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## Burdened or Efficacious? Subgroups of Chinese American Language Brokers, Predictors, and Long-Term Outcomes

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### Abstract

Despite growing research on youth language brokering in immigrant families, evidence regarding its developmental outcomes remains mixed. This study took a person-centered approach, exploring subgroups of language brokers and identifying predictors and long-term outcomes of the subgroup membership. Participants were Chinese American adolescents ( $N = 350$  at Time 1;  $M_{\text{age}} = 17.04$ ;  $SD = 0.72$ ; 59% female) followed over two waves spaced four years apart (longitudinal  $N = 291$ ). Two distinct subgroups of adolescent language brokers were identified using latent profile analyses on language brokering feelings: efficacious and burdened brokers. Adolescents proficient in both English and Chinese were more likely to be efficacious brokers. Furthermore, burdened brokers reported higher parent-child alienation, and in turn, more depressive symptoms in emerging adulthood, compared to efficacious brokers and non-language-brokers. The current findings inform future interventions that burdened language brokers may be most at risk and that improving parent-child relationships may be one way to promote the well-being of young brokers.

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#### Authors' Contributions

YS conceived of the study, carried out statistical analyses, interpreted the results, and drafted the manuscript. SYK collected the data, participated in the design of the study, oversaw the process of data analyses, and revised the manuscript. ADB participated in the design of the study and revised the manuscript. All authors read and approved the final manuscript.

#### Data Sharing Declaration

This manuscript's data will not be deposited.

#### Compliance with Ethical Standards

##### Ethical Approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. The original data collection was approved by Institutional Review Boards of the University of California, Davis and the University of Texas at Austin.

#### Informed Consent

Informed consent was obtained from all individual participants included in the study.

#### Conflict of Interest

The authors report no conflict of interest.

## Keywords

Chinese American; language brokering; adolescence; emerging adulthood

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## Introduction

More than 20% of the U.S. population aged 5-years and older speaks a language other than English at home (Ryan, 2013). The Chinese-speaking population in the U.S., for example, has increased by nearly 350% since 1980 to approximately three million in 2010, but less than 50% report speaking English “very well” (Ryan, 2013). As children and adolescents in linguistic minority families learn English much faster than adults, they often serve as the translators for their parents who have limited English proficiency. Known as *language brokering*, this additional responsibility of immigrant children and adolescents is found to confer mixed effects on the young language brokers in terms of relationship quality with their parents and their own developmental outcomes (Kam & Lazarevic, 2014a).

Although earlier research on language brokering focused on a benefit-detriment debate of brokering, it is now becoming clear that the effects of adolescent brokering can vary. The pressing issue now is to understand who is more likely to have negative brokering experiences, whether brokering has a long-lasting impact on their development as they enter adulthood, and if so, through what mechanisms. Thus, this study focuses on Chinese American adolescents who serve as language brokers for their mothers and take a person-centered approach to explore subgroups of these brokers based on multiple dimensions of brokering feelings. This study also relies on the integrative model of brokering (Kam & Lazarevic, 2014a) to empirically investigate key predictors, stability and change, and long-term outcomes of the subgroups.

### **Burdened versus Efficacious: Profiles of Adolescent Language Brokers**

The majority of past research on language brokering has taken a variable-centered approach and examined the relations of brokering frequency to parent-child relationships and developmental outcomes (e.g., Guan & Shen, 2015; Kam, 2011; Roche, Lambert, Ghazarian, & Little, 2015; Weisskirch, 2013). This approach has resulted in mixed findings, such that some studies found a positive link (e.g., Chao, 2006), whereas others found a negative association between brokering frequency and developmental outcomes (e.g., Kam, 2011). This has led to a debate of whether or not adolescent brokering should be seen as a risk factor. This variable-centered approach has several limitations. First, brokering is a multifaceted behavior and involves more dimensions than simply the frequency of translating (Kam & Lazarevic, 2014a). Second, because of the multidimensionality of brokering, when multiple dimensions of brokering are considered simultaneously, there may be subgroups of adolescent brokers with distinct experiences, which may be better examined with a person-centered approach (i.e., comparing people rather than variables). Third, non-brokers often have been studied along with brokers along a continuum of brokering frequency (e.g., Chao, 2006; Kam, 2011); however, as they do not have the experience of serving as the cultural and linguistic intermediary, it may be necessary to examine non-

brokers as a separate control group to investigate whether brokers' parent-child relationships and developmental outcomes look different than non-brokers.

