

Stress of Language Brokering and Mexican American Adolescents' Adjustment: The Role of Cumulative Risk

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Abstract

This study focused on early adolescents' stress of language brokering and examined the moderating role of family cumulative risk in the relation of language brokering to adjustment problems. Data came from self-reports of 604 low-income Mexican American adolescent language brokers (54% female; $\bar{X}_{age} = 12.4$; $SD = 0.97$; 75% born in the United States) and their parents (99% foreign-born) in central Texas. Path analyses revealed that brokering stress, but not frequency, was positively associated with adolescents' adjustment problems, including depressive symptoms, anxiety, and delinquency. We also found that the relation between stress of brokering for mothers and adolescents' depressive symptoms was stronger among families with a high cumulative risk. Further, with a high cumulative risk, adolescents exhibited delinquent behaviors regardless of the levels of stress from translating for fathers. Current findings underscore the importance of examining family contexts in assessing the consequences of language brokering for Mexican American early adolescents' well-being.

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Latinos form the largest segment of immigrants in the United States (Lopez, Passel, & Rohal, 2015). Adolescents from Latino immigrant families often engage in translation and/or interpretation for their English-limited parents, which is known as *language brokering* (McQuillan & Tse, 1995). Although one study found that more than 70% of adolescents from Mexican immigrant families act as language brokers for their families (Chao, 2006), findings have been mixed as to whether language brokering is promotive or disruptive for adolescent well-being. While some scholars have found that language brokering tasks can create stress for adolescents and put them at risk of psychological and behavioral problems (e.g., Kam, 2011), others have reported little stress and more positive outcomes for adolescent language brokers (e.g., Guan, Greenfield, & Orellana, 2014). To date, it remains unclear how language brokering confers mixed effects, with some samples of language brokers benefiting from the practice and others at risk of psychological and behavioral problems.

Investigating subjective feelings about language brokering, such as psychological stress, and family contexts where language brokering occurs, such as potential risk factors in the family environment, may be helpful in reconciling the mixed findings in prior studies. For example, adolescents who frequently translate for their parents may not necessarily develop psychological or behavioral problems if the adolescents do not perceive the brokering tasks to be stressful (e.g., Dorner, Orellana, & Jiménez, 2008). Therefore, the psychological and behavioral implications of subjective feelings about language brokering (e.g., stress) may need to be simultaneously considered when examining the implications of the extent of language brokering practices (e.g., frequency). Furthermore, whether or not the stress of language brokering may develop into psychological and behavioral problems, such as depressive symptoms, anxiety, or delinquency, may depend on the family context. For example, studies have found that adolescent language brokers exhibited psychological maladjustment when they were exposed to inhibiting family environments, but not when they were exposed to promoting environments (e.g., Hua & Costigan, 2012; Oznobishin & Kurman, 2009). Thus, in the current investigation, we study the roles of not only the frequency, but also the stress of language brokering separately for mothers and for fathers. In addition, we examine the moderating roles of family cumulative risk in the relations between language brokering stress and the psychological and behavioral adjustment in low-income Mexican American early adolescent language brokers.

Language Brokering Stress and Adolescent Adjustment

The integrative model of minority child development emphasizes the influence of adaptive culture for the development of minoritized children (García Coll et al., 1996). According to the integrative model, the adaptive culture—more recently refined as adapting cultural systems—represents a set of values that are not only the product of cultural inheritance, but also that of adaptation to the current environmental demands (García Coll et al., 1996; White, Nair, & Bradley, 2018). As such, Mexican American adolescents' language brokering may reflect an adaptive culture of the family, which stems from both the heritage culture of *familismo*, or the importance of family loyalty and cohesion in Latino culture (Updegraff, McHale, Whiteman, Thayer, & Delgado, 2005), and the environmental demands that require the adolescents to help their immigrant parents with limited English proficiency to adapt to and function in the society. Recent theorization of the adaptive culture further proposes that such adaptations come with both costs *and* benefits, depending on differences in children's individual characteristics, including coping mechanisms and perceived stress (White et al., 2018).

In line with the theoretical prediction, prior research seems to suggest both developmental costs and benefits of language brokering. For example, some studies found that frequent brokering is associated with more psychological and behavioral adjustment problems among Latino youth, including internalizing symptoms (Chao, 2006; Love & Buriel, 2007; Martinez, McClure, & Eddy, 2009), lower levels of perceived peer acceptance (Niehaus & Kumpiene, 2014), and more substance use (Martinez et al., 2009). At least one other study, in contrast, found no correlation between language brokering frequency and depression for Latina adolescents (Buriel, Love, & de Ment, 2006). Still, others found frequent language brokering to be a promotive factor for the prosocial and behavioral development of immigrant and linguistically minoritized youth, including higher levels of transcultural perspective-taking and empathy and lower levels of externalizing problems (Guan et al., 2014; Shen, Kim, Wang, & Chao, 2014). Thus, evidence is mixed as to whether and to what extent immigrant adolescents' frequent language brokering is detrimental or beneficial for their psychological and behavioral outcomes.

