Cultural Diversity and Ethnic Minority Psychology
2017, Vol. 23, No. 2, 230–243

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1099-9809/17/$12.00 http://dx.doi.org/10.1037/cdp0000117

Longitudinal Measurement Equivalence of Subjective Language Brokering Experiences Scale in Mexican American Adolescents

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Objective: Language brokering occurs frequently in immigrant families and can have significant implications for the well-being of family members involved. The present study aimed to develop and validate a measure that can be used to assess multiple dimensions of subjective language brokering experiences among Mexican American adolescents. ***Method:*** Participants were 557 adolescent language brokers (54.2% female, $M_{age.wave1} = 12.96$, $SD = .94$) in Mexican American families. ***Results:*** Using exploratory and confirmatory factor analyses, we were able to identify 7 reliable subscales of language brokering: *linguistic benefits*, *socioemotional benefits*, *efficacy*, *positive parent–child relationships*, *parental dependence*, *negative feelings*, and *centrality*. Tests of factorial invariance show that these subscales demonstrate, at minimum, partial strict invariance across time and across experiences of translating for mothers and fathers, and in most cases, also across adolescent gender, nativity, and translation frequency. Thus, in general, the means of the subscales and the relations among the subscales with other variables can be compared across these different occasions and groups. Tests of criterion-related validity demonstrated that these subscales correlated, concurrently and longitudinally, with parental warmth and hostility, parent–child alienation, adolescent family obligation, depressive symptoms, resilience, and life meaning. ***Conclusion:*** This reliable and valid subjective language brokering experiences scale will be helpful for gaining a better understanding of adolescents' language brokering experiences with their mothers and fathers, and how such experiences may influence their development.

Keywords: language brokering, longitudinal measurement equivalence, Mexican Americans, adolescents

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Among Latinos in the United States, 64% are of Mexican origin, and nearly half of Mexican adults in the United States are foreign born (Stepler & Brown, 2015). Nearly 70% of foreign-born Mexican immigrant adults do not speak English very well (Stepler & Brown, 2015) and are likely to rely on their children to translate from English to Spanish for them. As language brokers, these children translate or interpret a variety of things, at varying levels of frequency, for various people, in diverse places (Orellana, Dorner, & Pulido, 2003). These objective experiences of language brokering may evoke a range of subjective feelings about language brokering—feelings about their parents, themselves, and the language brokering process (Chao, 2006; Kam & Lazarevic, 2014b; Weisskirch & Alva, 2002). Although the literature has identified various subjective experiences of language brokering, we currently lack a well-established scale that focuses exclusively on measuring adolescents' subjective experiences of language brokering. It is important to develop a psychometrically sound language brokering scale that measures adolescents' subjective language brokering experiences in order to assure greater comparability of findings across studies and to help resolve discrepancies in the literature on the effects of language brokering (Kam & Lazarevic, 2014a). Such a scale may also advance our understanding of how subjective language brokering experiences are associated with adolescent language brokers' psychological outcomes. Therefore, we adopt items from commonly used language brokering scales and develop a new language brokering centrality subscale to create a multidimensional measure of subjective language brokering experiences and test its psychometric properties for use with Mexican American adolescents.

This article was published Online First June 30, 2016.

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Support for this research was provided through awards to Su Yeong Kim from National Science Foundation, Division of Behavioral and Cognitive Sciences, 0956123, Eunice Kennedy Shriver National Institute of Child Health and Human Development 5R03HD060045-02, Office of the Vice President for Research Special Research Grant from the University of Texas at Austin, and Eunice Kennedy Shriver National Institute of Child Health and Human Development 5R24HD042849-14 grant awarded to the Population Research Center at The University of Texas at Austin.

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Adolescents' Subjective Language Brokering Experiences

Previous studies indicate that certain aspects of subjective language brokering experiences may relate closely to adolescent psychological outcomes. For example, adolescents' negative feelings about language brokering are associated with more acculturative stress and depressive symptoms (Kam, 2011; Kam & Lazarevic, 2014b). These subjective experiences of language brokering are varied: Some adolescents consider language brokering to be embarrassing, whereas others think of language brokering as a way to enhance linguistic skills, build bicultural understanding, and care more for parents (Tse, 1996; Weisskirch & Alva, 2002). In order to understand better how various subjective language brokering experiences relate to psychological outcomes, it is important to have a measure that assesses the multifaceted nature of adolescents' subjective translating experiences. As the extant literature does not usually distinguish between translation and interpretation experiences, we interchangeably use the terms "language brokering" and "translating."

Most extant language brokering scales focus on items that test objective language brokering experiences (recipients of brokering, sites of brokering, tasks of brokering, translation frequency; Buriel, Perez, DeMent, Chavez, & Moran, 1998; Chao, 2006; Tse, 1995; Weisskirch & Alva, 2002). When subjective language brokering experiences are assessed, it is usually by means of an attitudes/feeling dimension that includes both positive and negative subjective translating experiences (Buriel et al., 1998; Tse, 1996; Weisskirch & Alva, 2002), which may gloss over the nuances within a given category. For example, items like "I feel good about myself when I translate for others" and "I think translating has helped me to care more for my parents" both measure positive subjective experiences of translation (Weisskirch & Alva, 2002). However, while the former item focuses on adolescent efficacy and may relate to adolescents' psychological outcomes, the latter focuses on relational experiences and may relate to general parent–child relationship quality. For this reason, we decided to expand the extant subjective dimensions to include more nuanced aspects of language brokering experiences. We also introduce a new dimension, *centrality* of language brokering, which captures language brokering as an important part of adolescents' social identity. The new scale will present a more comprehensive view of adolescents' subjective language brokering experiences by encompassing different perceptions of identity as language brokers, personal experiences around language brokering, and parent–child relationships tied to language brokering.

Social identity theory (Tajfel & Turner, 2004) posits that individuals develop their identity from their membership within certain social groups. Adolescent language brokers who act as mediators between their parents and the outside world (Valdés, 2003) may come to see language brokering as a part of their ethnic identity (Weisskirch, 2005). As people may rank hierarchically the various parts of their identity according to each part's proximity to their core definition of self (Sellers, Smith, Shelton, Rowley, & Chavous, 1998), adolescents who regard language brokering as a central part of their identity are more likely to define themselves as language brokers. For this reason, we propose and test language brokering centrality as a new dimension in our measure of subjective language brokering experiences. Social identity theory (Tajfel & Turner, 2004) also suggests that individuals tend to think of their social groups positively in order to maintain a positive image of self. When adolescents define themselves as language brokers (i.e., score high on language brokering centrality), they may see language brokering more positively when compared to those who score lower on language brokering centrality. Language brokering centrality may therefore have significant implications for adolescent outcomes, as studies on ethnic/racial centrality (examining ethnicity/race as a core part of the adolescent self-concept) show important links to adolescent outcomes, including prosocial tendencies and academic motivation (Rivas-Drake et al., 2014).

The extant literature suggests that adolescents have various psychological experiences when they translate. Prior language brokering scales have demonstrated that language brokers may experience linguistic benefits (e.g., strengthen English skills; Weisskirch & Alva, 2002), socioemotional benefits (e.g., feel independent and mature; Tse, 1996), a sense of efficacy (e.g., feel confident at translating; Kam & Lazarevic, 2014b), and negative feelings (e.g., disappoint parents by translating poorly; Kim et al., 2014). As language brokering involves using two languages, the linguistic benefits of brokering include improving both the English and heritage language skills of brokers (Dorner, Orellana, & Jiménez, 2008). The socioemotional benefits include having more opportunities to practice intrapersonal and interpersonal skills, such as feeling mature because of language brokering or learning to communicate more effectively with parents and other individuals for whom brokers are translating (Orellana et al., 2003; Weisskirch & Alva, 2002). Adolescents may derive a sense of efficacy from translating when they are good at it and can translate correctly for their parents (Kam & Lazarevic, 2014a). On the other hand, adolescents may feel negatively about language brokering: for example, feeling impatient or wanting to do other things rather than translating for parents (Kim et al., 2014), getting nervous when the translating tasks are hard (Corona et al., 2012), or feeling embarrassed about translating (Weisskirch & Alva, 2002). By assessing items pertaining to linguistic benefits, socioemotional benefits, sense of efficacy, and negative feelings, the current study intends to capture more nuanced dimensions of subjective translating experiences.

