externalizing problems. This is in line with previous studies examining psychological control between Asian and Western cultures (e.g. Soenens et al., 2012), in which the detrimental effects of psychological control were comparable. The lack of association between observed intrusive parenting and teacher-reported child externalizing problems is likely due to the fact that parents who displayed higher levels of intrusive parenting during the discussion were reacting to perceived noncompliance of the child during the discussion. Thus, they were more likely to report their children as higher in externalizing problems. It is also possible that the children with higher levels of externalizing problems are more likely to evoke parents' intrusive behaviors during the discussion. Due to the study's cross-sectional design, I was unable to test for bidirectionality between intrusive parenting and children's adjustment. However, the alternative model I tested suggests there may be some bidirectional associations among the variables. Future research including testing of alternative models with different specified pathways or longitudinal studies can shed light on the directionality of these associations. It is important to consider the context of the discussion, in which most of the topics focused on academics and family rules – topics which Chinese parenting philosophies such as *guan* and *jiao* may be most apparent (Wang, 2016). Parenting behaviors during these discussions may reflect *guan*, which goal is to promote obedience and a sense of familial responsibility that emphasizes academic achievement through parental control and support (Wang & Supple, 2010).

Similarly, parent-reported intrusive parenting was uniquely associated with parent-reported child adjustment. This is consistent with previous work showing that parental psychological control is associated with poorer adjustment across both internalizing and externalizing domains (Barber & Harmon, 2002). These associations were only found for parent-reported intrusive parenting and parent-reported child adjustment, suggesting a possible within-report bias. One probable explanation is that parents and teachers may interpret children's behaviors differently in different contexts. Importantly, there were unique associations between observed intrusive parenting and child adjustment above and beyond parent and child report. This highlights a need for research to incorporate multiple measures and informants as they may tap into differential aspects of parenting. Though there were associations between parent-reported intrusive parenting and observed intrusive parenting, there were no significant associations between parent- and child-reported intrusive parenting. This is consistent with previous research indicating discrepancies between parent and child reports in other areas such as clinical assessments of children's socio-emotional problems (De Los Reyes, 2011). It is also possible that parents and children differed in their perception or understanding of the meaning of intrusive behaviors

(e.g., parenting behaviors viewed as intrusive by the child might be perceived as supportive by the parents). An important area of future research would be to directly assess children's and parents' perceptions or interpretations of *specific* parental behaviors during parent-child interactions. Such an approach would likely reveal the mechanisms through which parental behaviors are differentially associated with children's adjustment.

Cultural Orientations and Intrusive Parenting

In the present sample, parents' and children's American and Chinese orientations were positively correlated with each other, suggesting some similarity in parent and child cultural orientations. Moreover, our preliminary analyses did not find evidence for the relation of parent-child cultural gap (as indicated by parent × child cultural orientation interactions) to intrusive parenting. This may be attributed to the age of children in our sample. Indeed, research has shown that family conflict related to the parent-child cultural gap was associated with negative adjustment in adolescents more strongly during mid- to late-adolescence compared with earlier developmental periods (Juang, Hou, Bayless, & Kim, 2018). Consistent with our hypotheses, parents' American orientation was associated with lower child-reported intrusive parenting. This is aligned with previous research demonstrating that more acculturated immigrant parents engage in higher levels of authoritative parenting practices (Yu et al., 2016). However, there were no significant associations between parents' cultural orientations and parent-reported intrusive parenting. This may be attributed to the way in which cultural orientations were measured in the present study. Specifically, the CSAS may not fully capture the psychosocial aspects of culture that may affect parenting behaviors (e.g., cultural values). Indeed, more recent research has distinguished between behavioral and psychological acculturation. Cheah and colleagues (2018) found that Chinese American mothers' psychological and behavioral acculturation were differently associated with their parenting reasons and practices. Furthermore, the items in the CSAS are limited to specific cultural groups (i.e., social relationships with Caucasian-American friends, and not other ethnicities), which may not be accurate representations of social dimensions in relation to participants' American orientation. Future research may incorporate a wider range of cultural factors, including Chinese values such as Confucianism and filial piety, to better understand links between parents' cultural orientations and parenting behaviors.

In line with our hypotheses, children higher in Chinese orientation rated their parents as higher in intrusive parenting. This is consistent with prior research indicating that native Chinese children generally rated their parents higher in psychological control when compared to American children (e.g., Wang, Pomerantz, & Chen, 2007). Interestingly, parents whose children reported higher American orientation displayed higher levels of intrusive parenting behaviors during the discussion. One possible explanation is that children high in American orientation might have behaved in ways perceived by parents as inappropriate (e.g., talking back), leading the parent to engage in more intrusive behaviors to try to curb the child's misbehavior. Given the transactional nature of socialization (Sameroff, 2009), it is likely that parents' intrusive behaviors were partly in response to children's behaviors during the discussions. Thus, more research is needed that examine the unique roles of parents' and children's cultural orientations in the links between intrusive parenting and child adjustment in immigrant families.

Associations Between Demographic Variables, Intrusive Parenting, and Child Adjustment

There was a unique association between child gender and observed intrusive parenting, with parents of boys being more likely to display intrusive behaviors compared to parents of girls. Several studies have found that parents respond to boys and girls differently in everyday interactions. Clearfield and Nelson (2006) demonstrated that mothers of sons presented higher levels of instruction-type interaction and lower levels of conversation-type interaction when compared to mothers of girls. Our findings are also consistent with a study in which mothers of boys exhibited less sensitivity compared to mothers of girls during observed interactions (Tamis-LeMonda, Briggs, McClowry, & Snow, 2009). Similarly, teachers reported higher levels of externalizing problems for boys compared to girls. This is in line with research suggesting that boys are more likely to exhibit externalizing behavior in early childhood through early adolescence (Blatt-Eisengart, Drabick, Monahan, & Steinberg, 2009). Interestingly, higher family SES was associated with higher teacher reported behavioral problems, and parents' whose preferred language is English also reported higher internalizing problems. Moreover, correlation analyses show that parents who preferred English also report higher family SES. Hence, a possible explanation is that higher-SES families, including parents whose preferred language is English, may have parents who are both working, thereby resulting in less parental control and monitoring. Furthermore, children from higher-SES, English-speaking families may have fewer restrictions and structure due to being in better neighborhoods, which may then subsequently influence their adjustment. More work is needed to better understand the roles of SES and parental language and their links to children's adjustment in immigrant families.

Limitations and Future Directions

The study had several limitations warrant mentioning. First, although the present study is part of a larger longitudinal study, the present analyses were cross-sectional due to the conflict discussion and child-reported cultural orientations only being assessed at one time point. This impedes the possibility of examining causal pathways and how the associations between cultural orientations, intrusive parenting, and child adjustment might change over time. Future research using longitudinal data can provide more robust test of the directional and transactional associations between intrusive parenting and children's adjustment in immigrant families (see Sameroff, 2009). Second, we examined American and Chinese orientation as separate constructs and thus did not examine the influence of biculturalism. Future research could include a biculturalism measure or employ a person-centered approach to better understand the roles of different cultural orientations. Lastly, because the study was conducted in a metropolitan area with a high concentration of Asian American residents, the findings may not generalize to Chinese American immigrant families living in other geographic regions.

Conclusions and Implications

The findings demonstrate that examining intrusive parenting across multiple measures is important for understanding children's adjustment. Our findings suggest cultural universality in some aspects of intrusive parenting, but also the need for a more nuanced approach to understanding the associations between intrusive parenting and child adjustment in Chinese American immigrant families. Our study showed that parental use

of intrusive behaviors and its adverse effects on children's adjustment can be observed even in pre-adolescent years, highlighting the need for early intervention targeting young children of immigrant families. Overall, the findings suggest a need to conceptualize parenting in a cultural framework and target parenting interventions in ways appropriate to the population of interest. Future research may consider focusing on the socialization goals that Chinese American immigrant parents hold, and how they go about achieving these goals through their parenting practices. It is our hope that the present study helps pave the way for future research examining the underlying dynamics between parenting practices and child adjustment in immigrant families.

Chapter 3: Culture in Daily Life
Introduction

Culture has long been identified as factor that can influence one's cognitive processes (e.g., Oishi, Jaswal, Lillard, Mizokawa, Hitokoto, & Tsutsui, 2014), personalities (e.g., Ramírez-Esparza, Gosling, Benet-Martínez, Potter, & Pennebaker, 2006), social relationships (e.g., Rodriguez-Operana, Mistry, & Chen, 2017), and health (e.g., Gallo, Penedo, de los Monteros, & Arguelles, 2009). In this work, culture is typically measured as a static characteristic (trait) and is often assumed based on race/ethnicity or other culturally-focused grouping system (more acculturated vs. less acculturated). This approach is problematic for many different reasons, including the inability to take into account the heterogeneity that exist within cultural groups and the assumed fixed nature of culture within individuals over time (Kho & Zawadzki, under review). Examining culture as a dynamic process allows researchers to better operationalize culture and situate the role of culture in understanding human behavior. Specifically, measuring culture on a shorter time scale, including across moments within days, encourages us to think about culture in terms of beliefs, values, and orientations that are sensitive to change and possess the ability to vary within-person across different situations.