Guided by the adaptive culture framework (García et al., 1996; White et al., 2018), we propose that one avenue of elucidating the variability in developmental costs and benefits of language brokering is by simultaneously examining subjective feelings about the practice, such as the perceived stress. Translation tasks could potentially create stress for immigrant youth when

they lack certain vocabulary (e.g., medical or legal documents), when they are pressured to translate correctly (e.g., school report cards), or when they simply lack certain experience (e.g., filling out insurance applications). Adolescents who experience higher levels of stress when performing translation tasks may be more likely to develop psychological and behavioral problems. For example, previous studies found that negative feelings about language brokering, such as subjective burden, are predictive of adolescents' internalizing (i.e., depressive and anxious) symptoms (Kim et al., 2014; Shen, Seo, Hu, Zhang, & Chao, 2019). In terms of behavioral outcomes, positive subjective feelings about brokering have been found to be associated positively with peer competence (Niehaus & Kumpiene, 2014) and negatively with cigarette use (Kam, 2011). Together, these studies suggest that prior mixed findings about the effect of language brokering may be due, in part, to different levels of stress adolescents' experience. Thus, this study examines the *stress* of language brokering among Mexican American adolescents as a predictor for their psychological (i.e., depressive symptoms, anxiety) and behavioral adjustment (i.e., delinquency), controlling for language brokering frequency.

Family Context: A Cumulative Risk Approach

In addition to recognizing the coexistence of costs and benefits of minoritized families' adaptations, recent theorization of the adaptive culture framework further posits that the relative promoting versus undermining effects of the adaptations may depend on diverse family contexts (White et al., 2018). Therefore, examining the family contexts of Mexican American adolescent language brokers may prove fruitful in understanding the variability in the effects of subjective brokering experiences. According to national survey data, Mexican immigrants are more likely to have limited English proficiency and have lower socioeconomic status, including lower levels of education and lower incomes, compared with the overall foreign- and native-born populations in the United States (Zong & Batalova, 2018). Concomitant with low socioeconomic status are a host of stressors, such as nonintact household, neighborhood problems, low levels of parental education, financial hardships, parental psychological distress, and hostile parenting (Buehler & Gerard, 2013; Loukas & Prelow, 2004; Mistry, Benner, Biesanz, Clark, & Howes, 2010; Sameroff, Seifer, Baldwin, & Baldwin, 1993). These stressors are considered risk factors, because exposure to each of them, in comparison with nonexposure, has been found to be associated with higher levels of either psychological or behavioral problems for low-income Latino early adolescents (Loukas & Prelow, 2004; Loukas, Prelow, Suizzo, & Allua, 2008).

In assessing the family contexts of adolescent language brokers, especially when there are multiple risk factors, the cumulative risk approach (Evans, Li, & Whipple, 2013; Sameroff et al., 1993) may be particularly useful. The cumulative risk approach posits that any single contextual risk factor in isolation (e.g., single parenthood) may not be overly detrimental for adolescent development; rather, it is the combined or cumulative impact of multiple environmental risks that predicts youth adjustment (e.g., Buehler & Gerard, 2013; Mistry et al., 2010). The cumulative risk approach permits researchers to create one cumulative risk index combining multiple risk factors, rather than include a variety of risk factors as individual predictors (Sameroff, Seifer, & Bartko, 1997). Methodologically, this approach is advantageous in that it increases the validity and reliability of broad developmental risk assessment by enabling multiple, rather than singular, measures to capture diverse aspects of the contextual risk (Evans et al., 2013). It also avoids multicollinearity problems (Evans et al., 2013; Mistry et al., 2010), as certain risk factors, such as financial strain and parental undereducation, are likely to occur simultaneously (Conger & Elder, 1994).

Guided by the theoretical perspectives of the cumulative risk approach (Evans et al., 2013; Sameroff et al., 1993), as well as previous empirical research on Latino low-income families' cumulative risk (e.g., Loukas & Prelow, 2004; Loukas et al., 2008), we focused on a total of six interrelated risk factors in this study to comprehensively depict the family context. They encompass two household demographic risk factors (i.e., nonintact household, neighborhood disadvantage), two family socioeconomic risk factors (i.e., parental undereducation, family financial hardships), and two parental psychological and behavioral risk factors (i.e., parental risk of clinical depression, parental hostility toward the child).

The Role of Cumulative Risk in the Stress-Adjustment Link

The family context, indicated by the total number of risk factors, may have an impact on the psychological and behavioral outcomes of young language brokers who experience stress due to language brokering. For example, empirical evidence with Korean American children indicated that children who learned about parental financial problems through language brokering experienced emotional problems (Kwon, 2014). It is possible that young language brokers come to learn about a host of problems with which their families are faced as they translate various materials for their parents. Therefore, for youth who are exposed to multiple risk factors, the accumulation of these

risk factors may exacerbate negative psychological and behavioral implications of the stress of language brokering. In contrast, for adolescents coming from families experiencing fewer risk factors, the stress of the translating tasks may have fewer negative implications on adolescents' psychological and behavioral adjustment.

Alternatively, it is also possible that the implications of language brokering stress are attributable to low family socioeconomic status and the risk factors associated with it. That is, the potential association between language brokering stress and poor psychological and behavioral adjustment may be primarily driven or overridden by the cumulative risk of low family socioeconomic status. Therefore, a competing hypothesis is that the more risk factors to which adolescents are exposed, the less salient a factor language brokering stress may be for their psychological and behavioral adjustment. By the same token, the fewer risk factors there are, the more salient language brokering stress may become. To test these competing hypotheses, we examine the cumulative risk index as a predictor and moderator, which may interact with adolescents' brokering stress in predicting their psychological and behavioral outcomes.

The Role of Parent and Adolescent Sex

In addition to examining the potential conditioning role of family cumulative risk, one way of further clarifying the mixed effects of language brokering in the literature is by examining the role of parent and adolescent sex in adolescents' language brokering experiences. Much of the prior research on language brokering, however, either did not distinguish between language brokering for mothers versus that for fathers (e.g., Kam & Lazarevic, 2014; Love & Buriel, 2007) or only investigated the experiences of language brokering for mothers (e.g., Shen et al., 2014; Titzmann, Gniewosz, & Michel, 2015). Limited evidence suggests that Latino adolescents provide more language brokering for mothers than for fathers (Chao, 2006), although it is not known whether adolescents also experience more stress when translating for mothers versus fathers. More important, whether or not language brokering stress has differential impact on adolescent well-being by parent sex has not been investigated in the literature.