In addition to the above-mentioned dimensions, which are more focused on the language brokers themselves, the language brokering-related parent–child relationship is also a central aspect of language brokering (Kim et al., 2014). As parents are the most frequent recipients of brokering (Orellana et al., 2003), adolescents' perceptions of their parents, or their evaluations of parent–child relationships (e.g., caring more for parents or respecting parents less) when they translate, may be important dimensions of their brokering experiences. Language brokering for parents seems to increase adolescent language brokers' understanding of their parents and helps them develop trusting relationships with parents (Chao, 2006; DeMent, Buriel, & Villanueva, 2005). At the same time, adolescents may feel that their parents have come to depend on them too much. Adolescents who translate may also feel that they are more knowledgeable than their parents are (Kim et al., 2014). To understand aspects of parent–child relationships that are specifically

related to language brokering, we include items assessing positive parent–child relationships tied to language brokering (language brokering experiences that foster more positive parent–child relationships) and parental dependence tied to language brokering (language brokering experiences in which adolescents feel that their parents depend on them) in the current study. Our purpose in focusing on these existing constructs of parent–child relationships tied to language brokering, and the benefits and negative feelings around language brokering, was to conduct a rigorous psychometric test of the more commonly examined subjective language brokering experiences already identified in the literature.

Measurement Equivalence Across Parent Gender, Time, Adolescent Gender, Adolescent Nativity, and Translation Frequency

There is a paucity of longitudinal research examining adolescent brokering experiences, and few studies distinguish between brokering for mothers versus fathers (Kam & Lazarevic, 2014a). Therefore, to promote future studies of this kind, our first and foremost goal is to test measurement equivalence of the proposed scale across translating for mothers versus fathers and across time. Mexican American families, especially new immigrants and those who cannot speak English well, usually emphasize patriarchal gender roles (Leaper & Valin, 1996). Traditionally, fathers function as authorities while mothers fulfill caretaking roles in the family (Updegraff et al., 2014). With respect to gender and language brokering, Morales, Yakushko, and Castro (2012) found that fathers in particular may feel that their traditional gender role as authority figures in the family may be compromised when children function as language brokers. In light of the different parenting roles in Mexican American families, it is important to test empirically whether language brokering for mothers versus fathers is differentially perceived by adolescent language brokers.

Most extant studies focus on language brokering for mothers only (e.g., Shen, Kim, Wang, & Chao, 2014), or include both parents but do not distinguish between them (e.g., Guan, Greenfield, & Orellana, 2014), making comparisons across parent gender difficult. There is some initial evidence that adolescent language brokering experiences may differ by parent gender. For example, Wu and Kim (2009) found that adolescent language brokers feel a stronger sense of burden as well as greater efficacy when translating for mothers. However, it is unknown whether this represents a true difference across parent gender or whether it is a measurement artifact due to adolescents' interpreting items differently when they are asked about translating for their mothers versus their fathers. Hence, a psychometrically sound subjective language brokering experience scale that functions similarly in assessing adolescents' perceived experiences of translating for mothers and fathers is urgently needed.

As adolescents develop cognitively, emotionally, and physically over time, they tend to feel more competent and confident about language brokering (Dorner et al., 2008). If so, adolescents may have more positive attitudes toward language brokering as a long-term effect of frequent translating (Tilghman-Osborne, Bámaca-Colbert, Witherspoon, Wadsworth, & Hecht, 2015), and may interpret items in the language brokering scale differently across time. Establishing measurement equivalence across time ensures that the underlying structure of the scale remains stable longitudinally (Coertjens, Donche, De Maeyer, Vanthournout, & Van Petegem, 2012). Having measures with longitudinal measurement equivalence is an important first step in hearkening to the call by Kam and Lazarevic (2014a) for future longitudinal investigations of language brokering.

In addition, previous studies have shown that various characteristics of adolescent brokers (adolescent gender, nativity, and translation frequency) relate to their translating experiences. Specifically, female (vs. male) adolescents are more likely to engage in language brokering, especially among Latino adolescents (Buriel et al., 1998; Chao, 2006). Foreign-born (vs. U.S.-born) language brokers have more positive feelings toward brokering (Niehaus & Kumpiene, 2014). Higher (vs. lower) brokering frequency is associated with a stronger sense of self-efficacy (Weisskirch, 2013). To ensure that these differences are not the result of different interpretations of the subjective language brokering experiences scale, it is important to establish measurement invariance across adolescent gender, nativity, and brokering frequency.

After establishing measurement equivalence for the subjective language brokering experiences scale, we also test its criterion-related validity with several constructs that encompass both general family relationships (distinct from language brokering-specific parent–child relationships) and individual outcomes. Previous studies have shown that positive language brokering experiences may be positively associated with positive parent–child relationships (e.g., parental closeness; Weisskirch, 2013) and positive individual outcomes (Oznobishin & Kurman, 2009; Weisskirch, 2013), and negative language brokering experiences may be positively associated with negative parent–child relationships (e.g., parental–child sense of alienation; Weisskirch, 2013) and negative individual outcomes (e.g., depressive symptoms; Kam & Lazarevic, 2014b). Therefore, we chose two measures of positive family relationships (i.e., parental warmth and family obligation), two positive individual outcomes (i.e., adolescent sense of resilience and life meaning), two measures of negative family relationships (i.e., parental hostility and parent–child sense of alienation), and a negative individual outcome measure (i.e., depressive symptoms) as criterion variables.

Present Study

Establishing a psychometrically sound, multidimensional scale of subjective language brokering experiences is an important first step toward advancing the future literature on the precursors and consequences of adolescent language brokering experiences. To accomplish this goal, our first aim is to test commonly investigated dimensions of existing language brokering scales, with the addition of a new dimension of language brokering centrality, to create a multidimensional subjective language brokering experiences scale using a sample of Mexican American adolescent language brokers. Our second aim is to establish measurement equivalence, ranging from the least restrictive configural, to metric, to strong, to the most restrictive strict factorial invariance (Millsap & Yun-Tein, 2004) of the language brokering scale across groups and across time. The third aim is to test the criterion-related validity of the subjective language brokering experiences scale with related constructs, as described above.

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Method

Participants

Participants in the current study are 557 adolescent language brokers (54.2% female) in Mexican American families from a metropolitan city in central Texas. The adolescents' ages ranged from 11 to 15 years old ($M = 12.96$, $SD = .94$). The majority of adolescents were born in the United States ($N = 420$, 75.4%). The majority of their parents were born in Mexico (fathers: $N = 268$, 98.9%; mothers: $N = 546$, 99.3%). On average, fathers were 41 years old ($SD = 6.67$) and mothers were 38 years old ($SD = 5.79$). Median and mean family income was in the range of $20,001 to $30,000. For both fathers and mothers, the median education level finished was middle school and the mean education level was some middle school. The majority of adolescents (76%) were living with both parents in the same household.

Procedure

A nonprobability sampling technique was used to recruit participants through public records, school presentations, and community recruitment in and around a large metropolitan city in central Texas from 2012 to 2014. Families qualified for the study if parents were of Mexican origin, with a child in middle school who had the responsibility of translating for at least one parent. If families met these qualifications and provided parent consent and child assent to participate, family visits were scheduled. During the family visits, each family member was paired with an interviewer, and the interviews were conducted simultaneously in separate spaces/rooms to ensure confidentiality of responses. Bilingual and bicultural interviewers read the questions aloud and entered the participant responses on a laptop computer. Questionnaires were prepared in both English and Spanish (first translated to Spanish and then back-translated to English). Both Spanish and English were presented together on the same questionnaires. The questionnaires took approximately 2 hr to complete.

In total, two waves of data (with an interval of approximately 1 year) have been collected. Of the 557 families participating in Wave 1, 79% also participated in Wave 2. At each wave, each participating family was compensated: $60 at Wave 1 and $90 at Wave 2. Attrition analyses were conducted to compare families who participated in both data collection waves and those who dropped out at Wave 2. Variables examined included adolescent age, gender, nativity, and frequency of translating for mothers and fathers; mothers' and fathers' age, nativity, and education level; and family income. We found no difference between groups, except that adolescents who continued participating tended to be younger, $t(555) = -4.44$, $p < .001$.