The goals of this study are three-fold: (1) to examine if endorsement of cultural values varies within-person second, (2) to examine what are the social determinants that may influence the variation in culture, and lastly, (3) to test the associations between culture and socio-emotional wellbeing.

The Dynamic Nature of Culture

Culture is a ubiquitous concept and notoriously difficult to define. I adopt the definition presented by Matsumoto (2007), in that culture is a dynamic information system of both explicit and implicit rules, involving attitudes, values, beliefs, norms, and behaviors, shared by a group and transmitted across generations that allows the group to meet basic needs of survival. This definition highlights two important elements of culture – multidimensionality and dynamism, in which I posit are essential, yet understudied aspects of culture in the field of behavioral sciences. In my previous work (Kho & Zawadzki, under review), I proposed a Multidimensional and Dynamic Model of Culture and Stress (MDMCS), in which I highlight the importance of studying culture as a multidimensional and dynamic entity. In extending our work to empirical testing, I contend that one's culture has the potential to change rapidly given contextual and environmental factors.

Although many cultural researchers agree that culture is dynamic and can change over time, the dynamism of culture is commonly underestimated and rarely translated into research practices (Iwelunmor & Airhihenbuwa, 2017). Indeed, many existing approaches to measuring culture reflect an underlying assumption that one's cultural status is relatively stable. For instance, an abundance of studies focusing on levels of acculturation are only be measured at one time point, with inferences drawn from a single measure. In the event where culture is conceptualized as dynamic, studies have typically utilized a multi-wave, longitudinal design over multiple years. This type of longitudinal research is informative and helps illuminate changes of culture across time and generations, but this approach does not provide information as to how these changes may take place on a short-term basis and as a function of one's immediate environment and context.

To this end, there has been a push for cultural research to move beyond measurement of one timepoint, including utilizing intensive longitudinal designs such as Ecological Momentary Assessment (EMA) in capturing short-term fluctuations in culture (e.g., Unger & Schwartz, 2012). Technological assessments such as EMA allows for multiple measurements of culture and takes into account within-person variability. Being able to distinguish between-person and within-person changes may help illuminate long-term trends and short-term fluctuations (Mroczek, Spiro, & Almeida, 2003), both of which are important to consider when examining culture. More importantly, understanding momentary changes in culture can help researchers better situate the role of culture in everyday life.

EMA techniques have been commonly used to measure constructs that may show short-term fluctuations, including physiological processes such as heartrate and blood pressure, as well as psychological processes such as stress and affect (see Smyth & Stone, 2003). However, there is work to suggest that culture can change rapidly on a momentary time-scale. Most notably, prior research on biculturalism has highlighted the ability of bicultural individuals to shift between different interpretive frames rooted in different cultures (Hong, Morris, Chiu, & Benet-Martinez, 2000). Researchers have termed this phenomenon cultural frame switching, which typically happens in response to culturally-relevant cues in the environment. In one of the first studies employing this approach, Hong and colleagues utilized an experimental approach by priming the participants with either American or Chinese cultural icons (e.g., Chinese and American flag). They found that participants demonstrated different cultural behaviors (internal vs. external attribution) depending on which culture was activated through the priming process (Hong et al., 2000; Hone et al., 2001). Other studies have found that switching between cultural frames have important implications for one's behavior, cognition, and even emotional structure. For instance, in a study focusing on East-Asian Canadian individuals, researchers found that cultural identification and recently spoken language influence one's structure of emotion (Perunovic, Heller, & Rafaeli, 2007). Using a daily diary design, when individuals identified with a Western culture or had recently spoken a non-Asian language, their positive and negative affect were inversely associated. In contrast, when they identified with an Asian culture or interacted in an Asian language, this inverse association disappears.

In building upon the cultural frame switching literature, researchers have also examined the antecedents that may lead to the cultural frame switching phenomenon. In a study conducted on bicultural individuals in Germany, researchers have found that perceived group prototypicality played a significant role in cultural identity switching. Specifically, findings indicated that participants use information about cultural prototypicality as a situational cue for switching their cultural identity toward the culture for which they are prototypical at that given moment (Schindler, Reinhard, Knab, & Stahlberg, 2016).Taken together, these studies point towards the potential of culture to change rapidly on a momentary timescale as a function of the context and environment.

Unique Aspects of Latinx Culture

As a proof-of-concept to testing whether culture varies within-person on a momentary level I decided to focus on a single cultural group to better examine within-group differences. Acknowledging and studying within-group variation is important for a

host of reasons, most importantly, allowing us to take into account the subjective experience of each individual within that particular culture (Tsai, Ying, & Lee, 2000).

Latinx remain the fastest growing ethnic minority group in the United States, and the Latinx population is estimated to double in size by 2060 (Krogstad & Lopez, 2014). Yet, Latinx remain an understudied and vulnerable population in terms of health and wellbeing (Cuevas, Dawson, & Williams, 2016). This pattern of disparity is also evidenced in Latinx American college students. Latinx Americans have higher college enrollment rates when compared to their European American counterparts, yet their graduation rates remain low (Fry & Lopez, 2012). This pattern suggests that Latinx youth have aspirations to attend college but may have difficulty adjusting to the collegiate environment. This may be attributed to many different factors, one of which is the potential conflict between home and school values (Vasquez-Salgado, Greenfield, & Burgos-Cienfuegos, 2015). Furthermore, navigating between different cultural values may be a process spanning across the lifespan for Latinx individuals, but it may be particularly prominent during the emerging adulthood period when individuals experience a large number of transitions and changes in life (Carrera & Wei, 2014).

In general, cultural values are important to racial-ethnic minority groups because they can influence how one views the world and relate to others (Carter, 1991). Within the Latinx culture, cultural values have been associated with HIV prevention (e.g., Marin, 2003), smoking cessation (e.g., Kaplan et al., 2014), substance use (e.g., Wagner et al., 2008), depressive symptoms (e.g., Lorenzo-Blanco et al., 2012), familial relationships (Park, 2005), and social support and adjustment (e.g., Grau, 2017). From these findings, it appears that endorsement of cultural values is central to the Latinx culture, and hence makes a great starting point to test the fluctuations within-person across different moments. Drawing heavily from the concepts of independent and interdependent self-construal (Markus & Kitayama, 1991; Singelis, 1994) and partly from the individualism-collectivism distinction (Hofstede, 1980), independent and interdependent values were selected because they represent one of the broadest forms of cross-cultural variations. Furthermore, these values have been criticized as an oversimplification of a group-based approach (Miller, 2002), which in part reflect the possibility that one's value changes over time and is not fixed. It is important to note that that independent and interdependent values are not opposing ends of a continuum, but rather, bidimensional values that are not mutually exclusive. Hence, an individual can equally endorse both independent and interdependent values (Gardner, Gabriel, & Dean, 2004).

Social Environment and Culture

Culture as a system is socially rooted and relational in nature (Matsumoto, 2007). Additionally, given the transactional relationship between culture and environment (Bronfenbrenner, 2001), it is reasonable to expect that changes in one's social environment would elicit and predict changes in cultural values. One's social environment may include immediate physical surroundings, social relationships, and cultural background in which defined groups of people function and interact. It is important to note that social environments, including close relationships, are dynamic and can change over time due to both internal (i.e. intrapersonal factors including perceptions and goals) and external (i.e. people you come in contact with) forces (Barnett & Casper, 2001).

Social environment can be measured in various ways. Drawing upon the bioecological model (Bronfenbrenner, 2001), I focused on the microsystem or the immediate social environment that an individual comes in consistent contact with. First, I included occurrence of social interaction. Given the basis of collectivism and interdependence (i.e. an emphasis on relationships with others), it is likely that an occurrence of social interaction, compared to no social interaction, may activate endorsement of interdependent values within the individual. Secondly, I included the partner of interaction, distinguishing between close relationships (i.e., family, friend, and romantic partner) and non-close relationships (e.g., stranger). Latinx are more likely to disclose more personal information to a friend when compared to an acquaintance, highlighting the importance of type of relationship within a social interaction (Schwartz, Galliher, & Domenech Rodriguez, 2011).

Lastly, I focused on the subjective experience of the individual, including perceived quality and relatedness to the social environment. Research has established links between self-construal and perceived quality of social interactions. Specifically, individuals higher in interdependent self-construal had more positive social interactions when compared to those lower in interdependent self-construal (Nezlek, Schaafsma, Safron, & Krejtz, 2012). Drawing upon the concept of culture as a situated cognition (Oyserman, 2011) and prior work in cultural frame switching (Hong et al., 2000), I posit that the recursive associations may also be true, in which quality of social interactions serve as cues and primers in predicting endorsement of cultural values.