Similarly, language brokering experiences may be different across female versus male adolescents. In traditional Mexican culture, girls tend to be socialized to provide more family assistance compared with boys (Raffaelli & Ontai, 2004). As a result, girls may be more likely than boys to provide language brokering and may also perceive this task to be more normative and less stressful. However, current evidence has been limited and contradictory.

For example, prior research documented that girls provided more brokering than boys among Latino adolescents (Buriel et al., 2006; Chao, 2006), but another study failed to find a similar sex difference (Love & Buriel, 2007). Prior research on Latino adolescents also suggested that girls felt more favorable about language brokering than boys (Buriel et al., 2006; Love & Buriel, 2007), but no empirical research has explicitly examined sex differences in language brokering stress. Thus, in the current investigation, we assess the stress and frequency of language brokering, as well as their associations with adolescent adjustment separately across mother–adolescent versus father–adolescent dyads, as well as across female versus male adolescents. Given the lack of prior studies that consistently documented parent and adolescent sex differences in adolescents’ language brokering experiences, this investigation is exploratory, and we do not propose *a priori* hypotheses for the role of parent and adolescent sex.

The Current Study

Early adolescence is a particularly important developmental period to investigate the implications of language brokering. Some scholars have argued that language brokering may have more negative impact on youth’s well-being during early adolescence compared to later developmental periods, as youth develop higher cognitive and linguistic abilities and become psychologically more mature to assume adult-like responsibilities over time (Love & Buriel, 2007). Previous qualitative research also suggested that language brokers tend to report less nervousness and more confidence in their brokering skills as they enter later adolescence (Dorner et al., 2008). As such, the stress of language brokering may be particularly salient during early adolescence. Furthermore, early adolescence is an important developmental period because individual adjustment during this time is likely to have lifelong implications (e.g., Bolognini, Plancherel, Bettschart, & Halfon, 1996; Fergusson & Woodward, 2002).

Thus, in this study, we first examine Mexican American early adolescents’ stress of language brokering for mothers and fathers in relation to three aspects of their psychological and behavioral adjustment, including depression, anxiety, and delinquency, controlling for the impact of brokering frequency. As previous research documented that girls (Buriel et al., 2006), older children (Valdés, Chavez, & Angelelli, 2003), and first-generation adolescents (Chao, 2006) in Latino families provide more brokering, we control for these individual characteristics. Second, we further address the gaps in the literature by examining the potential moderating role of the cumulative risk in the family context. Finally, we also explore potential

parent and adolescent sex differences in adolescents' language brokering experiences and the implications.

Method

Participants

The data used in this study come from self-reports of 604 Mexican American adolescent language brokers (54% female; 75% born in the United States) and their parents (99% foreign-born) residing in and around a metropolitan city in Central Texas. Public records, school presentations, and community outreach initiatives were used to recruit participants for this study from 2012 to 2014. To qualify for participation in the study, parents had to be of Mexican origin and have a child in middle school who translated for at least one of the parents in the family. The average age of the fathers was 41 years ($SD = 6.71$), and for mothers, the average was 38 years ($SD = 5.74$). Median annual family income was in the range of US\$20,001-US\$30,000 (vs. 2014 Texas median household income of US\$53,105; 2014 median personal earnings of Hispanics in Texas: US\$22,000; Pew Research Center, 2017; Posey, 2016), with the majority of parents (95%) reporting a family income lower than US\$50,001. The median education level of participating parents was completion of middle school. Adolescents ranged in age from 11 years to 15 years ($\bar{X} = 12.4$; $SD_{age} = 0.97$). The majority of parents (99.5%) reported Spanish as the primary language spoken at home.

Procedure

All families received letters describing the research project and a permission slip for parents to sign. Screening calls were conducted with families that returned the permission slips to determine that the family met the qualifications to participate in the study. Research assistants then scheduled an initial in-person meeting with families who met the qualifications, where families were provided with a more in-depth description of the project and what they could expect. If the family chose to participate in the study, then consent from parents and assent from children were obtained at this time. A formal meeting followed, during which bilingual research assistants met with each family member individually and read all questions in the questionnaire designed for that family member. The questionnaires for parents and adolescents had both English and Spanish presented together. Research assistants then documented the responses on a laptop computer. Participating families received US\$60 in compensation. The institutional review board of the fourth author's university approved all procedures and materials for the study.

Measures

Cumulative risk index. We selected a total of six risk factors commonly documented in previous research on Latino low-income families (e.g., Loukas & Prelow, 2004; Loukas et al., 2008), using parent reports. The risk factors were (a) nonintact household, (b) parental undereducation, (c) family financial adjustment/hardships, (d) parents' perceptions of neighborhood disadvantage, (e) parental risk of clinical depression, and (f) parental hostility toward the child. All risk factors were reported by parents (595 mothers and 293 fathers; both parents participated in the study from 263 out of 456 total intact families). Following the conventions of previous cumulative risk research (e.g., Evans & Kim, 2012; Lengua et al., 2015; Mistry et al., 2010), if the risk was determined to be absent, it was labeled 0 and if it was present it was labeled 1. Each risk factor was coded to be 1 when at least one parent met the criteria. We calculated a cumulative risk index by counting the number of risk factors present for each family.