Measures

Language brokering. The current study measures adolescents' subjective experiences of language brokering for their mothers and fathers. We started with 65 items. For the existing six dimensions of subjective experiences, we adopted items from prior studies (Kim et al., 2014; Tse, 1996; Weisskirch & Alva, 2002). For the new centrality dimension of language brokering, we created six pilot items for the purpose of the current study. We pilot-tested these items with 21 adolescents in an iterative manner. That is, adolescents were asked how well they understood each item and whether or not each item seemed relevant to their experience of language brokering. We edited the scale after interviewing each participant. During the iterative process, items were dropped if they were not well understood, were not relevant, or showed little variability in scores among the participants. Ultimately, 26 items were used for the current study. Adolescents provided ratings for mothers, followed by ratings for fathers, on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Items in the final scale are presented in Table 1.

Adolescents reported the frequency of translating for each parent, using the following response scale: 1 (*never*), 2 (*a few times a year*), 3 (*a few times every 3 to 6 months*), 4 (*a few times a month*), 5 (*a few times a week*), and 6 (*daily*). We created a dichotomous variable of translation frequency for adolescent reports of translating for mothers and fathers at each wave separately. The median frequency of translating for mothers was a few times a week at both waves, and the median frequency of translating for fathers was a few times a month at both waves. Using consistent criteria for translating for mother and father, translation was described as either infrequent (i.e., a few times a month or less) or frequent (i.e., a few times a week or more). The percentage of adolescents who qualified as frequent translators was 64% at Wave 1 and 63% at Wave 2 for mothers, and 43% at Wave 1 and 37% at Wave 2 for fathers.

Descriptive information for all measures (means, standard deviations, Cronbach's alpha reliabilities) is presented in Tables 2 and 3. All measures demonstrated adequate reliability.

Parental warmth and hostility. Parental warmth and hostility were assessed using measures adopted from the Iowa Youth and Families Project (Ge, Best, Conger, & Simons, 1996). Parental warmth was measured with seven items about an affective dimension of parenting, such as "listen carefully" and "act supportive and understanding." Parental hostility was measured using six items assessing parents' engagement in hostile behaviors toward children, such as criticism, fighting, or arguing. Parents reported on a scale of 1 (*never*) to 7 (*always*). Higher mean scores reflect higher parental warmth and hostility.

Parent–child alienation. Parent–child alienation was assessed using the eight item *alienation* subscale of Armsden and Greenberg's (1987) Inventory of Parent and Peer Attachment. Parents reported their children's general sense of alienation from them on a scale of 1 (*strongly disagree*) to 5 (*strongly agree*). Sample items included, "My child has to rely on him/herself when he/she has a problem to solve," and "I don't understand what my child is going through these days." Higher mean scores reflect stronger parent–child alienation.

Family obligation. Family obligation was assessed using 13 items adopted from a family obligation scale developed by Fuligni, Tseng, and Lam (1999). Parents reported how important it is for their children to behave in various ways such as "treat you with respect" and "do well for the sake of the family." Parents reported on a scale of 1 (*not at all important*) to 5 (*very important*), with higher mean scores indicating a stronger sense of family obligation.

Depressive symptoms. Using the 20-item Center for Epidemiologic Studies of Depression Scale (Radloff, 1977), adolescents

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Table 1
Confirmatory Factor Analyses for Subjective Language Brokering Experiences Scale

Factor/item	$\chi^2(df)$	CFI	RMSEA	Factor loading M-W1	F-W1	M-W2	F-W2
Linguistic benefits of language brokering	61.03 (46)	.997	.035				
1. When I translate for my parent it strengthens my Spanish skills				.81	.99	.91	.90
2. When I translate for my parent it strengthens my English skills				.59	.61	.64	.74
3. I strengthen my Spanish vocabulary when I translate for my parent				.76	.77	.79	.94
Socioemotional benefits of language brokering	141.63 (88)	.986	.048				
4. I feel independent and mature when I translate for my parent				.49	.67	.72	.79
5. I feel useful (that my help is necessary) because I translate for my parent				.70	.81	.60	.60
6. I am in situations where I practice my social skills (interactions with others), because I translate for my parent				.72	.85	.76	.73
7. Because I translate for my parent, I have had to learn how to communicate effectively				.54	.65	.72	.72
Efficacy of language brokering	137.36 (89)	.993	.045				
8. I am good at translating for my parent				.88	.94	.83	.93
9. I am skilled at translating for my parent				.90	.89	.85	.93
10. I am effective (do what is expected) at translating for my parent				.59	.68	.72	.75
11. I translate correctly for my parent				.77	.82	.65	.81
Positive parent–child relationships tied to language brokering	133.24 (90)	.993	.042				
12. I understand my parent better because I translate for her				.66	.66	.77	.87
13. I desire to (want to) help my parent more because I translate for her				.72	.87	.82	.84
14. I feel a close bond to my parent because I translate for her				.83	.87	.94	.89
15. I think my parent's opinion is important because I translate for her				.84	.79	.80	.78
Parental dependence tied to language brokering	55.57 (42)	.994	.035				
16. I feel more knowledgeable (know more) than my parent because I translate for her				.46	.61	.59	.67
17. My parent is not in control of the situation when she asks me to translate				.52	.51	.65	.71
18. I feel I am my parent's protector because I translate for her				.64	.77	.68	.70
Negative feelings about language brokering	104.59 (91)	.997	.024				
19. I become impatient when my parent asks me to translate for her				.75	.83	.84	.87
20. I feel desperation when my parent asks me to translate for her				.74	.79	.82	.90
21. I would rather do other things than translate for my parent				.72	.76	.65	69
22. I have disappointed my parent by translating poorly				.41	.47	.44	.42
Centrality of language brokering	69.40 (36)	.997	.059				
23. Being a translator for my parent is important to who I am				.86	.92	.76	.86
24. A part of who I am is being a translator for my parent				.87	.96	.88	.96
25. A key part of how I see myself is being a translator for my parent				.90	.91	.90	.92

Note. $N = 269$. CFI = comparative fit index; RMSEA = root-mean-square error of approximation; M = translating for mother; F = translating for father; W = wave.

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self-reported on levels of depressive symptoms during the past week on a scale of 1 (*rarely or none of the time*) to 4 (*most or all of the time*). Sample items included, "I could not shake off the blues even with help from family or friends," and "I thought my life had been a failure." Higher mean scores reflect more depressive symptoms.

Resilience. Adolescent resilience was measured using three items from the Connor and Davidson (2003) Resilience Scale: "I can deal with whatever comes," "I tend to recover easily after an illness or hardship," and "I am not easily discouraged by failure." Adolescents reported on a scale of 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores reflecting a greater sense of resilience.

Life meaning. Adolescent life meaning was measured using three items from the meaning in life questionnaire (Steger, Frazier, Oishi, & Kaler, 2006): "I understand my life's meaning," "My life has a clear sense of purpose," and "I have a good sense of what makes my life meaningful." Adolescents reported on a scale of 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores reflecting a greater sense of life meaning.