Most of the aforementioned research on cultural frame switching have been conducted as a comparison between Asian, a collectivistic culture, and Whites, representing the Western individualistic culture. One primary limitation of studies that contrast Eastern and Western cultures is that findings of one collectivist culture are often thought to apply to other collectivist cultures (Ruby, Falk, Heine, Villa, & Silberstein, 2012). In fact, comparative research on the emotional and affective experiences of Asian and Latinx Americans suggests that not all forms of collectivism are the same (Ruby et al., 2012). Furthermore, only a handful of studies have investigated cultural frame switching in Latinx Americans (Lechuga, 2008; Kreitler & Dyson, 2016). Most importantly, almost all studies focusing on cultural frame switching have relied on priming the participants in eliciting a cognition, behavior, or emotion. The present study aims to build upon prior work in this area using an ecologically valid approach, by which the participants are not manipulated or primed in a controlled setting, but rather, to examine how social determinants of everyday life may predict endorsement of cultural values in Latinx college students.

Culture and Socio-Emotional Wellbeing

Culture plays an important role in the social determinants of health and wellbeing, including social and emotional health. A multitude of studies have found cross-cultural differences in social and emotional wellbeing including depressive symptoms (e.g., Grossman & Kross, 2010), anxiety (e.g., Okazaki, 2000), and stress and coping (e.g., Montoro-Rodriguez & Gallagher-Thompson, 2009). Research has demonstrated that cultural values play important roles in the psychological wellbeing of Latinx college students (Gloria, Castellanos, & Orozco, 2005), and that Latinx college students who endorse traditional cultural values such as *familismo* (value focusing on family

connectedness, cohesion, and importance) evident less depressive symptoms (Hinojosa & Vela, 2019).

There are different mechanisms through which culture may affect socio-emotional wellbeing. For example, culture may influence the way worry and rumination manifested within the self. Indeed, Scott, Eng, & Heimberg (2002) examined ethnic differences in worry in a college student population and concluded that while no differences were found in pathological worry across European Americans, African Americans, and Asian Americans, the three groups did differ on specific domains of worry, as well as the intensity of worry across these domains. Similarly, when comparing college students of European American and Asian American descent, it was found that rumination is higher among Asian Americans (Chang, Tsai, & Sanna, 2010). However, the same study also found that while Asian Americans do ruminate more than their European Americans counterpart, the association between rumination and adjustment for Asian Americans is lower than European Americans. Hence, the negative consequences frequently linked to rumination may not be fully applicable to individuals of Asian American descent, supporting previous studies that have compared between the two cultural groups (e.g. Nolen–Hoeksema, 2000). This points towards another potential mechanism by which culture may play a moderating role in its influence on wellbeing.

The aforementioned work emphasizes the importance of examining the implications of culture on socio-emotional wellbeing in everyday life. However, despite the established links between culture and socio-emotional wellbeing, less is known about when and how culture influences socio-emotional outcomes. To this end, examining the associations between culture and socio-emotional wellbeing using and EMA approach will hopefully elucidate the associations between culture and socio-emotional wellbeing in Latinx college students as they occur in in real time within a natural environment.

The Present Study

This paper examines how endorsement of cultural values vary among a Latinx college student population. The first goal of the present study is to examine whether endorsement of cultural values varies between-person and within-person, including within-person across days and within-person within-days. The between-person variance extends prior work by testing whether an ethnically homogeneous group still varies on pre-determined cultural values. The within-person variance tests whether endorsement of independent and interdependent values varies from day-to-day and/or moment-to-moment within days, which would highlight the potential for cultural values to fluctuate on a shorter timescale (days and moments). Decomposing the within-person variance allows us to study how and when culture is dynamic, which would allow us to better operationalize and understand how culture works in everyday life. I hypothesize that endorsement of cultural values varies on all levels of measurement.

The second goal of the paper is to better understand the identified variance in cultural values. Specifically, I examine whether the occurrence of social interactions, partner of social interaction, quality of social interaction, perceived closeness of relationship, and sense of belongingness are significant predictors of endorsement of cultural values, both at the between-person and within-person level. The models also controlled for other between-person variables including gender, and native language and nativity status as acculturation proxies. Given the nature of interdependent values, and the

relevance of interdependent values to the Latinx culture, I hypothesize that these measures of social environment will be significantly associated with interdependent values but may not necessarily be associated with independent values.

The third goal of this study is to examine the impact of cultural values on social and emotional wellbeing in the moment. Specifically, I tested whether endorsement of independent and interdependent values was associated with sadness, happiness, anxiety, worry, rumination, loneliness, and stress. I hypothesize that endorsement of interdependent values will be predictive of better socio-emotional wellbeing.

Methods

Participants

Undergraduate students from a public university in California's San Joaquin Valley participated in this study. There was a total of 221 participants (20.4% male, 79.6% female) aged 18 to 42 years ($M = 19.83$, SD = 2.51). All participants identified as Hispanic/Latino/a as part of the eligibility criteria.

Procedure

Recruitment was conducted online using campus-based online recruitment system (SONA). Eligible participants scheduled a lab session on campus where they provided informed consent. The study was conducted in two phases: a baseline assessment and an EMA session. From the baseline assessment to the completion of EMA utilization, the duration of the study lasted 15 days: the day of laboratory assessment and EMA training, followed by two consecutive weeks of EMA.

At the baseline assessment, participants completed a questionnaire via Qualtrics assessing demographic information and other measures not relevant to the present paper. Participants were compensated with course credit for the laboratory assessment. After the completion of the Qualtrics questionnaire, participants were given an option to participate in the EMA portion of the study. If the participant agreed, a trained research assistant conducted the training session with the participant. The training session included accessing and downloading the smartphone app called RealLife Exp (LifeData, Marion, IN), creating an account, and reviewing all possible questions of the EMA portion. The participants' responses to the training session were recorded but not included in the analyses of the study. Participants responded to two measures each day over a course of two weeks using a signal-contingent design. The notifications were randomized to occur between 12pm-4pm and 6pm-10pm. When prompted, participants completed surveys assessing cultural values, social environment, and socio-emotional wellbeing among other measures not relevant to the present paper.

Measures

Baseline measures. Participants reported on their gender, which was recoded into 0 = male and 1 = female. Participants also reported on their native language by responding to the following prompt: "By native language we refer to the language of that country, spoken by you or your ancestors in that country (e.g., Spanish, Quechua, Mandarin). Note that you may not understand and know how to speak the language, and that is okay. My native language is ?". Based on the responses, native language was coded into 0 = Spanish and 1 = Other for the current study. Finally, participants also reported on their nativity status by responding to the question "In what country were you born?". Responses were coded into 0 = Non US-born and 1 = US born.

EMA measures. *Cultural values.* Independent values were assessed by responses to the statements: "Right now, my personal identity, independent of others, is very important to me." (Independent Item 1) and "Right now I'd rather depend on myself than others." (Independent Item 2). Interdependent values were assessed by responses to the statements: "Right now, the wellbeing of others is important to me." (Interdependent Item 1) and "Right now, my happiness depends on the happiness of those around me." (Interdependent Item 2). Participants reported on a scale from 0 (*not at all*) to 6 (*very true*). These items were selected from the Individualism and Collectivism Scale (Triandis & Gelfland, 1998) and the Independent and Interdependent Self-Construals Scale (Singelis, 1994), as I thought they had the potential to demonstrate variance from one moment to another. These items were adapted by emphasizing the participants to focus on their values at the current moment. There was a moderate correlation between the two items measuring independent values ($r = 0.39$) and the two items measuring interdependent values ($r = 0.47$), thus composite scores were created for each value. Based on the low correlation between the mean scores on independent and interdependent values ($r = -0.05$), these variables were examined separately in subsequent analyses.

Social environment. The participant's social environment was measured through the occurrence of social interaction, person of interaction, quality of social interaction, perceived closeness of relationship, and sense of belongingness. To assess occurrence of social interaction, participants responded to the question, "Did you have a social interaction since the last beep?" (*0 = no, 1 = yes*).

When participants indicated "yes," they subsequently reported on the person of social interaction by responding to the question "Who was it with?" (family member, friend, romantic partner, roommate, stranger, coworker, boss/supervisor, professor, counselor/therapist, and other). In line with the focus of the present study, responses to this question were re-coded into a dichotomous close relationship variable (*0 = non-close relationships, 1 = close relationships)* in which family member, friend, and romantic partner were coded as close relationships, and all other choices were coded as non-close relationships. Participants also reported on the quality of the interaction ("How pleasant was the interaction?*")* on a scale from 0 (*very hostile*) to 6 (*very pleasant*). Then, participants reported on their perceived closeness of the relationship using the single item Inclusion of Other in the Self Scale (Aron, Aron, & Smollan, 1992), "Using the image below in which you are represented as 'Self' and the person you interacted with is represented as 'Other', think about which number best indicates how close you are with that person?" on a scale from 1 (*least closest*) to 7 (*closest*).