In light of these limitations in the literature, the effects of language brokering need to be examined from a multidimensional, person-centered, and quasi-experimental approach. According to the integrative theory of language and cultural brokering, brokering is a multidimensional behavior that encompasses not only frequency, but also multiple aspects of psychological feelings (Kam & Lazarevic, 2014a), such as positive feelings, negative feelings, sense of self-efficacy, and sense of burden. Although limited, individual links between different brokering feelings and brokers' well-being have been identified. For example, brokers' *positive feelings* about themselves, including senses of independence and maturity, were related to positive adjustment, including high self-esteem and decreased substance use (Kam, 2011). On the other hand, *negative feelings*, such as embarrassment and uneasiness, were related to poor adjustment, including problematic family relationships, depressive symptoms, and behavioral problems (Kam, 2011; Kam & Lazarevic, 2014b; Weisskirch, 2007). Furthermore, brokers' *sense of self-efficacy* has been found to buffer the effect of brokering frequency on substance use (Kam & Lazarevic, 2014b), whereas brokers' *sense of burden* was found to negatively impact brokers' socioemotional well-being, including self-esteem (Weisskirch, 2013).

Considered from a person-centered approach, then, at least two heterogeneous subgroups of language brokers may exist who can be characterized by distinct constellations of feelings and experiences of brokering. For example, one subgroup may be identified whose members may have positive feelings toward brokering and feel a strong sense of efficacy and have low levels of negative feelings and sense of burden. Another subgroup may comprise of brokers who have negative feelings toward brokering, are burdened by brokering, and do not feel good or efficacious about brokering. Different subgroups of language brokers with distinct brokering experiences can then be compared with the existing control group of non-brokers to understand factors that contribute to variations in adolescents' brokering experiences and potentially differential long-term effects of language brokering for different subgroups of brokers.

### **Predictors of Language Brokering and Positive Brokering Experiences**

The integrative model of language and cultural brokering (Kam & Lazarevic, 2014a) identifies several contextual factors that determine who may assume the responsibility of brokering. For contextual factors, parental English proficiency, cultural orientations, and socioeconomic status may determine immigrant families' ability to navigate the host society, and youth in families that struggle in adapting to the mainstream culture are more likely to be called on to broker. Prior research has found that mothers who are less proficient in English, less oriented to the American culture, and more oriented to the heritage culture may require more brokering support (Chao, 2006; Martinez, McClure, & Eddy, 2009). Additionally, immigrant families' socioeconomic status, such as parental education level, may also predict brokering, such that mothers with lower education levels are more likely to need their adolescents' brokering help (Chao, 2006; Jones, Trickett, & Birman, 2012).

In addition to identifying contextual factors that differentiate who will more likely take on a language brokering role, it is also important to consider what predicts adolescent brokers' subjective feelings about their brokering roles and experiences. The first set of individual factors that are considered are youth's host and heritage language proficiency. The integrative model of language and cultural brokering suggests that language difficulties may impact youth's subjective experiences of brokering (Kam & Lazarevic, 2014a). Supporting this perspective, a previous qualitative study (Villanueva & Buriel, 2010) demonstrated that vocabulary problems in both languages played a role in brokers' negative feelings about brokering. However, few quantitative investigations of brokering have investigated how adolescent language proficiency may divide adolescent brokers into different subgroups with distinct brokering experiences.

Similarly, adolescents' cultural orientations may also serve as important predictors of subgroup membership (Kam & Lazarevic, 2014a). Previous research suggests that limited knowledge of the mainstream culture made Latino adolescents' language brokering experiences more challenging and stressful (Weisskirch & Alva, 2002). In addition, Chinese American adolescents' lower levels of orientation to the heritage culture were indirectly related to higher levels of burden as brokers (Wu & Kim, 2009). Thus, positive experiences of brokering may require adequate knowledge and practice in both the mainstream and heritage cultures.