Analytic Approach

Analyses proceeded in five steps. First, we randomly split the sample into two subsamples for separate examinations of exploratory factor analysis (EFA; $n = 288$) and confirmatory factor analysis (CFA; $n = 269$). Second, using the first subsample, we conducted EFA with a geomin rotation to examine the factor structure of the measure. For EFA (and only for EFA), we nested the data for fathers and mothers across two waves, in order to generate a consistent factor structure across parent gender and waves. To determine the number of factors, we collectively con-

Table 2
Concurrent and Longitudinal Correlations Between Language Brokering Subscales and Criteria Variables for Mothers

Translating for mothers	Criteria variable						
	MW	MH	MA	MO	DS	RS	LM
Wave 1 language brokering to Wave 1 criteria variables							
1. Linguistic benefits	.06	−.08	−.03	.02	−.16***	.20***	.28***
2. Socioemotional benefits	.04	−.01	−.05	−.05	−.14***	.26***	.33***
3. Efficacy	.11**	−.08	−.08	.02	−.32***	.40***	.36***
4. Positive parent–child relationships	.12**	−.14***	−.09*	.04	−.18***	.26***	.43***
5. Parental dependence	.10*	−.14***	.01	.06	−.02	.21***	.26***
6. Negative feelings	.00	.09*	.11**	.02	.34***	−.14**	−.17***
7. Centrality	.13**	−.12**	−.03	.03	−.11	.25***	.37***
a	.83	.82	.81	.79	.83	.64	.86
Mean	6.06	2.58	2.15	4.38	1.56	3.51	3.74
SD	.79	1.06	.61	.45	.39	.64	.77
Wave 2 language brokering to Wave 2 criteria variables							
1. Linguistic benefits	.06	.01	−.06	.09	−.18***	.21***	.23***
2. Socioemotional benefits	.05	.00	−.02	.04	−.17***	.23***	.26***
3. Efficacy	.08	−.01	.00	.03	−.25***	.28***	.26***
4. Positive parent–child relationships	.11*	−.09	−.04	.06	−.22***	.19***	.27***
5. Parental dependence	.07	−.08	.05	.15**	−.02	.11*	.09
6. Negative feelings	−.11*	.11*	.16***	−.01	.20***	−.14**	−.11*
7. Centrality	.07	−.04	.03	.09	−.14**	.19***	.19***
a	.80	.81	.78	.81	.84	.73	.90
Mean	6.07	2.53	2.15	4.32	1.54	3.55	3.70
SD	.76	1.04	.55	.49	.39	.65	.79
Wave 1 language brokering to Wave 2 criteria variables							
1. Linguistic benefits	−.01	−.02	.07	.04	−.12*	.11*	.08
2. Socioemotional benefits	−.03	.00	.08	.00	−.12*	.18***	.11*
3. Efficacy	.06	.04	.00	.05	−.17***	.21***	.23***
4. Positive parent–child relationships	.06	−.07	−.01	.09	−.20***	.17***	.23***
5. Parental dependence	.05	−.11*	.04	.12*	.00	.13**	.10*
6. Negative feelings	−.06	.03	.08	.03	.16***	−.08	−.13**
7. Centrality	.07	−.10*	.06	.06	−.12*	.14**	.11*

Note. MW = maternal warmth; MH = maternal hostility; MA = mother–child alienation; MO = mothers' expectation of child family obligation; DS = adolescent depressive symptoms; RS = adolescent resilience; LM = adolescent life meaning; *a* = Cronbach's α.
* $p < .05$. ** $p < .01$. *** $p < .001$.

sidered model fit statistics (root-mean-square error of approximation, RMSEA), examination of scree plots, and theoretical evidence. Using the EFA factor loadings and previous literature on language brokering as a guide, we then identified items comprising each factor.

Third, using the second subsample of 269, we conducted a series of CFAs simultaneously for four groups of data: translating for mother at Wave 1, translating for father at Wave 1, translating for mother at Wave 2, and translating for father at Wave 2. This was done to assess whether the structures developed from the general EFA models were also tenable in the simple-structure CFAs in each of the groups, and in order to determine whether the CFA models could be used to run further tests of measurement equivalence. The fit for each model was evaluated using the comparative fit index (CFI) and the RMSEA. Good model fit is represented by CFI values of 0.95 or above, and RMSEA values of 0.08 or below (Coertjens et al., 2012).

Fourth, using the whole sample, we conducted multigroup CFA to examine the cross-group equivalence of the derived factors (Millsap & Yun-Tein, 2004). Because responses to the language brokering items were on a 5-point Likert scale, we treated them as ordered-categorical variables and followed the procedures for conducting factorial invariance tests for ordered-categorical variables (Millsap & Yun-Tein, 2004). Four types of factorial invariance (configural, metric, strong, and strict) were tested sequentially, from the least to the most restrictive (Kim et al., 2014). Configural invariance is established if a CFA model that allows the same set of items to form a factor in each group shows good model fit. Metric invariance exists if the strength of the relationship (i.e., factor loading) between each item and the latent construct under consideration is invariant across groups. Strong invariance exists when there is also similarity of the item thresholds across groups. Finally, strict invariance is established by adding a test of the similarity of the unique error variances associated with each item across groups. A partially invariant model may be obtained if some, but not all, items are invariant on each element of the factor structure across groups (Byrne, Shavelson, & Muthén, 1989). For example, when some but not all of the unique error variances associated with each item are similar across groups, partially strict invariance is achieved. To determine a partially invariant model, we freed the parameters one by one until partial invariance was demonstrated.

All EFAs and CFAs were conducted using Mplus 7.31 (Muthén & Muthén, 1998–2016). Because the items were ordered-categorical, we used a mean- and variance-adjusted weighted least squares estimator for all the analyses (Flora & Curran, 2004). The hypothesis of invariance is evaluated by comparing the model fit of the more restrictive model to the less restrictive model. To test

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Table 3
Concurrent and Longitudinal Correlations Between Language Brokering Subscales and Criteria Variables for Fathers

Translating for fathers	Criteria variable						
	FW	FH	FA	FO	DS	RS	LM
Wave 1 language brokering to Wave 1 criteria variables							
1. Linguistic benefits	−.05	.02	.06	−.05	−.19***	.26***	.30***
2. Socioemotional benefits	.07	.00	.03	.07	−.15**	.28***	.32***
3. Efficacy	.14*	.03	.04	.14*	−.32***	.37***	.35***
4. Positive parent–child relationships	.14*	−.09	.11	.14*	−.22***	.28***	.38***
5. Parental dependence	.07	−.19***	.00	.07	−.02	.18***	.21***
6. Negative feelings	−.03	.05	.04	−.03	.38***	−.16***	−.16***
7. Centrality	.14*	−.10	.09	.14*	−.09	.25***	.35***
a	.81	.81	.81	.82	—	—	—
Mean	5.77	2.13	2.20	4.27	—	—	—
SD	.93	.91	.61	.49	—	—	—
Wave 2 language brokering to Wave 2 criteria variables							
1. Linguistic benefits	.13	.08	−.10	.02	−.21***	.22***	.22***
2. Socio emotional benefits	.15	.04	−.06	−.01	−.20***	.25***	.23***
3. Efficacy	.30***	−.13	−.21**	.07	−.22***	.26***	.21***
4. Positive parent–child relationships	.27***	−.05	−.16*	.05	−.26***	.23***	.21***
5. Parental dependence	.22**	−.02	−.04	.10	−.08	.10*	.01
6. Negative feelings	−.02	−.04	−.06	.07	.21***	−.15**	−.15**
7. Centrality	.19*	−.05	−.05	−.03	−.14**	.16**	.16**
a	.87	.81	.81	.86	—	—	—
Mean	5.67	2.09	2.25	4.27	—	—	—
SD	1.03	.92	.59	.52	—	—	—
Wave 1 language brokering to Wave 2 criteria variables							
1. Linguistic benefits	.01	.07	.00	.07	−.17***	.12*	.10
2. Socioemotional benefits	.08	−.01	−.07	.09	−.15**	.12*	.06
3. Efficacy	.15	−.06	−.09	.05	−.22***	.25***	.21***
4. Positive parent–child relationships	.19*	−.07	−.05	.16*	−.21***	.17***	.15**
5. Parental dependence	.28***	−.16*	−.10	.14	−.10*	.14**	.03
6. Negative feelings	−.02	.00	.02	.02	.18***	−.07	−.12*
7. Centrality	.22**	−.04	.02	.15	−.15**	.14**	.12*

Note. Dashes indicate that the value has been reported in a prior part of the table. FW = paternal warmth; FH = paternal hostility; FA = father–child alienation; FO = fathers' expectation of child family obligation; DS = adolescent depressive symptoms; RS = adolescent resilience; LM = adolescent life meaning; *a* = Cronbach's α.
* $p < .05$. ** $p < .01$. *** $p < .001$.

this, the chi-square difference test ($\Delta\chi^2$) was conducted by using the DIFFTEST command provided by Mplus, and the change in comparative fit index criterion (ΔCFI) was relied upon. Hypothesis of invariance is rejected when $\Delta\chi^2$ has a probability lower than .05 ($p < .05$) and the ΔCFI decreases by .01 or more ($\Delta CFI \geq .01$) (Coertjens et al., 2012; Pendergast et al., 2015). The ΔCFI value was weighted more heavily than the $\Delta\chi^2$ in evaluating change in model fit because chi-square values are more sensitive to sample size and the chi-square difference test tends to be too stringent (Pendergast et al., 2015).