Finally, across all moments, including moments where participants do no encounter a social interaction, participants' report their sense of belongingness by answering the question, "Right now, how much do you feel part of a group?" on a scale from 0 (*not at all*) to 6 (*extremely*).

Socio-emotional wellbeing. Participants reported on the following socio-emotional wellbeing outcomes on a scale from 0 (*not at all*) to 6 (*extremely*): sadness ("At this moment, how sad do you feel?"), happiness ("At this moment, how happy do you feel?"), anxiety ("At this moment, how anxious do you feel?"), rumination ("How much are you ruminating or thinking about past events that were not well resolved?"), worry ("How

much are you worrying?"), stress ("How stressed do you currently feel?"), and loneliness ("Right now, how lonely do you feel?").

Analytic Plan

All analyses were conducted using SAS v. 9.4. For the first goal of the paper, I partitioned the variance of interdependence and independence (tested separately) using unconditional multilevel models. Three-level models were used to partition variance into the proportion due to differences between-person and two within-person levels: within-person, across-day variance and within-person within-days (and error). I then examined the variance components for each model and calculated the percent of total variance at each level.

For the second goal of the paper, I then tested whether the social environment variables predicted endorsement of independent and interdependent values between-person and within-person. Because the social environment variables measured different occasions (i.e., occurrence of social interaction and belongingness tested all occasions, whereas person of social interaction, quality of social interaction, and perceived closeness of relationship were only tested when a person had an interaction), I conducted models for each social environment variable separately. All models controlled for study day (running count from 1 to 14), whether it was weekday (0, Monday to Friday) or weekend day (1, Saturday/Sunday), and time of day (in minutes elapsed since midnight). Each model controlled for between-person variables that may influence endorsement of cultural values, namely gender, native language, and nativity status. Social environment variables were tested at two different levels: person-mean (between-person) and person-mean centered (within-person). First, I obtained an overall mean across all observations for each different social environment variable and subtracted this from all raw values (grand mean centered). Then, I computed the average of each person's values for each of the social environment factors (person-mean). Finally, I subtracted the person average from the momentary values for each person (person-mean centered). The Pseudo R^2 statistic was included as a measure of the effect size of the model.

For the third goal of the paper, I tested whether endorsement of independent and interdependent values predicted socio-emotional wellbeing between-person and within-person. All models controlled for study day (running count from 1 to 14), whether it was weekday (0, Monday to Friday) or weekend day (1, Saturday/Sunday), and time of day (in minutes elapsed since midnight). Independent and interdependent values were tested at two different levels: person-mean (between-person) and person-mean centered (within-person). First, I obtained an overall mean across all observations for independent and interdependent values and subtracted this from all raw values (grand mean centered). Then, I computed the average of each person's values for each of the social environment factors (person-mean). Finally, I subtracted the person average from the momentary values for each person (person-mean centered). Independent and interdependent values were entered simultaneously into each model. Similar to the second goal, the Pseudo R^2 statistic was also included as a measure of the effect size of the model.

Results

Descriptive statistics for all study variables are shown in Table 3.

Goal 1: Between-Person and Within-Person Variability in Culture

Results of the partitioning of variance of both independent and interdependent values are displayed in Figure 2. For independent values, about 58% of variance was due to between-person variance, 10% was due to within-person across days variance, and 32% was due to within-person within-days variance. Similarly, for interdependent values, about 51% of variance was due to between-person variance, 9% was due to within-person across days variance, and 40% was due to within-person within-days variance.

Goal 2: Social Environment Factors

All social environmental variables were examined separately using multilevel models that controlled for time (study day, weekend or weekday, and time of day). Each social environmental factor was tested at the between-person (person-mean) and within-person (person mean-centered) level. Subsequently, these variables were entered simultaneously into the models to examine the effects of various dimensions of social environmental factors on endorsement of independent (Table 4) and interdependent (Table 5) values.

Independent Values

Between-Person. Individuals who reported more social interaction on average also reported higher independent values in general ($b = 1.04$, $SE = 0.41$, $p = .003$). Similarly, individuals who report higher quality of social interaction on average also report higher independent values ($b = 0.31$, $SE = 0.11$, $p = .004$). There were no other significant associations between social environmental factors and independent values at the between-person level.

Within-Person. There were no significant associations between social environment factors and independent values at the within-person level, with the exception of reported sense of belongingness. Specifically, in the moments where individuals report higher sense of belongingness than they typically would, they also report lower levels of independent values ($b = -0.03$, $SE = 0.01$, $p = .006$).

Interdependent Values

Between-Person. Individuals who report higher quality of social interaction ($b = 0.35$, $SE = 0.13$, $p = .009$), higher levels of perceived closeness ($b = 0.19$, $SE = 0.08$, $p = .047$), and higher sense of belongingness ($b = 0.33$, $SE = 0.08$, $p < .001$) on average also report higher interdependent values.

Within-Person. All social environmental factors were consistently associated with interdependent values at the within-person level. Specifically, in the moments where an individual reports social interaction compared to no social interactions, they report higher interdependent values ($b = 0.42$, $SE = 0.06$, $p < .001$). Within these reported interactions, having a social interaction within close relationships compared to other relationships is also associated with higher interdependent values ($b = 0.33$, $SE = 0.05$, $p < .001$). Similarly, when an individual reports higher quality of social interaction ($b = 0.20$, $SE = 0.02$, $p < .001$), higher perceived closeness ($b = 0.11$, $SE = 0.01$, $p < .001$), and higher belongingness ($b = 0.21$, $SE = 0.01$, $p < .001$) than they typically would, they also report higher interdependent values.

Goal 3: Cultural Values and Socio-Emotional Wellbeing

Multilevel models were conducted to estimate the effects of independent and interdependent values on self-reported socio-emotional wellbeing (sadness, happiness, anxiety, rumination, worry, loneliness, and stress). Similar to aim 2, all models controlled for time (study day, weekend or weekday, and time of day). Independent and interdependent values were grand-mean centered (person-mean) and person-mean centered at the momentary level (person-mean centered) and entered simultaneously into the models to better examine the effects of endorsement of cultural values on socio-emotional wellbeing.

The results from the multilevel modeling analyses are presented in Table 6. At the between-person level, individuals who reported higher levels of independent values on average also reported high levels of happiness ($b = 0.14$, $SE = 0.06$, $p < .001$). There were no other significant associations between endorsement of cultural values and socio-emotional wellbeing at the between-person level.

At the within-person level, in the moments where individuals report higher interdependent values than typical, they also report lower levels of sadness ($b = -0.18$, $SE = 0.02$, $p < .001$), anxiety ($b = -0.12$, $SE = 0.02$, $p < .001$), worry ($b = -0.15$, $SE = 0.02$, $< .001$), loneliness ($b = -0.20$, $SE = 0.02$, $p < .001$), and stress ($b = -0.13$, $SE = 0.02$, $p < .001$); as well as higher levels of happiness ($b = 0.34$, $SE = 0.02$, $p < .001$). Endorsement of independent values did not significantly predict any of the socio-emotional wellbeing variables. Overall, the results indicate that endorsement of interdependent values in the moment were consistently associated with better socio-emotional wellbeing, except for rumination. However, there were no significant associations between endorsement of independent values and socio-emotional wellbeing.

Discussion

The present study examined the endorsement of independent and interdependent values on three different levels: between-person, within-person across days, and within-person within-days across moments. To our knowledge, this is the first study to measure culture using an EMA approach. As hypothesized, one's endorsement of independent and interdependent values do fluctuate within-person. Furthermore, facets of social environment were consistently associated with interdependent values at the within-person level, but not independent values. The associations between social environment and cultural values also differed at the between-person and within-person level. Endorsement of interdependent values were associated with better socio-emotional wellbeing, but only at the within-person level. I discuss these findings in detail below.

Dynamics of Culture in Everyday Life

The largest proportion of variance for both independent and interdependent values arises in between-person. Additionally, when examining the mean and relatively large standard deviations of the cultural variables (see Table 3), I can infer that endorsement of cultural values in the current sample has a wide range of variation and is widely spread from the mean. Collectively, these findings extend current work in validating that heterogeneity exists within a cultural group, and individuals may endorse varying levels of cultural values (Deater-Deckard et al., 2017).

In line with the first hypothesis, the proportion of variance at the within-person level shows that there is more to comparing between different individuals. For both

independent and interdependent values, almost half of the variances were attributed to within-person variances. The findings show that endorsement of cultural values can vary within the same individual, at both daily and momentary levels. This is exciting because it provides support to the notion that endorsement of cultural values may be a fluctuating state, instead of a stable, non-changing trait within an individual. This extends and adds on to prior work that has examined different facets of culture as malleable (Ross, Xun, & Wilson, 2002) and situational (Hong et al., 2000).