### **Subgroup Membership, Parent-Child Relationships, and Youth Adjustment Over Time**

There are likely different profiles of adolescent language brokers who experience distinct constellations of brokering feelings, and different contextual and individual factors may predict membership in different profiles. However, from a longitudinal perspective, some adolescent brokers may no longer provide brokering assistance in their emerging adulthood, while others may become new brokers. Additionally, for long-term brokers, some may have stable and consistent feelings about brokering, while others may transition into a different brokering subgroup over time. Indeed, a major limitation of past research is that most employed cross-sectional designs. This previous cross-sectional research suggested that early adolescent brokers feel discomfort in brokering (Weisskirch & Alva, 2002), whereas older adolescents and emerging adults feel more efficacious (Buriel, Perez, DeMent, Chavez, & Moran, 1998; Weisskirch, 2013). A qualitative study also found that brokering became easier as adolescents grew older (Dorner, Orellana, & Jiménez, 2008). Thus, it remains unknown whether the mixed effects of language brokering are confounded by an age-graded effect, such that brokering is more taxing for younger brokers but becomes more rewarding as young people mature cognitively and psychologically, or if heterogeneity in brokering feelings persists across developmental periods. Therefore, it is important to investigate the long-term transition patterns among broker subgroups across adolescence and emerging adulthood and to explore contextual and individual factors that may predict adolescents' longitudinal language broker subgroup membership.

More importantly, it seems that language brokering in adolescence may have long-term implications for individual well-being. For example, it was found that emerging adults who served as language brokers during adolescence reported higher levels of depression and

anxiety than their bilingual non-brokering counterparts (Rainey, Flores, Morrison, David, & Silton, 2014). Furthermore, the integrative model of language and cultural brokering predicts that those who have more positive brokering feelings may experience more positive parent-child relationships, and in turn, may exhibit more positive psychological adjustment, fewer risky behaviors, and better academic performance (Kam & Lazarevic, 2014a). Previous empirical evidence provides some support for this perspective. For example, positive brokering feelings among Latino adolescent brokers were positively related to parent-child bonding (Buriel, Love, & De Ment, 2006), whereas negative feelings about brokering were predictive of problematic family relationships (Weisskirch, 2007). In addition, better parent-child relationships associated with brokering were, in turn, found to be associated with lower levels of depression (Buriel et al., 2006) and externalizing problems (Shen, Kim, Wang, & Chao, 2014) in adolescents.

However, the variability in the developmental outcomes across different transitioning or stable subgroups of language brokers or non-brokers in emerging adulthood is not known. Therefore, this study explores the stability and change in subgroup membership across adolescence and emerging adulthood, as well as the contextual and individual predictors of the longitudinal subgroup membership, in Chinese American adolescents. Furthermore, this study examines two aspects of parent-child relationships as mediating mechanisms, including parent-child alienation and conflict, and three domains of individual well-being as distal outcomes, including socioemotional (i.e., depressive symptoms), behavioral, (i.e., delinquent behaviors), and academic adjustment (i.e., academic achievement). As many adolescents leave home to go to college, individual living arrangement in emerging adulthood is also considered as an important covariate in examining language brokers' developmental outcomes.

## Current Study

Despite growing research on youth language brokering in immigrant families, evidence regarding adolescents' experiences of language brokering and language brokers' developmental outcomes remains mixed. This study aims to reconcile the benefit-detriment debate of language brokering by exploring subgroups of language brokers, their predictors, and long-term outcomes using a person-centered approach. Specifically, this study relies on data obtained from Chinese American adolescents and their mothers to answer the following research questions. First, are there heterogeneous subgroups of language brokers within Chinese American adolescent language brokers with distinct brokering feelings (Research Question 1)? Second, how may some family contextual characteristics (maternal English fluency, education level, and American and Chinese cultural orientations) and individual characteristics (adolescent English and Chinese fluency, American and Chinese cultural orientations) predict group membership, including that to a known subgroup of non-language-brokers (Research Question 2)? Third, what are the contextual and individual antecedents, and what are the long-term consequences of stability and change in subgroup membership across adolescence and emerging adulthood, in terms of parent-child relationships, and in turn, psychological, behavioral, and academic adjustment (Research Question 3)?

## Methods

### Participants

Participants were drawn from a larger longitudinal study of Chinese American families with adolescents residing in Northern California. In the larger study, adolescents were followed three times when they were in middle school, high school, and post-high school, with 4-year intervals between waves. As scales of interest were not developed until the second wave of the larger study, this study only used the latter two waves of data (referred to as T1 and T2 for the current study) for analyses. At T1, participants were between 16–19 years old ( $N=350$ ;  $M_{age} = 17.04$ ;  $SD = 0.72$ ; 59% female). At T2, 335 participants were retained from the initial wave of the larger study, including 44 participants who did not participate at T1. Thus, for longitudinal analyses, the sample was further restricted to those who have language brokering information available at both times (i.e., self-reports on whether or not they served as brokers and brokering feelings;  $N=291$ ) due to the study's focus on transitions across different brokering subgroups. Most youth participants in this analytic sample were born in the U.S. (70%), whereas almost all of their parents were foreign born. Independent samples  $t$ -tests were conducted to compare adolescents who only participated at either T1 or T2 versus those who participated at both times on all key demographic and outcome variables in the study. No significant differences were found for any of the variables with one exception: the mothers in the longitudinal analytic sample had a higher average level of education (almost finished high school) than mothers of those who only participated at T1 (only had some high school education):  $t(341) = 2.24, p = .03$ .