Parent reports of the adolescent's living situation determined whether the risk factor of *nonintact household* was present. A family was considered nonintact if a parent was divorced, separated, single, or if the child was being raised by a grandparent. *Parental undereducation* was determined by the level of schooling that was completed. If both parents did not complete high school, they were considered undereducated. *Financial adjustment* was determined through parent reports of their financial circumstances (Mistry et al., 2010). Parents responded to nine items to indicate whether or not (0 = no; 1 = yes) they made certain adjustments in the past 3 months due to financial need (e.g., "shut down the heat or air conditioning even though it made the house uncomfortable"; "asked relatives or friends for money or food to help you get by"). Risk was determined if a family had to make more than one financial adjustment. *Parents' perceptions of neighborhood disadvantage* were determined using the neighborhood quality evaluation scale (Kim, Nair, Knight, Roosa, & Updegraff, 2009; $\alpha = .77$ in the current study). Four items measured how much parents agreed with statements about the safety of their neighborhood (e.g., "My neighborhood is safe for children during the daytime"; "It is safe in my neighborhood."). Responses ranged on a 5-point Likert-type scale (1 = *strongly disagree*; 5 = *strongly agree*). A neighborhood was considered disadvantaged if at least one parent reported more than half of the items about neighborhood safety not to be true (i.e., do not agree that the neighborhood is safe).

Parental risk of clinical depression was measured using the center for epidemiologic studies of depression scale (CES-D; Radloff, 1977; $\alpha = .88$ for mother, $\alpha = .81$ for father in the current study). The measure asked parents to rate how often they had behaved or felt a certain way during the past

week (e.g., “I was bothered by things I am usually not bothered by”; “I thought my life had been a failure”) using a 4-point scale (0 = *rarely or none of the time/less than 1 day*; 3 = *most or all of the time/5-7 days*). A parent was rated as being at risk if her or his responses scored at or above 16 for the 20-item measure, based on the tests scoring guidelines (Radloff, 1977). Parents reported their levels of *hostility toward the child* using a previously validated measure (Hou, Kim, Hazen, & Benner, 2017; $\alpha = .83$ for mother, $\alpha = .79$ for father in the current study). This measure included six items that asked how often during the past month the parent behaved in various hostile ways when spending time with their child (e.g., “shout or yell at your child because you were made at him or her”; “get into a fight or argument with your child”). Responses were rated on a 7-point scale (1 = *never*, 4 = *about half the time*, 7 = *always*). Based on previous research (Sameroff et al., 1997), if either parent demonstrated hostility toward their child on average more than “not often” (> 3), the risk factor was considered present.

Adolescent frequency and stress of language brokering. Adolescents rated the frequencies and levels of stress they associated with translating 11 different materials (e.g., homework, household utility bills, legal documents) for their mothers and fathers separately (Kim, Hou, & Gonzalez, 2017). Items on language brokering frequency were rated on a 6-point scale (1 = *never*; 6 = *daily*), while items on language brokering stress were rated on a 5-point scale (1 = *not stressful*; 5 = *extremely stressful*). When adolescents reported never translating one item, the corresponding stress level for that item was treated as missing. Scores for language brokering frequency and stress were calculated by averaging the 11 items, and greater scores indicated higher frequency and stress of language brokering. Reliability of both scales was good (frequency: $\alpha = .87$ for mother, $\alpha = .91$ for father; stress: $\alpha s = .93$ for mother and father).

Adolescent depressive symptoms. Adolescents’ depressive symptoms were measured using the 20 item CES-D scale (Radloff, 1977). The scale asked adolescents to rate how often they felt or behaved a certain way during the past week (e.g., “My sleep was restless”; “I talked less than usual”) on a 4-point scale (0 = *rarely or none of the time/less than 1 day*; 3 = *most or all of the time/5-7 days*). Mean scores of the sum of the 20-item scale were used (Cronbach $\alpha = .83$), and higher numbers indicated higher levels of depressive symptoms.

Adolescent anxiety symptoms. Anxiety symptoms were assessed using four items adapted from the GAD-7 (*Generalized Anxiety Disorder*) scale (Spitzer,

Kroenke, Williams, & Löwe, 2006). Items asked adolescents to indicate how often they had been bothered by four problems over the last 2 weeks (e.g., “feeling nervous, anxious, or on edge”; “trouble relaxing”). Responses were rated on a 4-point scale (0 = *not at all*; 3 = *nearly every day*). Mean scores were used. The measure showed good reliability (Cronbach $\alpha = .75$).

Adolescent delinquency. Delinquency was assessed using items from the “rule-breaking behaviors” subscale of the Youth Self-Report (Achenbach, 2001). One item “I feel guilty after doing something I shouldn’t do” was dropped due to a low factor loading from preliminary factor analysis. The refined measure has 13 items and asks how true each item is in describing the adolescent within the past 6 months (e.g., “I hang around with kids who get in trouble”; “I smoke, chew, or sniff tobacco”). Responses were rated on a 3-point scale (0 = *not true*; 2 = *often true or very true*). Measurement reliability was good (Cronbach $\alpha = .70$).

Covariates. All covariates were reported by adolescents. Covariates included adolescent sex (0 = *male*, 1 = *female*), age, and nativity (0 = *foreign born*, 1 = *U.S. born*).

Data Analyses

We obtained descriptive statistics using SPSS 24 and conducted path analyses using Mplus 8 (Muthén & Muthén, 1998-2017). First, demographic covariates (i.e., sex, age, nativity), language brokering frequency, stress associated with translating for mothers or fathers, and cumulative risk index were entered (Model 1). Next, the two-way interaction term between cumulative risk and centered language brokering stress was entered (Model 2). Each model was constructed for language brokering for mothers and fathers separately to avoid multicollinearity problems. We used full information maximum likelihood (FIML) to account for missing data. Correlations among depressive symptoms, anxiety, and delinquency were specified in all models to account for intercorrelations among the outcome variables. All models were just-identified.