It is also interesting to note that for both independent and interdependent values, the largest proportion of within-person variance arises within-person within-days (momentary). One possible explanation is that the relatively lower day level variance may reflect routines and schedules which are fairly consistent when viewed at the day level. However, when viewed on a momentary level, the individual may be shifting environments (i.e., from school to home), social partners, etc. and these contextual shifts may contribute to the fluctuations of culture within individuals. The distinction between within-person across days and within-person within-days provide an interesting glimpse into how cultural values may fluctuate as a function of one's social environment.

Facets of Social Environment and Changes in Cultural Values

At the between-person level, those who had more social interactions and higher quality interactions also endorsed higher independent values. The links between higher occurrence of social interaction and independent values replicate the findings of prior work that contrasted between Chinese and American individuals, demonstrating that Chinese individuals (representing collectivist culture) has fewer interactions compared to American (representing individualistic culture) individuals (Wheeler, Reis, & Bond, 1989). Furthermore, there is evidence that individualism is associated with ease of interacting with others, which may in part explain the association between higher occurrence and quality of social interactions with independent values (Oyserman, Coon, & Kemmelmeir, 2002).

Individuals who had a generally more positive perception of their social environment (higher quality of interactions, perceived closeness, and belongingness) were more interdependent when compared to individuals who have worse perceptions of their social environment. This is in line with established evidence of interdependent self-construal as a socially and relationally rooted value (Markus & Kitayama, 1991). This also provides support to prior work demonstrating the links between collectivistic-based values and an emphasis on social relationships which may be imperative to Latinx culture (Schwartz et al., 2010). It is important to note that these models do not reveal directionality and thus it is possible that the opposite pattern is true than what was modeled. For example, one possible explanation is that individuals who reported higher levels of independent values on average are more sociable, and hence report higher occurrence and higher quality of social interactions on average. Similarly, individuals who endorse higher interdependent values may also have a better perception of their social environment. In summing up between-person variability on cultural values, I can conclude that individuals obviously differ from one another even within the same cultural group, and individual differences are captured within these between-person variances. This extends previous work that heterogeneity exists within the same cultural group (Deater-Deckard et al., 2017), and that it is important to consider individual differences when examining culture.

At the within-person level, there were no significant associations between social environment and independent values. However, social environment consistently predicts changes in interdependent values. Specifically, the occurrence of social interaction may prompt individuals to endorse higher interdependent values. Similarly, in the moments when an individual has an interaction with a person that is a close other, such as family members, they also report endorsing higher interdependent values. This finding reflects the importance of family in the Latinx culture and is in line with prior research highlighting familism values as central to the Latinx culture (e.g., Rodriguez, Mira, Paez, & Myers, 2007). The findings also emphasize the subjective experience and perception of the individual in relation to the social environment as important predictor of cultural values. Specifically, quality, perceived closeness, and belongingness consistently predicted higher interdependent values. This pattern is consistent with previous research on interdependent self-construal within the context of relationships, where individuals' interdependent self-construal was associated with cognitions and perceptions of the relationship such as perceived closeness and similarity (Morry & Kito, 2009).

Taken together, the facets of social environment measured in this study can be seen as playing a priming role in activating endorsement of interdependent values within Latinx college students. This is in line with, and extends, previous research (e.g., Hong et al., 2000) by adding on specific situational cues for cultural frame switching. Whereas previous research on bicultural frame switching has typically focused on cultural identification (e.g., Schindler et al., 2016), the findings of our study evidenced a switching effect on cultural values. This extends the idea that culture is a situated cognition (Oyserman, 2011), and can be affected by cues in the social environment (Hong et al., 2000) and adds to the literature by utilizing a non-priming, ecological-valid measure. However, the findings point toward an unanswered question: what are the social determinants that may elicit independent values in Latinx college students? The associations between social environment and independent values were largely non-significant, with an exception of higher belongingness predicting lower independent values. One possible explanation is that facets of the social environment measured in the current study are relational in nature, and hence may be more predictive of interdependent values.

The Effect of Culture on Socio-emotional Wellbeing

Individuals who endorsed higher levels of independent values on average also reported higher levels of happiness. This extends previous research that have found an association between higher independent self-construal and greater happiness (Elliot & Coker, 2008). Consistent with our hypothesis, interdependent values were associated with socio-emotional wellbeing, but only at the within-person level. These findings reinforce previous research that have found a positive association between interdependent self-construal and subjective wellbeing (e.g., Chang, Osman, Tong, & Tan, 2011). The disparate findings at the between- and within-person level highlights the importance of taking into account individual differences and the "normal baseline" for every individual. These findings suggest that Latinx undergraduates who endorse higher interdependent values on average do not necessarily have better socio-emotional outcomes when compared to those who endorse lower interdependent values. However, in the moments where a Latinx college student endorses higher interdependent values than they typically would,

they also report better socio-emotional wellbeing. This holds important implications in terms of intervention.

The between- and within-person differences reflect a separation between state and trait variance in cultural values. Undoubtedly, culture plays an important role in Latinx college students (Ong, Phinney, & Dennis, 2006). The findings of the current study add on to current work on culture and wellbeing in Latinx college students by providing a within-person, momentary measure of culture. Measuring culture within-person on a momentary timescale allows us to identify and intervene during vulnerable moments, such as when Latinx college students report having a bad interaction (lower quality) and feels isolated (lower perceived closeness and belongingness). Moreover, a within-person design allows us to take into account every individual's own baseline, which may account for individual differences such as extroversion and introversion. Indeed, within-person variation often provides important baseline and background information about people and defines what level of variability is normal for them (Fleeson, 2001). From an intervention standpoint, this is important for the design and implementation of just-in-time intervention adaptation, an intervention design aiming to provide the right type/amount of support, at the right time, by adapting to an individual's changing internal and contextual state (Nahum-Shani et al., 2018).

Taken together, the findings provide support that: (i) the social environment plays an important role in endorsement of cultural values, and (ii) interdependent values are associated with better socio-emotional wellbeing in Latinx college students. However, these associations varied at the between-person and within-person level. Nevertheless, these different measurements complement each other and hopefully provides a clearer picture of the transactional relationship between social environment, cultural values, and socio-emotional wellbeing in Latinx college students.

Limitations and Future Directions

Although this study presents an innovative method in measuring and conceptualizing culture, there are several limitations warrant mentioning. First, there is relatively high homogeneity between participants as they are all undergraduates within a same institution. This may limit the generalizability of our findings to other groups of Latinx. However, I still observed considerable variance suggesting a group-based approach to understand culture fails to recognize the complexity of individuals within the cultural group (Kho & Zawadzki, under review). Secondly, cultural values are only one component of culture, but it was an appropriate starting point in examining culture within Latinx. Whereas the current study focused on social interactions as the social environment, future research can focus on other social environmental variables including location and neighborhood. Third, despite lack of direct evidence of the causal link between social environment and cultural values, and between cultural values and socio-emotional wellbeing, I speculate that these associations are and dynamic and ever-changing. Methodologically, the measurement of cultural values using an EMA approach represents a challenge, especially in terms of sampling intensity. Building on the current work, future research could delve deeper into these dynamic processes by testing the potential recursive processes between social environment, culture, and socio-emotional wellbeing.

Conclusions and Implications

By investigating the fluctuations of culture using and EMA approach, the present study is the first to discover ways in which one's social environment is associated with short-term fluctuations in cultural values. I have extended previous cross-cultural research by showing that cultural values vary between individuals within the same cultural group, but more importantly also vary within-person across different situations. Additionally, I have shown that interdependent values are associated with better socio-emotional wellbeing at the momentary level. The findings demonstrate that culture does change on a momentary level, and measuring culture using a dynamic approach is important for understanding culture. It is important to note that the current findings do not negate current measurements and conceptualizations of culture but rather adds on to it. Indeed, researchers have highlighted the importance of estimating and comparing between different "pockets" of variability, shedding light on what it means to be a member of a cultural group, to be an individual within that group, and to change over time (Deater-Deckard et al., 2017). There are additional aspects of the present study that are noteworthy. The use of an EMA approach allowed us to study the processes that naturally occur in in the participants' everyday life. This type of intensive longitudinal design provides an important complement to research that has used retrospective self-reports. Using multiple methodology approaches is imperative because differences between cultural groups can vary as a function of the methods used to examine such differences (Kafetsios, Hess, & Nezlek, 2018). Most importantly, the present study provides a more nuanced theoretical picture that complements current research on the associations between social environment, culture, and socio-emotional wellbeing in Latinx college students.

Chapter 4: General Conclusions

Culture is a prominent aspect of the transactional association between close relationships and socio-emotional development (Campos & Kim, 2017). Through the two studies presented in this dissertation, the relationship between culture and socio-emotional development within close relationships was explored. Results highlight a complex relationship between culture, close relationships, and socio-emotional development. Different aspects of culture, such as cultural orientations and cultural values, appear to differentially impact socio-emotional development. Further, these findings highlight how these associations may unfold over time, whether it is during the immigration process, real-time parent-child interactions, momentary changes in social environments, or micro-development in daily life over a two-week period.