### Procedures

In 2002, seven middle schools that had a substantive population of Asian American students (at least 20% of the student body) were contacted to participate in the study. Eligible Chinese American students were identified with the help of school administrators, and 47% of these students consented to participate in the study. Questionnaires, available in both English and Chinese, were distributed at school or mailed home, and researchers collected questionnaires two to three weeks later. Of those participants who received questionnaires, 76% completed the surveys. About 79% of the families participated in the first follow-up study in 2006 (T1), while about 75% of the initially recruited families participated in the second follow-up in 2010 (T2).

### Measures

This study assessed youth's language brokering experiences, contextual and individual characteristics, parent-child relationships, and psychological, behavioral, and academic adjustment. Descriptive statistics of the key variables are presented in Table 1.

**Language brokering experiences.**—Language brokering feelings at T1 and T2 were measured using subscales of the Language Brokering Scale (LBS; Kim et al., 2014). Four dimensions of adolescent brokering feelings were assessed at both times, including *positive feelings*, *negative feelings*, *brokering efficacy*, and *brokering burden*. In addition, *language brokering frequency* at T1 was also measured.

**Positive feelings.:** Three items measured positive feelings (e.g., “Translating makes me feel independent and mature”). Each item was rated on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Item scores were then averaged so that higher mean values indicated higher levels of positive feelings. Cronbach’s alpha for this measure was .77 at T1 and .78 at T2.

**Negative feelings.:** Six items measured *negative feelings* (e.g., I feel helpless when my parent asks me to translate”). Each item was rated on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Item scores were averaged so that higher mean values indicated higher levels of negative feelings. Cronbach’s alpha for this measure was .78 at T1 and .89 at T2.

**Language brokering efficacy.:** Three items measured *language brokering efficacy* (e.g., “I am effective at translating”). Each item was rated on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Item scores were then averaged so that higher mean values indicated higher levels of brokering efficacy. Cronbach’s alpha was .92 at both T1 and T2.

**Language brokering burden.:** Four items measured *language brokering burden* (e.g., “Translating takes time away from other things I want to do”). Each item was rated on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Item scores were averaged, and higher mean values indicated higher levels of brokering burden. Cronbach’s alpha for this measure was .92 at T1 and .87 for T2.

**Language brokering frequency.:** Non-brokers were first identified at T1 and T2 based on adolescents’ responses to the question “have you ever translated something from English to Chinese for your parents? (This could include spoken or written words, phrases, or sentences).” In addition, at T1, those who answered affirmatively were then further asked to rate how often they had translated from English to Chinese for their mothers on a scale of 1 (*never*) to 5 (*daily*).

**Contextual and individual characteristics.**—Contextual factors that were considered in this study included *maternal English proficiency*, *maternal education*, and *maternal cultural orientations*, whereas individual factors involved *adolescent language proficiency*, *adolescent cultural orientations*, as well as *adolescent demographic characteristics*.

**Maternal English proficiency.:** Mothers’ self-reported English proficiency was assessed at T1 with two items measuring their perceived ability in speaking/understanding and reading/writing English. The response scale ranged from 1 (*not well*) to 5 (*extremely well*). Inter-item correlation between the two items was .91.

**Maternal education.:** Mothers’ educational status was self-reported at T1 on a scale ranging from 1 (*no formal schooling*) to 9 (*finished graduate degree [medical, law, Master’s degree, etc.]*).

**Maternal cultural orientations.:** Mothers rated their levels of acculturation and enculturation at T1 using the 20-item cultural orientation scale of the Vancouver Index of

Acculturation (Ryder, Alden, & Paulhus, 2000), which has been well validated with Asian Americans (Weaver & Kim, 2008). The measure captures 10 different domains of the American and Chinese cultural orientations, such as traditions and values. Sample items for the acculturation (enculturation) subscale included, “I often behave in ways that are typical of the American (Chinese) culture.” The response scales ranged from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher mean scores indicating greater levels of acculturation or enculturation. Cronbach’s alpha coefficients were .85 and .86 for mothers’ acculturation and enculturation, respectively.