Finally, we conducted descriptive analyses for the final language brokering scale and examined correlations between subscales and several criteria measures to estimate the validity of the language brokering scale. There are a few methodological issues to be noted before reporting on the measurement invariance analyses. First, for invariance analyses across parent gender and waves, cross-group reports were not independent of each other. Therefore, instead of using multigroup CFA, we modeled data for translating for mothers and fathers or across waves within a single covariance matrix (Coertjens et al., 2012; Kim et al., 2014). Second, responses to some items were collapsed if they were not endorsed in a certain group. For example, we collapsed the response Category 1 (*strongly disagree*) with Category 2 (*disagree*) for one item, "I am effective (do what is expected) at translating for my mother," as no adolescent selected Category 1 when reporting on translating for mothers at Wave 2. Third, in some cases, we allowed residuals of some items to be correlated (e.g., residuals of the same item were allowed to be correlated between waves, or between mothers and fathers) to improve model fit when establishing the baseline CFA models (Coertjens et al., 2012).

Results

Factor Analyses of the Language Brokering Scale

In total, 26 items were included in EFA. Scree plots from the EFA results suggested that four to seven factors were acceptable. Model fit indices indicated that a 7-factor model would have the best fit (RMSEA = .041). Considering the previous literature on language brokering, we identified seven conceptually meaningful factors: *Linguistic benefits of language brokering* (three items), *socioemotional benefits of language brokering* (four items), *efficacy of language brokering* (four items), *positive parent–child relationships tied to language brokering* (four items), *parental dependence tied to language brokering*

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(three items), *negative feelings about language brokering* (four items), and *centrality of language brokering* (three items). One item ("I am aware of my mother's problems because I translate for her") was unclassified due to low factor loadings (<.40) and a lack of conceptual fit with the identified factors. Thus, this item was not included in future analyses. We next conducted a series of CFAs to establish model fit for each factor. Results (factor loadings and goodness of fit indices) are presented in Table 1. The results indicate a generally good model fit for all the factors. Loadings for all factors were greater than .40 and all of them were significant at $p < .001$.

Factorial Invariance Analyses of the Scale of Subjective Language Brokering Experiences

Factorial invariance across language brokering for mothers and fathers. We tested factorial invariance across language brokering for mothers and fathers at each wave. Results are presented in Table 4. For all subscales at both waves, strong invariance was established across language brokering for mothers and fathers. In fact, all the subscales reached strict invariance except four cases in which partially strict invariance was achieved. For *linguistic benefits of language brokering*, we found partially strict invariance at both waves upon freeing the residual variance of one item ("When I translate for my parent it strengthens my Spanish skills") at Wave 1 and one item ("I strengthen my Spanish vocabulary when I translate for my parent") at Wave 2. For *socioemotional benefits of language brokering*, we found partially strict invariance at Wave 1 after we freed the residual variance of one item, "I feel independent and mature when I translate for my parent." For *efficacy of language brokering*, we were able to establish partially strict invariance at Wave 2 after we freed the residual variance of one item, "I am good at translating for my parent."

Factorial invariance across waves. We tested factorial invariance across waves separately for language brokering for moth-

Table 4
Confirmatory Factor Analytic Model of Factorial Invariance Tests Across Language Brokering for Mothers and Fathers at Each Wave

Model	Wave 1						Wave 2					
	$\chi^2(df)$	CFI	RMSEA	$\Delta\chi^2(\Delta df)$	*p*	ΔCFI	$\chi^2(df)$	CFI	RMSEA	$\Delta\chi^2(\Delta df)$	*p*	ΔCFI
Linguistic benefits of language brokering												
Configural	9.93 (5)	.999	.042	—	—	—	12.41 (5)	.999	.058	—	—	—
Metric	9.31 (7)	.999	.024	.961 (2)	.618	.000	16.72 (7)	.999	.057	5.04 (2)	.081	.000
Strong	29.30 (15)	.996	.041	20.413 (8)	.009	−.004	34.23 (15)	.998	.054	18.01 (8)	.021	−.001
Strict	73.75 (18)	.986	.075	52.77 (3)	.000	−.010	134.13 (18)	.985	.122	94.86 (3)	.000	−.013
Partial strict	**42.15 (17)**	**.993**	**.052**	**15.13 (2)**	**.000**	**−.003**	**56.64 (17)**	**.995**	**.073**	**22.36 (2)**	**.000**	**−.003**
Socioemotional benefits of language brokering												
Configural	47.16 (13)	.991	.069	—	—	—	30.27 (12)	.996	.059	—	—	—
Metric	43.20 (16)	.993	.055	3.328 (3)	.344	.002	32.82 (15)	.996	.052	4.80 (3)	.187	.000
Strong	67.62 (27)	.990	.052	25.782 (11)	.007	−.003	72.03 (26)	.990	.064	42.48 (11)	.000	−.006
Strict	114.51 (31)	.979	.070	48.45 (4)	.000	−.011	**88.17 (30)**	**.987**	**.067**	**18.25 (4)**	**.001**	**−.003**
Partial strict	**80.10 (28)**	**.987**	**.058**	**24.99 (3)**	**.000**	**−.003**	—	—	—	—	—	—
Efficacy of language brokering												
Configural	24.70 (12)	.999	.044	—	—	—	18.84 (12)	.999	.036	—	—	—
Metric	24.85 (15)	.999	.034	2.85 (3)	.415	.000	19.41 (15)	.999	.026	1.21 (3)	.196	.000
Strong	50.84 (26)	.998	.041	28.29 (11)	.003	−.001	32.75 (26)	.999	.024	14.05 (11)	.230	.000
Strict	**72.66 (30)**	**.996**	**.051**	**21.69 (4)**	**.000**	**−.002**	140.46 (30)	.986	.092	100.09 (4)	.000	−.014
Partial strict	—	—	—	—	—	—	**87.32 (29)**	**.993**	**.068**	**5.078 (3)**	**.000**	**−.006**
Positive parent–child relationships tied to language brokering												
Configural	26.38 (14)	.998	.040	—	—	—	21.71 (15)	.999	.032	—	—	—
Metric	24.47 (17)	.999	.028	.81 (3)	.847	.001	22.96 (18)	.999	.025	1.95 (3)	.584	.000
Strong	44.66 (28)	.997	.033	21.25 (11)	.031	−.002	34.64 (29)	.999	.021	12.25 (11)	.345	.000
Strict	**60.80 (32)**	**.995**	**.040**	**16.99 (4)**	**.002**	**−.002**	**50.07 (33)**	**.998**	**.034**	**13.20 (4)**	**.010**	**−.001**
Parental dependence tied to language brokering												
Configural	3.88 (5)	1.000	.000	—	—	—	5.55 (4)	.999	.030	—	—	—
Metric	4.15 (7)	1.000	.000	.57 (2)	.751	.000	6.18 (6)	1.000	.008	1.27 (2)	.531	.001
Strong	17.42 (15)	.999	.017	13.46 (8)	.097	−.001	25.96 (14)	.996	.044	19.46 (8)	.013	−.004
Strict	**23.04 (18)**	**.998**	**.022**	**6.06 (3)**	**.109**	**−.001**	**27.30 (17)**	**.996**	**.037**	**.81 (3)**	**.848**	**.000**
Negative feelings about language brokering												
Configural	21.33 (11)	.998	.041	—	—	—	19.46 (14)	.999	.030	—	—	—
Metric	22.05 (14)	.998	.032	1.93 (3)	.587	.000	24.42 (17)	.999	.032	5.01 (3)	.171	.000
Strong	38.72 (25)	.997	.031	17.15 (11)	.104	−.001	46.54 (28)	.997	.039	21.81 (11)	.026	−.002
Strict	**54.45 (29)**	**.995**	**.040**	**16.60 (4)**	**.002**	**−.002**	**62.16 (32)**	**.994**	**.047**	**16.53 (4)**	**.002**	**−.003**
Centrality of language brokering												
Configural	7.05 (5)	1.000	.027	—	—	—	4.58 (4)	1.000	.018	—	—	—
Metric	10.24 (7)	1.000	.029	3.21 (2)	.201	.000	11.96 (6)	1.000	.048	6.34 (2)	.042	.000
Strong	25.51 (15)	.999	.035	15.13 (8)	.057	−.001	22.67 (14)	.999	.038	10.58 (8)	.227	−.001
Strict	**40.45 (18)**	**.998**	**.047**	**13.38 (3)**	**.004**	**−.001**	**56.76 (17)**	**.997**	**.073**	**35.15 (3)**	**.000**	**−.002**

Note. Final levels of invariance reached are highlighted in boldface type. Dashes represent not applicable. CFI = comparative fit index; RMSEA = root-mean-square error of approximation.