Chapter 2 (Study I) examined the associations between cultural orientations, intrusive parenting, and child adjustment in Chinese American immigrant families. Parenting behaviors play an important role in children's socio-emotional development (Darling & Steinberg, 1993), and parents represent one of the most important relationships during childhood (Clark & Lemay, 2010). Findings from path analysis indicated that there was a unique positive association between child Chinese orientation and child-reported intrusive parenting, a unique negative association between parents' American orientation and child reported intrusive parenting, and a unique positive association between child American orientation and observed intrusive parenting. Intrusive parenting was negatively associated with child adjustment, but associations varied depending on measurement. These findings suggest that different measures of intrusive parenting are differentially associated with children's adjustment in Chinese American immigrant families. The results of Chapter 2 indicated that culture, specifically cultural orientations, is an important factor to consider in examining parenting and child adjustment. Moreover, the findings from this study highlights the importance of using a multi-method (self-report and observation) and multi-informant (parent, child, and teacher reports) approach in gaining a well-rounded understanding of parenting behaviors. Importantly, the findings from this study also highlights the differential associations between parent and child cultural orientations within recently-immigrated families.

Chapter 3 (Study II) built upon the findings of Chapter 2 to examine culture and socio-emotional development within a different developmental period. Close relationships may change and take different forms at different developmental stages (Clark & Lemay, 2010). Hence, with the shift of focus from late childhood to emerging adulthood, Study II expanded close relationships to include family, friends, and romantic partners. In addition to a different developmental period, Study II also focused on a distinct timescale – the momentary fluctuations in culture. Specifically, Study II examined endorsement of cultural values in self-identified Latinx emerging adults using an intensive longitudinal design. Participants reported on their cultural values, social environment, and socio-emotional wellbeing twice a day for 14 consecutive days. The intensive longitudinal design allowed for testing of between- and within-person differences. Using multilevel modeling, findings suggest substantial variation of cultural values at the within-person level. The findings of Study II adds on to current work on cultural frame switching by utilizing a non-experimental approach and extends previous work in this area to include cultural values. Follow-up analyses indicated that facets of the social environment, including occurrence

of social interaction, who the interaction person was, quality of social interaction, closeness of relationship, and belongingness were consistently associated with interdependent, but not independent values. These findings highlight the need to study changes in culture as a function of the social environment, and the need to measure culture using ecologically valid measures that allow for more sensitive and dynamic assessments. Similarly, interdependent values were associated with better socio-emotional wellbeing in Latinx college students, but this pattern was not found for independent values. However, these associations were only significant at the within-person, momentary level. Despite disparate findings between the between- and within-person level, Study II highlights the importance of within-person variability. Notably, by comparing individuals to their own means, we control for the all other variables that may be different between individuals.

Research has provided evidence that culture is multidimensional (e.g., Emmerich & Tarver, 2019; Matsumoto, 2007). Previous studies have highlighted the importance in distinguishing between different aspects of culture, such as cultural practices, cultural values, and cultural identification. Within immigrant groups such as Asian Americans and Latinx Americans, each domain of culture represents a different approach to examining the interface between one's heritage and host culture (Castillo & Caver, 2009). Both studies focused on culture within immigrant groups using different methodologies and timescales. Yet, both cultural orientations (Study I) and cultural values (Study II) are theorized to represent the cognitive aspect of the acculturation process (Schwartz et al., 2014), representing the psychological processes in relation to culture. Particularly, the findings demonstrate that divergence exists within different dimensions of culture (i.e. American orientation and Chinese orientation, independent vs. interdependent values) and their influence on socio-emotional wellbeing. Within the broader context of cultural research throughout development, it is important to note that the various aspects of culture may play distinctive roles at different developmental stages. Hence, while the multidimensionality of culture remains constant throughout one's development, the importance and prominence of each cultural aspect continues to change and evolve over time. For example, while exposure to cultural practices may be of utmost importance during early childhood, cultural identification may trump practices as a more salient factor in socio-emotional development during adulthood. This dynamic change in culture is consistent with the definition of culture as an adaptive and functional aspect of development.

The dynamism of culture is examined in distinctive ways across the two studies. Study I examined micro-level social interactions between parents and children, while Study II expands the study of culture and social relationships to examine these associations over a longer timescale (i.e., over the course of days and weeks). Although both studies utilized different timescales, it is hopeful that the findings of this dissertation can help future research in extrapolating these findings to various timescales throughout development. Future studies may consider, within the limitations of feasibility, to include both timescales in taking into account both micro- and macro- development of an individual. For instance, a study that examines both daily fluctuations in culture (micro-longitudinal) and changes in cultural values over the years (macro-longitudinal) will undoubtedly provide a more comprehensive understanding of how changes on different timescales contrast, complement, or inform each other. Taken together, the findings of these distinct yet related

studies underline the complexity of time in the relations between culture, close relationships, and socio-emotional development.

Utilizing different methodologies, this dissertation attempted to answer not only the "Who?" questions (between-person variability) but also the "Why?" and "When?" questions (within-person variability). Indeed, between-person and within-person approaches complement and inform one another within the broader study of human development (Mroczek et al., 2003). Moreover, the findings of these studies emphasize the importance of examining within-group variability. Both studies highlight the heterogeneity that exist within the Asian and Latinx culture, extending previous research on heterogeneity within cultural groups (Deater-Deckard et al., 2017). The different approaches and cultural dimensions of the two studies highlight the complex nature of culture, and the importance of utilizing different methodologies to better understand culture and socio-emotional development. Findings from this dissertation will not only be able to inform research on the interface between culture and close relationships, but potentially guide precision interventions aimed at socio-emotional development among ethnic minority youth. Within the broader study of culture, the findings point towards a need to utilize ecologically valid methods in examining culture.

From a research standpoint, the findings of Study I and Study II highlight the importance of utilizing a multi-method approach in examining the relationships between culture, close relationships, and development. A multi-method approach may include utilizing multiple informants (Study I) or different levels of analyses (Study II). From an intervention standpoint, Study I highlights the need to assess not only self-report from different informants, but ideally to include an observational measure that may indicate actual behaviors in everyday interaction, as opposed to self-perception of these behaviors. The momentary findings from Study II have important implications for intervention design and implementation. For example, based on the findings from Study II, one can conclude that culture is an important resource in understanding socio-emotional development during the emerging adulthood period. Hence, examining culture as a dynamic process (on a momentary timescale) will then allow researchers to think about when that resources may actually be available (or not) for an ethnic-minority college student moving through different social environments. In other words, utilizing an EMA approach to measuring culture allows us to better operationalize and understand how culture fluctuates in everyday life (Unger & Schwartz, 2012). Taken together, perhaps an important direction for future research is to integrate both multi-method and multi-modality approaches within the same study. Ideally, with the help of advancement in data collection methods, a study that includes self-report measures, observational measures, multiple informants, and measures of changes over time will undoubtedly drive our understanding of culture and development to greater heights.

Collectively, these studies will help inform the intersectionality between culture and close relationships in influencing socio-emotional development. These studies extend upon Bronfenrenner's bioecological model (2001), in which the links between close relationship and development is examined within the larger, evolving systems of culture and time. The bioecological model provides a comprehensive model of development; however it is also this all-inclusivity that received criticisms throughout the years, particularly surrounding the difficulties to empirically test the theory (Rosa & Tudge, 2013).

The broadness of this model emphasizes the notion that every aspect of development is important but does not provide a testable guide for practical research. To this end, the studies presented in this dissertation attempted to empirically examine the bioecological model in interpretable ways. Finally, while this dissertation is far from a perfect embodiment of the bioecological model, the studies presented testable, hence replicable means to examining the complex relationships between the macrosystem (culture), the microsystem (close relationships), and the chronosystem (time).

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Table 1
Descriptive Statistics of Study Variables

	N	Min	Max	Mean	SD	Skew	Kurtosis
Parenting Variables							
Intrusive Parenting-O	206	0.00	0.43	0.03	0.05	3.84	20.21
Intrusive Parenting-P	234	1.00	5.00	2.04	0.63	1.39	3.87
Intrusive Parenting-C	239	1.00	4.90	2.05	0.75	0.98	1.10
Child Adjustment Variables							
Externalizing Problems-P	237	0.00	24.00	4.37	4.88	1.63	2.72
Externalizing Problems-T	216	0.00	19.00	1.90	3.64	2.57	6.72
Internalizing Problems-P	237	0.00	22.00	3.66	4.23	1.71	3.37
Internalizing Problems-T	216	0.00	20.00	3.36	4.50	1.96	3.69
Socio-cultural and Demographic Variables							
Parent Chinese Orientation (Centered)	232	-1.93	1.11	0.00	0.47	-0.91	2.12
Parent American Orientation (Centered)	228	-1.27	2.06	0.00	0.62	0.47	-0.02
Child Chinese Orientation (Centered)	239	-1.20	1.50	0.00	0.51	0.31	-0.23
Child American Orientation (Centered)	239	-1.20	1.40	0.00	0.42	0.28	0.17
Parent's Gender (0 = female, 1 = male)	236	0.00	1.00	0.19	0.39	1.62	0.63
Child's Gender (0 = female, 1 = male)	239	0.00	1.00	0.52	0.50	-0.08	-2.01
Child's Age	238	7.49	10.96	9.19	0.73	0.07	-0.69
Family SES	234	-2.13	2.34	-0.01	0.83	0.43	0.21
Parent Preferred Language (0 = English, 1 = Chinese)	235	0.00	1.00	0.83	0.38	-1.72	0.99

Notes. O = observed, P = parent report, C = child report, T = teacher report, Min = minimum, Max = maximum, *SD* = standard deviation.