**Adolescent language proficiency.:** Adolescents’ self-reported Chinese and English language proficiency was assessed at T1 with two items measuring their perceived ability in speaking/understanding and reading/writing Chinese and English languages, respectively. The response scales ranged from 1 (*not well*) to 5 (*extremely well*). Inter-item correlation was .65 for Chinese proficiency and .80 for English proficiency.

**Adolescent cultural orientations.:** Adolescents also rated their levels of acculturation and enculturation at T1 using the same 20-item cultural orientation scale of the Vancouver Index of Acculturation (Ryder et al., 2000) used to measure mothers’ cultural orientations. The response scales ranged from 1 (*strongly disagree*) to 5 (*strongly agree*) with higher mean scores indicating greater levels of acculturation or enculturation. Cronbach’s alpha coefficients were .79 and .86 for adolescents’ acculturation and enculturation, respectively.

**Adolescent demographic characteristics.:** Adolescents’ gender and age were included in the analyses to account for their demographic characteristics. Additionally, for longitudinal analyses, the child’s living arrangement (0 = *not living with parents*; 1 = *living with at least one parent*) at T2 was also controlled for.

**Parent-child relationships.—**Two measures, *parent-child alienation* and *parent-child conflict*, assessed parent-child relationships within the family at both T1 and T2.

**Parent-child alienation.:** Alienation was assessed using the alienation from parents subscale of the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987). On a scale of 1 (*almost or never true*) to 5 (*almost always or always true*), participants rated eight items capturing their perceived alienation and isolation from parents (e.g., “my parents don’t understand what I’m going through these days”). Item scores were averaged, and higher scores indicated higher levels of parent-child alienation. The measure showed good reliability (Cronbach’s  $\alpha$  was .87 at T1 and .86 at T2).

**Parent-child conflict.:** Conflict was measured using an adapted version of the Asian American Family Conflict Scale (Lee, Choe, Kim, & Ngo, 2000). On a scale of 1 (*almost never*) to 5 (*almost always*), adolescents were asked to rate ten items on culturally salient conflicts with a parent (e.g., “your parent tells you what to do with your life, but you want to make your own decisions”). Item scores were averaged, and higher scores indicated higher levels of parent-child conflict. The measure showed good reliability (Cronbach’s  $\alpha$  was .87 at T1 and .90 at T2).



**Adolescent adjustment.**—Adolescents' socioemotional and behavioral adjustment was assessed using measures of *depressive symptoms* and *delinquent behaviors* at both time points, whereas adolescents' academic adjustment was assessed using *grade point average (GPA)* at T1 and *college grades* at T2.

**Depressive symptoms.:** Adolescents' depressive symptoms were measured at both T1 and T2 using the 20-item Center for Epidemiological Studies Depression Scale (Radloff, 1977). Items included statements such as "I felt people disliked me", and the scale ranged from 0 (*rarely or none of the time*) to 3 (*most of the time*). Composite scores for depressive symptoms were created by taking the mean across the 20 items (four items were reverse-coded), with higher mean values indicating higher levels of depressive symptoms. The Cronbach's alpha ranged from 0.90 to 0.91 across time points for depressive symptoms.

**Delinquent behaviors.:** Adolescents' delinquent behaviors were assessed at both T1 and T2 using a 9-item measure adapted from the "rule-breaking behaviors" subscale of the Youth Self-Report (Achenbach, 2001). A sample item is "I lie or cheat." For this measure, three additional items (e.g., I illegally copy computer software) were added based on a previous study (Le & Stockdale, 2005) to capture delinquent behaviors more relevant to Asian Americans. The responses were originally rated on a scale ranging from 0 (*not true*) to 2 (*often true or very true*). However, due to low frequencies of delinquent behaviors, items were dichotomized for analyses such that 0 reflected *no delinquency*, and 1 reflected *some delinquency*. The mean was taken across the nine dichotomized delinquency items to obtain a composite score of delinquency, such that higher mean scores indicated higher levels of delinquent behaviors.

**Academic adjustment.:** Academic adjustment at T1 was assessed using grade point average (GPA) obtained from school records, which ranged on a scale of 0–4. Academic adjustment at T2 was assessed using adolescents' self-reported grades in college (93% of adolescents went to college) ranging from 0 "F" to 12 "A+," as official transcripts were not available in the data.