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ers and fathers. Results are presented in Table 5. Adolescents' reports of translating for mothers and fathers on all subscales reached strong invariance across waves. In fact, a strict invariance model was established for all the subscales except four cases in which partially strict invariance was achieved. Regarding *linguistic benefits of language brokering* for mothers, we found partially strict invariance upon freeing the residual variance of one item ("When I translate for my parent it strengthens my English skills"). With respect to *linguistic benefits of language brokering* for fathers, we found partially strict invariance by freeing the residual variance of one item ("I strengthen my Spanish vocabulary when I translate for my parent"). As to *socioemotional benefits of language brokering* for mothers, we established partially strict invariance after we freed the residual variance of one item, "Because I translate for my parent, I have had to learn how to communicate effectively." With respect to negative feelings when translating for mothers, we were able to establish partially strict invariance after freeing the residual variance of one item, "I would rather do other things than translate for my parent."

Factorial invariance across adolescent gender, nativity, and translation frequency. Our last three sets of factorial invariance analyses tested equivalence between language brokering done by boys versus girls, by U.S.-born versus foreign-born adolescents, and by adolescents who translated frequently versus infrequently. We tested factorial invariance across these groups separately for language brokering for mothers and fathers at each wave. As establishing factorial invariance across these variables is our secondary goal, we present only a summary of the highest level of invariance achieved in Table 6 (more detailed information is available upon request). Various levels of invariance were observed in the seven subscales regarding adolescents' reports of translating for mothers and fathers at each wave across adolescent gender, nativity, and translation frequency, including 65.5% strict invariance, 15.5% partial strict invariance,

Table 5
Confirmatory Factor Analytic Model of Factorial Invariance Tests Across Waves Separately for Language Brokering for Mothers and Fathers

Model	Language brokering for mothers						Language brokering for fathers					
	$\chi^2(df)$	CFI	RMSEA	$\Delta\chi^2(\Delta df)$	*p*	ΔCFI	$\chi^2(df)$	CFI	RMSEA	$\Delta\chi^2(\Delta df)$	*p*	ΔCFI
Linguistic benefits of language brokering												
Configural	7.31 (8)	1.000	.000	—	—	—	10.06 (8)	1.000	.022	—	—	—
Metric	10.54 (10)	1.000	.010	3.35 (2)	.187	.000	11.78 (10)	1.000	.018	1.30 (2)	.523	.000
Strong	18.67 (18)	1.000	.008	8.12 (8)	.422	.000	14.02 (18)	1.000	.000	2.94 (8)	.938	.000
Strict	59.09 (21)	.982	.057	50.09 (3)	.000	−.018	107.99 (21)	.985	.089	121.22 (3)	.000	−.015
Partial strict	**35.99 (20)**	**.992**	**.038**	**23.34 (2)**	**.000**	**−.008**	**51.52 (20)**	**.995**	**.055**	**52.70 (2)**	**.000**	**−.005**
Socioemotional benefits of language brokering												
Configural	37.22 (15)	.986	.052	—	—	—	23.84 (18)	.998	.025	—	—	—
Metric	44.13 (18)	.983	.051	7.23 (3)	.065	−.003	37.07 (21)	.995	.038	17.29 (3)	.001	−.003
Strong	61.37 (29)	.979	.045	17.40 (11)	.097	−.004	67.22 (32)	.990	.046	31.14 (11)	.001	−.005
Strict	86.05 (33)	.966	.054	27.55 (4)	.000	−.013	**86.13 (36)**	**.985**	**.052**	**21.66 (4)**	**.000**	**−.005**
Partial strict	**72.44 (32)**	**.974**	**.048**	**12.43 (3)**	**.006**	**−.005**	—	—	—	—	—	—
Efficacy of language brokering												
Configural	29.26 (19)	.998	.031	—	—	—	37.07 (19)	.998	.043	—	—	—
Metric	31.36 (22)	.998	.028	2.58 (3)	.460	.000	41.03 (22)	.998	.041	3.60 (3)	.308	.000
Strong	46.88 (33)	.997	.028	16.06 (11)	.139	−.001	50.26(33)	.998	.032	11.12(11)	.433	.000
Strict	**64.85 (37)**	**.994**	**.037**	**22.49 (4)**	**.000**	**−.003**	**89.61 (37)**	**.993**	**.052**	**44.99 (4)**	**.000**	**−.005**
Positive parent–child relationships tied to language brokering												
Configural	12.43 (19)	1.000	.000	—	—	—	14.23 (19)	1.000	.000	—	—	—
Metric	15.68 (22)	1.000	.000	2.98 (3)	.394	.000	16.35 (22)	1.000	.000	1.95 (3)	.584	.000
Strong	23.98 (33)	1.000	.000	8.03 (11)	.711	.000	30.48 (33)	1.000	.000	13.62 (11)	.255	.000
Strict	**75.58 (37)**	**.991**	**.043**	**60.08 (4)**	**.000**	**−.009**	**75.22 (37)**	**.994**	**.044**	**56.80 (4)**	**.000**	**−.006**
Parental dependence tied to language brokering												
Configural	4.26 (8)	1.000	.000	—	—	—	7.80 (8)	1.000	.000	—	—	—
Metric	4.93 (10)	1.000	.000	.61 (2)	.739	.000	8.66 (10)	1.000	.000	.68 (2)	.714	.000
Strong	7.53 (18)	1.000	.000	2.38 (8)	.967	.000	20.87 (18)	.996	.017	12.37 (8)	.136	−.004
Strict	**11.42 (21)**	**1.000**	**.000**	**4.04 (3)**	**.258**	**.000**	**28.07 (21)**	**.991**	**.025**	**8.01 (3)**	**.046**	**−.005**
Negative feelings about language brokering												
Configural	26.44 (19)	.996	.027	—	—	—	26.51 (19)	.998	.028	—	—	—
Metric	32.73 (22)	.995	.030	6.29 (3)	.098	−.001	29.48 (22)	.998	.025	2.81 (3)	.423	.000
Strong	40.18 (33)	.997	.020	7.28 (11)	.776	.002	33.63 (33)	1.000	.006	4.72 (11)	.944	.002
Strict	76.91 (37)	.981	.044	41.94 (4)	.000	−.016	**56.58 (37)**	**.995**	**.032**	**30.12 (4)**	**.000**	**−.005**
Partial strict	**58.49 (36)**	**.989**	**.034**	**20.52 (3)**	**.000**	**−.008**	—	—	—	—	—	—
Centrality of language brokering												
Configural	10.46 (8)	.999	.024	—	—	—	6.02 (8)	1.000	.000	—	—	—
Metric	11.74 (10)	1.000	.018	1.38 (2)	.501	.001	6.73 (10)	1.000	.000	.64 (2)	.727	.000
Strong	20.37 (18)	1.000	.015	8.81 (8)	.359	.000	11.54 (18)	1.000	.000	4.70 (8)	.790	.000
Strict	**25.02 (21)**	**.999**	**.019**	**4.86 (3)**	**.182**	**−.001**	**31.84 (21)**	**.999**	**.031**	**28.30 (3)**	**.000**	**−.001**

Note. Final levels of invariance reached are highlighted in boldface type. Dashes represent not applicable. CFI = comparative fit index; RMSEA = root-mean-square error of approximation.