Table 2
Correlations Among Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Parenting Variables															
1. Intrusive-P	--														
2. Intrusive-C	.10	--													
3. Intrusive-O	.14*	.07	--												
Child Adjustment Variables															
4. Internalizing-P	.23**	.05	.08	--											
5. Internalizing-T	-.07	.01	-.05	.23**	--										
6. Externalizing-P	.30**	.13*	.23**	.64**	.08	--									
7. Externalizing-T	.06	.02	.22**	.21**	.37**	.30**	--								
Sociocultural and Demographic Variables															
8. Chinese-P	.04	.02	.04	.03	-.01	.03	.07	--							
9. American-P	-.10	-.15*	.01	-.10	.03	-.09	.09	-.02	--						
10. Chinese-C	.01	.20**	-.03	-.02	-.11	.03	-.14*	.13*	-.03	--					
11. American-C	-.01	-.01	.19**	-.02	.04	.06	.16*	-.06	.24**	.12	--				
12. Parent gender	.14*	.05	.04	.15*	-.06	-.01	-.02	.02	.06	.10	.01	--			
13. Child age	-.02	-.06	-.04	-.04	.01	-.09	-.07	-.10	-.06	.06	.01	.03	--		
14. Child gender	.06	.06	.14*	-.01	.09	.08	.30**	-.03	-.02	-.25**	-.05	-.02	-.09	--	
15. Family SES	-.06	-.04	.08	.01	.14*	-.03	.17*	.01	.57**	.02	.29**	.04	-.14*	-.06	--
16. Language-P	.04	.02	-.12	-.20**	.004	-.09	-.08	.27**	-.47**	-.003	-.22**	-.04	.16*	.002	-.50**

Notes. Intrusive-P = parent-reported intrusive parenting, Intrusive-C = child-reported intrusive parenting, Intrusive-O = observed intrusive parenting, Internalizing-P = parent-reported internalizing problems, Internalizing-T = teacher-reported internalizing problems, Externalizing-P = parent-reported externalizing problems, Externalizing-T = teacher-reported externalizing problems, Chinese-P = parent-reported parent Chinese orientation, American-P = parent-reported parent American orientation, Chinese-C = child-reported child Chinese orientation, American-C = child-reported child American orientation, Language-P = parents' preferred language (0 = English, 1 = Chinese), Parent/Child gender (0 = female, 1 = male). *p* < .05, **p* < .01.

Table 3
Descriptive Statistics of EMA Measures of Study Variables

	N	Min	Max	Mean	SD
Cultural Variables					
Independent values	4179	0.00	6.00	3.94	1.35
Interdependent values	4167	0.00	6.00	3.06	1.51
Social Environment Variables					
Occurrence of Social Interaction	4160	0.00	1.00	0.84	0.37
Person of Social Interaction	3487	0.00	1.00	0.75	0.43
Quality of Social Interaction	3486	0.00	6.00	4.44	1.35
Perceived Closeness	3487	1.00	7.00	4.93	1.97
Belongingness	4153	0.00	6.00	2.65	1.83
Socio-Emotional Wellbeing Variables					
Sadness	4149	0.00	6.00	1.46	1.56
Happiness	4148	0.00	6.00	3.62	1.43
Anxiety	4143	0.00	6.00	1.93	1.74
Rumination	4134	0.00	6.00	1.66	1.67
Worry	4134	0.00	6.00	2.20	1.76
Stress	4143	0.00	6.00	2.26	1.83
Loneliness	4157	0.00	6.00	1.51	1.65

Notes. Min = minimum, Max = maximum, *SD* = standard deviation.

Table 4
Effects of Social Environmental Factors on Independent Values

	Occur	Person	Quality	Close	Belong
Fixed Effects					
Intercept	3.36(0.40)***	4.64(0.38)***	2.81(0.57)***	4.65(0.42)***	3.96(0.35)***
Study Day	0.02(0.003)***	0.02(0.004)***	0.02(0.004)***	0.02(0.004)***	0.02(0.003)***
Weekend	-0.002(0.03)	0.00(0.04)	-0.01(0.04)	0.00(0.03)	0.002(0.03)
Time	0.00(0.00)	0.00(0.00)	0.00(0.00)	0.00(0.00)	0.00(0.00)
Gender	-0.36(0.22)	-0.20(0.21)	-0.11(0.21)	-0.19(0.21)	-0.20(0.21)
Language	-0.12(0.17)	-0.18(0.17)	-0.23(0.17)	-0.21(0.17)	-0.17(0.17)
Nativity	0.07(0.20)	-0.01(0.20)	-0.01(0.20)	0.03(0.20)	0.09(0.21)
Occur – PM	1.04(0.41)*	--	--	--	--
Occur – PMC	0.02(0.05)	--	--	--	--
Person – PM	--	-0.60(0.36)	--	--	--
Person – PMC	--	-0.08(0.04)	--	--	--
Quality – PM	--	--	0.31(0.11)**	--	--
Quality – PMC	--	--	-0.02(0.01)	--	--
Close – PM	--	--	--	-0.10(0.07)	--
Close – PMC	--	--	--	-0.02(0.01)	--
Belong – PM	--	--	--	--	0.05(0.08)
Belong – PMC	--	--	--	--	-0.03(0.01)**
Random Effects					
Intercept	0.94(0.11)***	0.91(0.11)***	0.88(0.11)***	0.92(0.11)***	0.99(0.12)***
Residual	0.74(0.02)***	0.74(0.02)***	0.74(0.02)***	0.74(0.02)***	0.74(0.02)***
Model Statistics					
Pseudo R^2	0.04	0.02	0.05	0.01	0.01

Note. *$p < .05$, **$p < .01$, ***$p < .001$; Values are unstandardized beta coefficients (standard error). PM=person-mean, PMC=person-mean centered

Table 5

Effects of Social Environmental Factors on Interdependent Values

	Occur	Person	Quality	Close	Belong
Fixed Effects					
Intercept	1.92(0.44) ***	2.22(0.43) ***	0.98(0.65)	1.85(0.48) ***	1.48(0.36) ***
Study Day	0.00(0.005)	0.00(0.00)	0.00(0.00)	0.00(0.00)	0.00(0.00)
Weekend	0.06(0.04)	0.04(0.04)	0.06(0.04)	0.02(0.04)	0.03(0.04)
Time	0.00(0.00)	0.00(0.00)	0.00(0.00)	0.00(0.00)	0.00(0.00)
Gender	0.20(0.24)	0.30(0.24)	0.44(0.24)	0.25(0.24)	0.33(0.22)
Language	0.14(0.19)	0.14(0.19)	0.12(0.19)	0.16(0.19)	0.15(0.18)
Nativity	0.10(0.22)	0.15(0.23)	0.05(0.22)	0.11(0.22)	0.14(0.21)
Occur – PM	0.72(0.45)	--	--	--	--
Occur – PMC	0.42(0.06) ***	--	--	--	--
Person – PM	--	0.50(0.41)	--	--	--
Person – PMC	--	0.33(0.05) ***	--	--	--
Quality – PM	--	--	0.35(0.13) **	--	--
Quality – PMC	--	--	0.20(0.02) ***	--	--
Close – PM	--	--	--	0.19(0.08) *	--
Close – PMC	--	--	--	0.11(0.01) ***	--
Belong – PM	--	--	--	--	0.33(0.08) ***
Belong – PMC	--	--	--	--	0.21(0.01) ***
Random Effects					
Intercept	1.13(0.13) ***	1.17(0.14) ***	1.13(0.14) ***	1.14(1.14) ***	1.03(0.12) ***
Residual	1.08(0.03) ***	1.02(0.03) ***	0.98(0.03) ***	1.00(0.03) ***	1.00(0.02) ***
Model Statistics					
Pseudo R^2	0.03	0.03	0.06	0.06	0.11

Note. $*p < .05$, $**p < .01$, $***p < .001$; Values are unstandardized beta coefficients (standard error). PM=person-mean, PMC=person-mean centered

Table 6
Effects of Independent and Interdependent Values on Socio-Emotional Wellbeing