To examine adolescent sex differences in the relations between language brokering experiences and adjustment outcomes, we conducted multigroup modeling with adolescent sex as a grouping variable. We tested if constraining each path to be equal between girls and boys significantly decreased the model fit, as indicated by significant chi-square difference tests. Finally, to examine differences between mother and father models, we conducted z tests (Iacobucci, 2008) on paths that were found to be statistically significant in

either model. We used z tests instead of multigroup modeling, because the two models were not about two independent groups, given that language brokering experiences regarding mothers and fathers were both reported by the same adolescents.

Results

Descriptive Statistics

Regarding the frequency of each cumulative risk, 24% of the adolescents ($n = 147$) were in nonintact household; 83% of adolescents' parents ($n = 502$) were undereducated; 53% of the families ($n = 317$) experienced financial hardship; 27% ($n = 162$) had neighborhood disadvantage; 24% of the adolescents ($n = 146$) had at least one parent with clinical depression; and 34% ($n = 206$) had at least one hostile parent. Among the risk factors, parental undereducation was likely to co-occur with neighborhood disadvantage ($r_\varphi = .10, p = .01$) and parental risk of clinical depression ($r_\varphi = .11, p = .008$). Family financial hardship was likely to co-occur with neighborhood disadvantage ($r_\varphi = .14, p < .001$) and parental risk of clinical depression ($r_\varphi = .10, p = .02$). Finally, parental hostility was likely to co-occur with neighborhood disadvantage ($r_\varphi = .08, p = .04$) and parental risk of clinical depression ($r_\varphi = .13, p = .001$).

Descriptive statistics and correlations among key variables are shown in Table 1. Paired sample t tests showed that adolescents performed language brokering more frequently for mothers ($M = 3.13, SD = 1.08$) than for fathers ($M = 2.45, SD = 1.15$), $t(557) = 17.78, p < .001$ and that adolescents' stress from language brokering was also greater for mothers ($M = 1.84, SD = 0.73$) than for fathers ($M = 1.71, SD = 0.76$), $t(506) = 5.83, p < .001$. The difference in language brokering stress remained statistically significant after controlling for the differences in language brokering frequency for mothers versus fathers, $F(1, 506) = 34.04, p < .001$. In addition, independent samples t tests showed that girls reported greater stress from language brokering for their mothers ($M = 1.90, SD = 0.73$) than boys ($M = 1.76, SD = 0.71$), $t(596) = 2.40, p = .017$, and that girls tended to language broker for their mothers marginally more frequently ($M = 3.20, SD = 1.07$) than boys ($M = 3.03, SD = 1.10$), $t(601) = 1.88, p = .06$.

Stress and Frequency of Language Brokering, Cumulative Risk, and Adolescent Outcomes

As shown in Table 2 (Model 1), the cumulative risk in the adolescents' family context was associated with adolescents' psychological and behavioral

Table 1. Zero-Order Bivariate Correlations and Descriptive Statistics Among Key Variables.

	1	2	3	4	5	6	7	8	9	10	11
1. Sex	—										
2. Age	-.04	—									
3. Nativity	.02	-.20***	—								
4. Cumulative risk	-.01	.01	-.04	—							
5. LB stress (mother)	.10*	-.02	-.05	.11*	—						
6. LB stress (father)	.04	-.05	-.07	.08	.75***	—					
7. LB frequency (mother)	.08	.01	-.14**	.04	.27***	.21***	—				
8. LB frequency (father)	-.01	-.01	-.10*	-.01	.22***	.29***	.67***	—			
9. Depressive symptoms	.08*	-.08	-.07	.12**	.32***	.33***	.06	.01	—		
10. Anxiety	.10*	-.03	-.02	.10*	.33***	.29***	.13**	.04	.61***	—	
11. Delinquency	-.05	.16***	-.02	.14**	.11**	.11*	-.05	-.13**	.33***	.34***	—
<i>M (SD)</i>	0.54 (0.50)	12.41 (0.97)	0.75 (0.43)	2.45 (1.19)	1.83 (0.73)	1.70 (0.76)	3.12 (1.08)	2.45 (1.15)	0.56 (0.38)	0.69 (0.61)	0.24 (0.20)
Minimum	0	11	0	0	1	1	1	1	0	0	0
Maximum	1	15	1	6	4.82	5.00	6.00	6.00	2.55	3	1.08
<i>n</i>	604	604	604	604	598	511	603	559	604	603	604

Note. Sex: 0 = male, 1 = female. Nativity: 0 = foreign born, 1 = U.S. born. LB = language brokering.

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

Table 2. Path Analyses Predicting Mexican American Adolescents' Psychosocial Adjustment.