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Table 6
Confirmatory Factor Analytic Model of Factorial Invariance Tests Across Adolescent Gender, Nativity, and Translation Frequency

Test	Gender	Nativity	Translation frequency
Language brokering for mother at Wave 1			
1. Linguistic benefits	Partial strict	Strict	Strict
2. Socioemotional benefits	Partial metric	Partial strong	Strict
3. Efficacy	Strict	Partial strong[a]	Strict
4. Positive parent–child relationships	Partial strict	Partial strict	Strict
5. Parental dependence	Partial metric	Partial strong	Partial metric
6. Negative feelings	Strict	Strict	Strict
7. Centrality	Strict	Strict	Strict
Language brokering for father at Wave 1			
1. Linguistic benefits	Partial metric	Strict	Strict
2. Socioemotional benefits	Strict	Partial strict[a]	Strict
3. Efficacy	Strict	Strict[a]	Strict
4. Positive parent–child relationships	Strict	Strict	Strict
5. Parental dependence	Partial strong	Partial strong	Strict
6. Negative feelings	Strict	Strict	Partial metric
7. Centrality	Strict	Strict	Strict
Language brokering for mother at Wave 2			
1. Linguistic benefits	Configural	Partial metric	Strict
2. Socioemotional benefits	Partial metric	Partial strict[a]	Partial strict
3. Efficacy	Strict[a]	Strict[a]	Strict[a]
4. Positive parent–child relationships	Strict	Strict	Strict[a]
5. Parental dependence	Partial strict	Partial strict	Partial metric
6. Negative feelings	Strict	Partial metric	Strict
7. Centrality	Strict	Strict	Strict
Language brokering for father at Wave 2			
1. Linguistic benefits	Partial strict	Strict	Partial strict
2. Socioemotional benefits	Partial metric	Strict[a]	Strict
3. Efficacy	Strict	Strict[a]	Strict
4. Positive parent–child relationships	Strict	Strict	Strict
5. Parental dependence	Strict	Partial strict	Strict
6. Negative feelings	Strict	Partial strict	Strict
7. Centrality	Partial strict	Strict	Strict

[a] Responses to some items were collapsed.

6.0% partial strong invariance, 11.9% partial metric invariance, and 1.2% configural invariance. The fact that 81.0% reached at least partial strict invariance suggests generally good measurement equivalence of the language brokering subscales across adolescent gender, nativity, and frequency of brokering.

Descriptive Statistics and Validity Estimates

We created four sets of subscale scores for translating for mothers and fathers at each wave, by averaging all items for each factor. Descriptive statistics and zero-order correlations between subscales are provided in Table 7. All subscales showed acceptable reliability. The results demonstrated two meaningful patterns. First, centrality of translating was generally associated with subscales capturing parent–child relationships in language brokering (i.e., positive parent–child relationships and parental dependence) and those capturing positive individual experiences of language brokering (i.e., linguistic benefits, socioemotional benefits, and efficacy), and negatively associated with negative feelings during translating. Second, subscales assessing parent–child relationships tied to language brokering were positively associated with subscales measuring positive individual experiences of language brokering, and positive parent–child relationships tied to language brokering were negatively associated with adolescent negative feelings during translating.

Descriptive statistics for the validity measures and zero-order correlations between subscales and validity measures (both concurrent and longitudinal) are presented in Tables 2 and 3. For the association between language brokering subscales and adolescent adjustment measures, we found that, in general, six of the subscales, excluding negative feelings, showed positive associations with positive individual outcomes (i.e., resilience and life meaning) and negative associations with individual maladjustment (i.e., depressive symptoms). Negative feelings during translating were negatively linked to measures of positive individual adjustment, and positively related to adolescent depressive symptoms. For the association between language brokering subscales (adolescent-reported) and measures of family relationships (parent-reported), we found that adolescents' reports of language brokering-related positive parent–child relationships and parental dependence, as well as efficacy and centrality of language brokering, were positively associated with parent-reported parental warmth, in general, and sometimes positively associated with family obligation, whereas they were negatively associated with parental hostility and parent–child alienation. The significant correlations, especially longitudinal correlations, between language brokering subscales and these validity variables suggest good predictive validity of the language brokering scale.

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Table 7
Correlations Between Language Brokering Subscales Across Parents and Waves

Subscale	1	2	3	4	5	6	7	*a*	Mean	*SD*
Language brokering for mother at Wave 1										
1. Linguistic benefits	—							.70	3.41	.80
2. Socioemotional benefits	.54***	—						.69	3.56	.72
3. Efficacy	.40***	.48***	—					.83	3.42	.72
4. Positive parent–child relationships	.44***	.53***	.52***	—				.81	3.64	.71
5. Parental dependence	.22***	.36***	.26***	.45***	—			.58	3.06	.72
6. Negative feelings	−.09*	−.13**	−.34***	−.29***	−.02	—		.71	2.47	.73
7. Centrality	.33***	.46***	.38***	.64***	.46***	−.17***	—	.86	3.51	.80
Language brokering for father at Wave 1										
1. Linguistic benefits	—							.82	3.38	.89
2. Socioemotional benefits	.67***	—						.81	3.48	.79
3. Efficacy	.52***	.58***	—					.87	3.39	.76
4. Positive parent–child relationships	.58***	.63***	.62***	—				.86	3.46	.82
5. Parental dependence	.38***	.43***	.36***	.55***	—			.65	2.86	.80
6. Negative feelings	−.07	−.07	−.21***	−.20***	.07	—		.77	2.40	.75
7. Centrality	.50***	.60***	.51***	.73***	.55***	−.12**	—	.92	3.40	.95
Language brokering for mother at Wave 2										
1. Linguistic benefits	—							.80	3.53	.81
2. Socioemotional benefits	.63***	—						.75	3.58	.71
3. Efficacy	.41***	.50***	—					.82	3.47	.64
4. Positive parent–child relationships	.51***	.59***	.48***	—				.88	3.54	.76
5. Parental dependence	.21***	.30***	.17***	.37***	—			.59	2.81	.72
6. Negative feelings	−.13**	−.12*	−.31***	−.25***	.07	—		.75	2.42	.69
7. Centrality	.39***	.51***	.34***	.66***	.46***	−.09	—	.87	3.34	.82
Language brokering for father at Wave 2										
1. Linguistic benefits	—							.90	3.48	.92
2. Socioemotional benefits	.76***	—						.84	3.45	.79
3. Efficacy	.56***	.65***	—					.90	3.41	.76
4. Positive parent–child relationships	.64***	.74***	.62***	—				.89	3.28	.83
5. Parental dependence	.28***	.45***	.31***	.48***	—			.67	2.65	.79
6. Negative feelings	−.17***	−.15**	−.22***	−.20***	.08	—		.79	2.39	.71
7. Centrality	.52***	.69***	.54***	.74***	.52***	−.13*	—	.92	3.17	.94

Note. *a* = Cronbach's α.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Discussion

With the rapid increase in the number of Mexican immigrant families in the United States in recent years (Brown & Stepler, 2015), the role of children and adolescents as cultural and linguistic intermediaries in these families has become vitally important for the healthy functioning of this large segment of the U.S. population. In order to better assess the experiences of adolescent language brokers, we developed a multidimensional measure of subjective language brokering experiences with a sample of Mexican American families. This scale includes seven distinct subscales: linguistic benefits, socioemotional benefits, efficacy, positive parent–child relationships, parental dependence, negative feelings, and brokering centrality. To ensure that our measure accurately detects developmental changes in brokering experiences as children age, and to assess brokering done for mothers and fathers, we established multioccasion factorial invariance of the subscales across adolescent reports about translating for mothers and fathers and over time. Additionally, in order to allow for meaningful comparisons across specific demographic subgroups of Mexican American adolescents, we tested for multigroup factorial invariance across adolescent gender, nativity, and brokering frequency. Finally, we established the preliminary validity of our measure by examining the interrelations among subscales, as well as the associations between the subscales and some of the theoretically relevant criteria variables.