	Sadness	Happiness	Anxiety	Rumination	Worry	Loneliness	Stress
Fixed Effects							
Intercept	1.45(0.40)***	2.57(0.33)***	2.38(0.46)***	2.03(0.47)***	2.39(0.46)***	1.78(0.40)***	2.52(0.47)***
Study Day	0.01(0.01)	0.00(0.00)	0.00(0.00)	0.01(0.01)	-0.01(0.01)	0.00(0.00)	-0.02(0.01)**
Weekend	0.04(0.05)	0.10(0.04)*	-0.20(0.05)***	-0.12(0.04)**	-0.18(0.05)***	-0.04(0.04)	-0.30(0.05)***
Time	0.00(0.00)	0.00(0.00)	0.00(0.00)	0.00(0.00)	0.00(0.00)	0.00(0.00)	0.00(0.00)
Independent-PM	-0.08(0.08)	0.14(0.06)*	-0.13(0.09)	-0.16(0.02)	-0.10(0.09)	-0.09(0.08)	-0.08(0.09)
Interdependent-PM	0.05(0.07)	0.11(0.06)	0.09(0.08)	0.12(0.09)	0.14(0.08)	0.09(0.07)	0.13(0.08)
Independent-PMC	-0.05(0.02)	0.04(0.02)	0.01(0.03)	-0.03(0.02)	0.01(0.03)	0.01(0.03)	0.05(0.03)
Interdependent-PMC	-0.18(0.02)***	0.34(0.02)***	-0.12(0.02)***	-0.04(0.02)	-0.15(0.02)***	-0.20(0.02)***	-0.13(0.02)***
Random Effects							
Intercept	0.92(0.12)***	0.63(0.08)***	1.32(0.16)***	1.41(0.17)***	1.28(0.16)***	0.96(0.12)***	1.35(0.16)***
Residual	1.44(0.04)***	1.29(0.03)***	1.64(0.04)***	1.30(0.03)***	1.82(0.05)***	1.69(0.04)***	1.95(0.05)***
Model Statistics							
Pseudo R^2	0.02	0.08	0.02	0.02	0.02	0.02	0.02

Note. *$p < .05$, **$p < .01$, ***$p < .001$; Values are unstandardized beta coefficients (standard error). PM=person-mean, PMC=Person-mean centered.
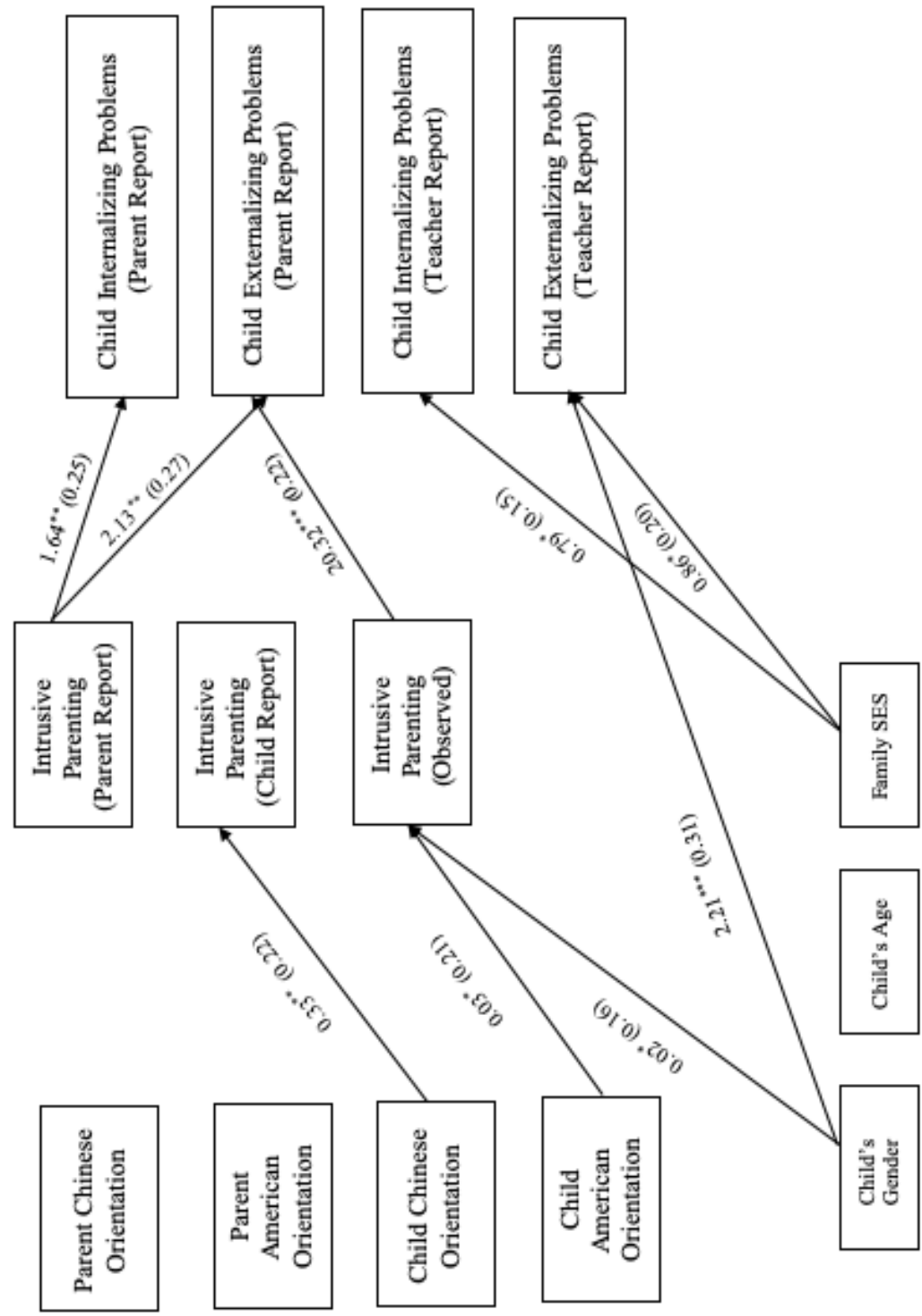
Figure 1. The path analysis model testing the relations among demographic and socio-cultural factors, observed intrusive and directive parenting, parent- and child-reported intrusive parenting, and teacher- and parent-reported externalizing and internalizing problems. Numbers within parentheses represent standardized path coefficients. Non-significant paths are omitted from the figure. Child's gender is coded as 1=female, 2=male, * $p < .05$, ** $p < .01$, *** $p < .001$
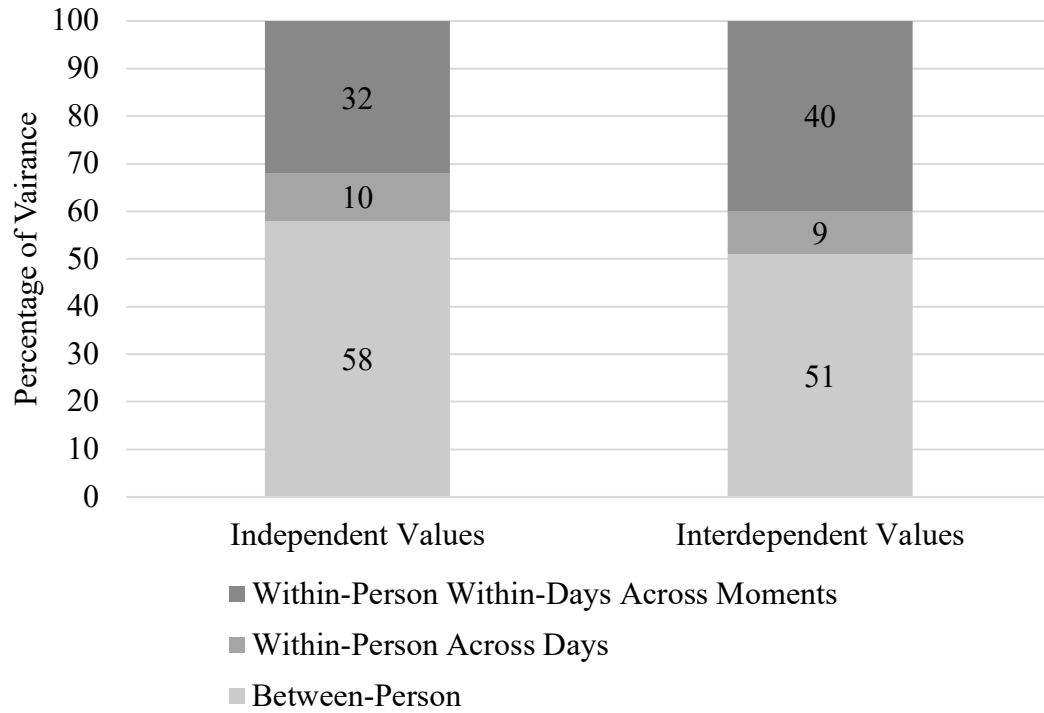
Figure 2. Partitioning of variance for independent and interdependent values across between-person, within-person across days, and within-person within-days across moments level.