	Model 1-1 Mother			Model 1-2 Father			Model 2-1 Mother			Model 2-2 Father		
	<i>b</i>	<i>SE</i>	β	<i>b</i>	<i>SE</i>	β	<i>b</i>	<i>SE</i>	β	<i>b</i>	<i>SE</i>	β
Depressive symptoms												
Sex	.04	.03	.05	.06	.03	.08	.03	.03	.04	.06	.03	.08
Age	-.04*	.02	-.09	-.03	.02	-.06	-.03*	.02	-.08	-.03	.02	-.06
Nativity	-.07*	.04	-.08	-.07	.04	-.08	-.07	.04	-.08	-.07	.04	-.08
Cumulative risk	.03*	.01	.08	.03	.01	.08	.02	.01	.07	.03	.01	.08
LB stress	.17***	.02	.32	.17***	.02	.34	.07	.05	.14	.20***	.05	.39
LB frequency	-.02	.01	-.05	-.04*	.02	-.11	-.01	.03	-.04	-.04*	.02	-.11
LB stress \times Cumulative risk							.04*	.02	.19	-.01	.02	-.05
Anxiety												
Sex	.08	.05	.06	.10*	.05	.09	.07	.05	.06	.10*	.05	.09
Age	-.02	.03	-.02	-.00	.03	-.01	-.01	.03	-.02	-.01	.03	-.01
Nativity	-.01	.06	-.00	-.02	.06	-.01	-.00	.06	-.00	-.02	.06	-.01
Cumulative risk	.03	.02	.07	.03	.02	.06	.03	.02	.06	.03	.02	.06
LB stress	.26***	.03	.31	.23***	.04	.29	.18*	.08	.21	.26**	.08	.33
LB frequency	.02	.02	.03	-.03	.02	-.05	.02	.05	-.03	-.03	.02	-.05
LB stress \times Cumulative risk							.03	.03	.10	-.01	.03	-.04
Delinquency												
Sex	-.02	.02	-.06	-.02	.02	-.05	-.02	.02	-.05	-.02	.02	-.05
Age	.03***	.01	.16	.03**	.01	.15	.03***	.01	.16	.03**	.01	.14
Nativity	.01	.02	.01	-.01	.02	-.02	.00	.02	.01	-.01	.02	-.02
Cumulative risk	.02**	.01	.13	.02*	.01	.08	.02**	.01	.13	.01	.01	.08
LB stress	.04**	.01	.13	.04***	.01	.16	.06*	.03	.21	.10***	.03	.38
LB frequency	-.02*	.01	-.09	-.03***	.01	-.18	-.02*	.01	-.09	-.03***	.01	-.18
LB stress \times Cumulative risk							-.01	.01	-.09	-.02*	.01	-.24

Note. Correlations among the three outcome variables were specified in the models. Sex: 0 = male, 1 = female. Nativity: 0 = foreign born, 1 = U.S. born. LB = language brokering. $n = 598$ for mother models and $n = 511$ for father models.

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

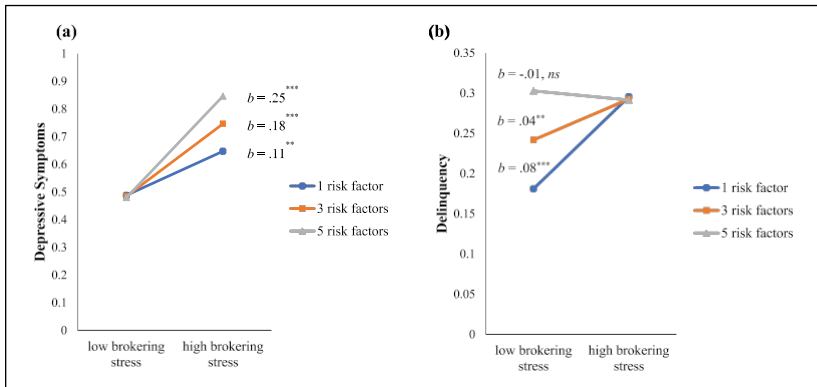


Figure 1. Moderating effect of family cumulative risk for (a) the relation between the stress of language brokering for mothers and depressive symptoms and (b) the relation between the stress of language brokering for fathers and delinquency.

problems. Being exposed to a higher number of risk factors was associated with more delinquent behaviors after controlling for the effects of demographic covariates. In addition, higher levels of language brokering stress were associated with a higher level of depression, anxiety, and delinquency. Turning to language brokering frequency, controlling for the stress component of language brokering, frequency of language brokering for mothers was associated with lower levels of delinquent behaviors. Similarly, controlling for language brokering stress, frequency of language brokering for fathers was associated with lower levels of depressive symptoms and delinquent behaviors.

In Model 2, we examined the interaction effects between the cumulative family risk and adolescents' language brokering stress in predicting their psychological and behavioral adjustment, above and beyond the main effects of each of the variables. As shown in Table 2 (Model 2), we observed a significant interaction between cumulative risk and adolescent stress from language brokering for mothers in predicting adolescent depressive symptoms. The interaction was then probed using simple slope techniques (Aiken & West, 1991). Figure 1a shows the levels of depressive symptoms for high versus low levels of language brokering stress given different levels of family cumulative risk factors (i.e., 1 risk factor, 3 risk factors, and 5 risk factors). The relation between language brokering stress and depressive symptoms was stronger when adolescents were exposed to more risk factors, suggesting that severe cumulative risk may exacerbate the negative effects of language brokering stress on depressive symptoms.

Turning to the effects of adolescent language brokering for their fathers, we found a statistically significant interaction between language brokering stress and cumulative risk for delinquent behaviors. Interestingly, simple slope analyses indicated that the relation between brokering stress and delinquency was stronger when they were exposed to *fewer* risk factors (Figure 1b). Specifically, when adolescents were exposed to only one contextual risk, high stress in language brokering for fathers was significantly related to delinquency; however, adolescents who were exposed to five familial risk factors displayed high delinquency regardless of the level of brokering stress. These results suggest that severe cumulative risk may override any negative effects of language brokering stress on delinquency.