Both exploratory and confirmatory factor analyses provided strong support for our multidimensional conceptualization of subjective language brokering experiences, as seven distinct factors emerged, including individual psychological experiences and parent–child relationships that are specifically tied to language brokering. Thus, future researchers using our scale will be able to assess more multifaceted and nuanced psychological experiences of language brokering compared to using a more general measure that combines all subjective experiences of language brokering together. Additionally, consistent with social identity theory (Tajfel & Turner, 2004), centrality of language brokering emerged as a separate dimension that could not be grouped with other subjective experiences of language brokering. The development and validation of this subscale, in particular, is an important contribution to the literature. Future researchers may investigate how the centrality of adolescents' identities as mediators connecting their parents and the outside world influences their broader sense of identity, such as racial/ethnic identity and general self-worth. It is noteworthy that all of our subscales reached, at minimum, partial strict invariance across adolescent reports for mothers and fathers at each wave. Our subscales also reached at least partial strict

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invariance across two waves for language brokering experiences for both mothers and fathers. These rigorous psychometric properties would allow not only for future examinations of relations among subscales of language brokering experiences and other variables, but also comparisons of mean levels of language brokering subscales both longitudinally and across brokering for mothers and fathers (Chen, 2008). Despite evidence suggesting different gender roles of fathers and mothers in Mexican American families (Morales et al., 2012; Updegraff et al., 2014), extant language brokering studies, many of which are conducted with Mexican American families, have not looked carefully into potential differences across children's experiences of language brokering for mothers and fathers (Kam & Lazarevic, 2014a). Thus, researchers interested in language brokering or more general parent–child interactions in Mexican immigrant families may use our scale to assess adolescent language brokering experiences separately by parent gender in order to enhance our knowledge of the ways in which adolescent perceptions of mothers and fathers may differ. As our measure generally showed strong psychometric properties, future studies using our language brokering scale can draw conclusions about the gender differences, if any, in adolescent experiences across parent–child dyads with more confidence, as such differences would not likely be due to measurement artifacts.

Furthermore, the majority of quantitative language brokering research to date has been cross-sectional. The few longitudinal studies that have been conducted have either examined the influence of early language brokering on later developmental outcomes (e.g., Kam & Lazarevic, 2014b; Shen et al., 2014) or examined the stability and change in only one particular aspect of language brokering experiences, such as negative feelings (Tilghman-Osborne et al., 2015). Still, no research, to our knowledge, has verified the longitudinal validity of constructs related to subjective language brokering experiences. Thus, our scale contributes to the field of language brokering research, as future longitudinal studies may use it to examine stability and change in multiple dimensions of subjective language brokering experiences.

The majority of our subscales demonstrated robust psychometric properties across demographic factors, including adolescent gender, nativity, and frequency of translation, with many of the subscales reaching strict invariance. Consequently, relations between our subscales of language brokering and other variables—for example, psychological and behavioral outcomes of adolescent language brokers—can be compared across these different demographic groups. Additionally, for those dimensions of language brokering that reached at least strong invariance, mean levels of adolescent ratings can also be compared across these different groups. Potential differences in language brokering experiences have been documented across adolescent gender (e.g., Love & Buriel, 2007), nativity (e.g., Niehaus & Kumpiene, 2014), and language brokering frequency (e.g., Weisskirch, 2013). Future studies can use our measure to examine whether they can replicate these previous findings, as our scale can help rule out the possibility that the observed differences are due to measurement artifact.

Descriptive statistics and bivariate correlations among the subscales showed meaningful patterns that are worth investigating in more depth in future inquiries. Examining the mean ratings on the subscales, we found that our participants, on average, described their brokering experiences in somewhat positive terms, generally agreeing to statements about the beneficial aspects of brokering and somewhat disagreeing to having negative feelings about brokering. Intercorrelations among the subscales are also informative. For example, higher ratings on centrality of translating were generally associated with higher ratings on other beneficial aspects of language brokering and lower ratings on negative feelings about language brokering. This suggests that being a translator for parents is an important part of language brokers' identities, one that has positive implications for their well-being. In addition, positive parent–child relationship dimensions were generally positively associated with individual benefits of language brokering, such as language and socioemotional benefits and a sense of efficacy, while having inverse correlations with negative feelings about translating. It is noteworthy that parental dependence, a seemingly negative aspect of language brokering if viewed from a Western cultural perspective (Dorner et al., 2008), was positively associated with benefits of language brokering—both relational and individual. Similar patterns of associations between parental dependence and positive emotions about language brokering have been documented in previous studies with Chinese American (Kim et al., 2014) and Mexican American language brokers (Kam, 2011). This is in line with the notion that language brokering and parental dependence on children for this kind of support may not be a risk factor when the family comes from a culture that emphasizes interdependence over independence in their developmental script (Dorner et al., 2008).

Our correlational analyses, performed using some theoretically relevant criteria variables, supported initial levels of criterion-related validity. Positive aspects of language brokering experiences were generally positively associated with a constellation of positive indicators of relational and individual well-being, and negatively associated with the negative indicators of relational and individual well-being, while negative feelings about brokering showed the opposite pattern of associations. Also, we found longitudinal correlations between our language brokering subscales and the criteria variables, suggesting preliminary predictive validity. Again, brokering-related parental dependence was positively related to some of the positive indicators of relational and individual well-being, such as parental warmth, resilience, and life meaning, while showing no significant associations with negative parent–child dynamics, such as parent–child alienation and parental hostility. These results are comparable to a recent finding that shows a positive link between parentification and life satisfaction in Latino college students (Hooper, Tomek, Bond, & Reif, 2015). It is worth noting that they also find the opposite for White students, for whom parentification is detrimental to life satisfaction (Hooper et al., 2015). Thus, families' cultural contexts need to be considered when studying children's caregiving behaviors, including language brokering. In families that are more collectivistic, parents' dependence on their children's support may not be viewed as problematic parent–child role reversal. Given the scope of the current study, which is establishing the longitudinal measurement invariance of our scale, we did not explore mechanisms of significant relations that were observed. As all associations are zero-order bivariate correlations, causal inferences cannot be made, and one important avenue for future research is to identify the directions of such relations.

Our multidimensional scale was developed and validated with a sample of Mexican American families. The scale was developed based on the literature on language brokering, which has focused primarily on Latino families (Kam & Lazarevic, 2014a). Whether our measure can be used across various cultural and linguistic contexts is an open question. Thus, we call for future studies using our measure to examine potential similarities and differences across racial/ethnic and linguistic backgrounds. Additionally, measurement equivalence also needs to be established across diverse ethnic groups within the Latino population. Relatedly, our sample of Mexican American families was recruited from central Texas, a region with a dense Mexican immigrant population (Brown & Stepler, 2015), and more specifically from low-income Mexican American communities in which the median level of parental education was middle school. Language brokering experiences among adolescents from more affluent families or from other regions could differ from those reported by the adolescents in our sample. Nevertheless, for the purpose of measurement development, it is important to establish the validity of the measure in at least one specific group before testing its applicability to more diverse groups.

Our scale can be used for adolescents to report about both mothers and fathers, as strict measurement invariance was established across parent gender. However, we caution future researchers to consider the potential time burden imposed on their adolescent participants when using our complete scale to report on experiences with both parents. Researchers may elect to use a subset of our subscales, or have their adolescents report about one parent only. Additionally, it is worth acknowledging that some of our subscales (e.g., positive parent–child relationships tied to language brokering) have some conceptual overlap with certain outcome variables (e.g., parent–child alienation). Nevertheless, our scale is still useful, as it provides a direct assessment of adolescents' appraisal of costs and benefits of language brokering, as well as parent–child relationships in the specific context of language brokering.

Conclusion

In this study, we developed and validated a new measure of language brokering for Mexican American adolescent language brokers. By capturing adolescents' subjective perceptions of language brokering experiences, both in terms of their own emotions/feelings and parent–child relationships, our scale serves as a useful tool for future studies to assess multidimensional language brokering experiences among adolescents. Furthermore, stringent factorial invariance for adolescent reports across mothers and fathers and over time, as well as across various demographic dimensions, suggests that our scale is appropriate for use with both parent–child dyads, longitudinally, and with diverse Mexican American families. Finally, the preliminary validity of our scale invites future investigations to use this measure in examining the socioemotional, relational, and developmental implications of language brokering on adolescents' well-being.

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