Moderation of Adolescent and Parent Sex

We found significant adolescent sex differences in the relations between language brokering stress and depressive symptoms in both mother and father models, mother: $\Delta\chi^2(1) = 5.40, p = .02$; father: $\Delta\chi^2(1) = 4.35, p = .04$. In both models, the relations were stronger for girls (mother: $b = 0.10, SE = 0.05, p = .07$; father: $b = 0.23, SE = 0.06, p < .001$) than boys (mother: $b = 0.03, SE = 0.05, p = .60$; father: $b = 0.17, SE = 0.05, p = .001$). No sex differences were found in other paths including the interaction effects.

Regarding differences between mother and father models, the interaction effect of language brokering stress and cumulative risk on delinquency was stronger in the father model ($z = 10.61, p < .001$), whereas the interaction effect on depressive symptoms was stronger in the mother model ($z = -8.49, p < .01$). In addition, given no cumulative risk, the main effects of language brokering stress on depressive symptoms ($z = 3.54, p < .01$) and delinquency ($z = 4.01, p < .001$) were stronger for fathers than that for mothers.

Discussion

The purpose of this study is to disentangle the mixed findings in the literature about the consequences of language brokering by separating the stress of language brokering from the frequency of language brokering and by investigating the role of family context. We find that, on average, language brokering stress is associated with Mexican American adolescents' adjustment problems, including depressive symptoms, anxiety, and delinquency, controlling for language brokering frequency. Interestingly, controlling for language brokering stress, brokering frequency is sometimes associated with fewer adjustment problems. More importantly, we find that the cumulative risk of the adolescents' family contexts moderates the link between language

brokering stress and psychological and behavioral adjustment. Specifically, the relation between stress of language brokering for mothers and adolescents' depressive symptoms is stronger for families with a higher cumulative risk. In contrast, with a high cumulative risk, Mexican American adolescents are likely to exhibit delinquent behaviors, regardless of the levels of stress from translating for fathers, whereas a positive association exists between the stress of language brokering for fathers and delinquency with a low cumulative risk.

Our study suggests that one possible reason for the mixed findings in the literature may have been due to the overlook of the subjective feelings about language brokering. As postulated by the adaptive culture framework (García et al., 1996; White et al., 2018), language brokering, an example of the adaptive culture in Mexican American families, can confer both costs and benefits. On one hand, it seems that holding the frequency of language brokering constant, adolescents who perceive language brokering tasks to be more stressful are more likely to exhibit adjustment problems. On the other hand, holding the stress of language brokering constant, adolescents who perform language brokering tasks more often seem to exhibit fewer psychological and behavioral problems. These findings are also consistent with those from previous empirical studies with adolescent language brokers. One study found that Latino language brokers who often translate in high-stakes contexts (i.e., stressful situations that require accurate translation; e.g., medical or legal documents) exhibit negative psychological outcomes, but those that frequently translate in low-stakes (e.g., at a restaurant) or everyday (e.g., notes from the school) contexts do not (Anguiano, 2018). Similarly, another recent study found that Chinese American adolescents who feel efficacious about brokering in adolescence exhibit fewer psychological and behavioral adjustment problems in emerging adulthood relative to those that are stressed and burdened about brokering, regardless of how often they engaged in language brokering (Shen, Kim, & Benner, 2019). Therefore, whereas language brokering stress is associated with developmental costs, providing frequent language brokering per se does not necessarily jeopardize adolescents' psychological and behavioral well-being and can even confer developmental benefits when adolescents do not perceive the practice as stressful.

Also guided by the adaptive culture framework (García et al., 1996; White et al., 2018), we further found a significant moderating effect of the family context for the influence of language brokering stress. In line with the cumulative risk perspective (Evans et al., 2013; Sameroff et al., 1993), our findings suggest that the relation between stress of language brokering for mothers and adolescents' depressive symptoms is stronger for families with a higher cumulative risk. Such a moderating role of the family context is consistent

with previous research that showed that language brokers have poorer psychological health when their families experienced economic hardship (Kwon, 2014) and when they perceive their parents as unsupportive or psychologically controlling (Hua & Costigan, 2012; Oznobishin & Kurman, 2009). Our findings further extend previous knowledge by moving beyond examining a single demographic, socioeconomic, or parental psychological and behavioral risk factor and by stressing the influence of the *cumulative* risk of the family context. It seems that the contextual disadvantage accumulated from various family risk factors dramatizes the developmental costs of language brokering stress for adolescent psychological well-being.

It is worth noting that our results also suggest that the main negative effect of language brokering stress in the mother model becomes nonsignificant once the family context is considered and when there is no cumulative risk. That is, when adolescents provide brokering in well-protected family contexts with no risk as operationalized in this study, the stress of brokering for mothers is *not* related to adolescent depressive symptoms. Previous qualitative research suggested that the majority of brokering activities are perceived by adolescents in immigrant families as “normal” activities and are not strongly linked to negative outcomes (Dorner et al., 2008). Extending this finding, our study further suggests that adolescents may not necessarily exhibit negative outcomes even when they are involved in stressful translation tasks, provided that such translation activities are carried out in a risk-free family environment.

Interestingly, a different pattern of interaction emerged for the effect of language brokering for fathers on adolescents’ delinquency. There seems to be an overriding effect of cumulative risk, such that when cumulative risk is high, adolescents are likely to exhibit delinquent behaviors regardless of their language brokering stress. However, when adolescents experience less cumulative risk, those adolescents who perceive more stress due to language brokering are likely to exhibit more delinquent behaviors. One possible explanation for the two different patterns of interactions is that there may be a difference in the extent to which language brokering stress is associated with different domains of adjustment. Recent studies have found that language brokering is more closely related to psychological than behavioral problems (Kam, 2011; Kam & Lazarevic, 2014). Our descriptive analyses also suggest that the stress of language brokering for both parents has a moderate relation to psychological problems (i.e., depressive symptoms, anxiety), compared with only a small relation to behavioral delinquency. Thus, it may be that the weaker association with behavioral delinquency is more easily overridden by larger effects of other predictors, such as cumulative family risk.

Alternatively, the two patterns of interactions may also suggest a moderation effect by parent sex. Mexican American adolescents experience more day-to-day interactions with their mothers and more distant relationships with fathers (Crockett, Brown, Russell, & Shen, 2007). For adolescents with English-limited parents, these distinct interaction patterns may indicate the need for more diverse and difficult translating tasks for mothers than fathers. Consistent with the previous evidence, our study suggests that language brokering for fathers is a less frequent, less stressful, and less impactful experience for adolescents than that for mothers. Our moderation analyses further suggest that the effect of the stress of language brokering for fathers is detectable only when there is low cumulative risk. In contrast, when there is high cumulative risk, the effect of stress of language brokering for fathers is overridden by the more impactful family cumulative risk.

We also found sex differences in adolescents' language brokering experiences. In immigrant Latino families, gender role socialization requires girls to spend more time with family members and to fulfill more familial responsibilities (Raffaelli & Ontai, 2004). However, evidence regarding sex differences in language brokering has been limited and mixed in the literature, with some supporting the gender role socialization notion (Buriel et al., 2006; Chao, 2006) and others contradicting it documenting no significant sex difference (Love & Buriel, 2007). Our study found that girls reported marginally more frequent language brokering for mothers (but not for fathers) compared with boys, which provides limited support for the gender role socialization notion. Surprisingly, we also found that girls reported greater stress for providing language brokering for mothers than boys, and that the stress of language brokering for both parents more strongly predicted depressive symptoms among girls than boys. Although no prior empirical research examined adolescent sex differences in language brokering stress per se, our finding is still somewhat in contrast to the existing evidence that adolescent Latinas feel more favorable about language brokering than their male counterparts (Buriel et al., 2006; Love & Buriel, 2007). More studies are needed to investigate potential reasons for the discrepancy. One possible future direction is to investigate the extent to which Mexican American adolescent girls and boys endorse traditional gender roles (e.g., girls willingly taking on more familial responsibilities versus being demanded by parents) as an explanatory mechanism.

Several important practical implications can be drawn from the current findings. First, on average, the stress associated with language brokering that some adolescents experience is a significant risk factor for both their psychological and behavioral problems. One suggestion is for policy makers and individuals who work directly with immigrant families to provide professional

translation services with regard to particularly challenging translation tasks (e.g., brokering in medical contexts). There is qualitative, quantitative, and physiological evidence that suggests that brokering in medical contexts can be particularly stressful for young brokers (Corona et al., 2012), causing acute stress response (Kim, Zhang, Zeiders, Sim, & Gleason, 2018) and leading to psychological problems in the young brokers (Anguiano, 2018). However, it is important to note that the language brokering practice per se is not necessarily a risk factor and can even confer benefits to brokers' well-being if practiced in a low-stress context (Anguiano, 2018). Second, our findings highlight the critical role of family cumulative risk for adolescent language brokers' well-being. Considering that the cumulative risk operationalized in this study involves important parental risks (i.e., depression and hostile parenting), interventions may focus on reducing parents' psychological distress and promoting positive parenting practices to improve the overall quality of adolescents' family environment and safeguard their healthy development.

Our study is not without limitations. Although we selected six interrelated risk factors to provide a comprehensive picture of adolescents' family context, there are certainly other risk factors not assessed in the current investigation. Future studies may investigate how other family risk factors, such as marital conflicts or parental experiences of discrimination, impact the consequences of language brokering experiences. Furthermore, our study is limited in its cross-sectional design. Although we constructed our analytical model firmly based on theoretical frameworks and prior empirical evidence, causal inferences cannot be made due to the lack of temporal ordering among variables. We caution that alternative directions of effects or bidirectional relations may exist among study variables. For example, it could be that those who are more delinquent and are more resistant to language brokering report more brokering stress. Thus, a direction for future research is to use longitudinal designs to examine the replicability of the current findings, as well as any alternative or bidirectional relations.

Another limitation of the current study lies in the measurement of adolescent adjustment. The measures varied in their referenced time, such that the measure for depressive symptoms asked adolescents to reflect on their experiences in the past week, whereas the anxiety measure asked about experiences in the past 2 weeks, and the delinquency measure the past 6 months. Although this inconsistency in measurement limits the extent to which the effects of language brokering frequency and stress are comparable across outcomes, our results can be compared with other studies that use the same outcome measures, as we maintained the time frames of the original scales. Finally, participants in our study were recruited from a metropolitan area in Central Texas where there were a large percentage of Mexican Americans.

While the ethnic density in the communities and school districts makes this region ideal for the recruitment of Mexican American adolescents for the purpose of this study, whether our findings can be generalized to other geographic regions with lower ethnic densities is an open question. Thus, another future direction would be to examine the replicability of the current findings with samples of language brokers from different geographic regions.

Notwithstanding the limitations, this study is one of the first to investigate the distinct role of the stress of language brokering separately from that of the frequency of language brokering. Our findings highlight that language brokering stress, but not frequency, is associated with adolescents' adjustment problems. Furthermore, our study underscores the importance of examining the family context in assessing the consequences of language brokering experiences for adolescents' well-being. The findings point to the detrimental role of family cumulative risk, which either exacerbates the negative effect of language brokering stress for adolescents' psychological adjustment or undermines adolescents' behavioral well-being to the extent that it overrides any negative influence of language brokering stress.

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