## Analysis Plan

All analyses were conducted using Mplus 7.3 (Muthén & Muthén, 1998–2015). Mplus handles missing data with full-information maximum likelihood (FIML) estimation, which utilizes all available information from the covariance matrix (Enders, 2001). In order to explore potential subgroups among language brokers, latent profile analysis (LPA) was conducted at T1 using four dimensions of brokering feelings: brokering burden, negative feelings, brokering efficacy, and positive feelings. To account for potential gender effects, adolescent gender was included as a covariate for the LPA. Models were estimated sequentially specifying one through five profiles. The optimal solution was selected based on the following model fit indices: Bayesian information criterion (BIC), the sample size adjusted BIC (ABIC), and the Lo-Mendel-Rubin (LMR) likelihood ratio test. Lower BIC and ABIC values indicate better model fit, and a significant likelihood ratio test indicates a significant improvement in model fit from the previous model.

Next, to identify predictors of subgroup membership, multinomial logistic regressions were conducted, regressing the profiles—including a known class of non-brokers—on the hypothesized predictors. This allows for the comparison of probabilities of being in other groups relative to being in a reference group (Hosmer & Lemeshow, 2000). Reference groups were rotated to obtain all possible comparisons among groups. As non-brokers do not have reports available for brokering frequency and because assigning the value of zero to all non-brokers would disproportionately skew the variable, brokering frequency is only included as a potential predictor for the comparison within brokers, but not for that between brokers and non-brokers.

Then, to investigate antecedents and developmental outcomes of subgroup membership longitudinally, LPA was repeated at T2, and profiles at the two times were cross-tabulated to create long-term transition subgroups. After that, multinomial logistic regressions were conducted using the same set of hypothesized contextual and individual predictors of language broker classes at T1 to predict the longitudinal transition class membership across T1 and T2. Finally, path analyses were conducted, which regressed outcomes at T2 (i.e., parent-child relationships and adjustment) on the long-term broker subgroups, controlling for earlier levels of outcomes (i.e., autoregressive paths) and covariates (i.e., predictors of profiles) at T1, as well as adolescents' living arrangement at T2. Adjustment indicators at T2 were also regressed on parent-child relationships at T2 to examine indirect effects of long-term broker subgroups on individual adjustment via parent-child relationships. For the multinomial logistic regression and path analyses, only significant findings at  $p < .01$  level were interpreted due to the relatively large numbers of comparisons.

## Results

### Latent Profile Analysis at T1

In order to identify subgroups of language brokers, LPA was conducted using four dimensions of brokering feelings examined at T1: brokering burden, negative feelings, brokering efficacy, and positive feelings. Examining model fit indices for 1-class to 5-class solutions (see top panel of Table 2), the BIC and ABIC values started to level off after the 2-class solution, and the LMR-LRT test suggested that the 1-class solution fit the data worse than the 2-class solution ( $p = .02$ ), but the 3-class solution did not fit the data better than the 2-class solution. Therefore, the 2-class solution was selected.

The scores for brokering feelings were compared across the two profiles in Mplus. The first profile scored significantly lower on brokering burden ( $M = -1.25, p < .001$ ) and negative feelings ( $M = -1.26, p < .001$ ), while scoring significantly higher on brokering efficacy ( $M = 0.61, p < .001$ ) and marginally higher on positive brokering feelings ( $M = 0.27, p = .08$ ) than the second profile. Based on these results, the first profile was labeled *efficacious language brokers* ( $n = 153$ ; 61% of adolescents), and the second profile was labeled *burdened language brokers* ( $n = 99$ ; 39%). In addition to these two broker profiles, a known profile of non-brokers was added to all subsequent analyses ( $n = 98$ ). In total, among the three profiles of adolescents, 44% were *efficacious language brokers*, 28% were *burdened language brokers*, and another 28% were *non-brokers*.

### Multinomial Logistic Regressions at T1

Next, most likely membership obtained from the 2-class LPA model was assigned to each adolescent. Multinomial logistic regressions were then conducted to determine whether and how the hypothesized demographic, individual, and maternal predictors related to being in a certain class versus another (see Table 3). First, the two subgroups of language brokers were compared to the reference subgroup of non-brokers (Model 1). When comparing the efficacious brokers to non-brokers, those adolescents who reported being more proficient in the Chinese language and those whose mothers had lower levels of education and lower English proficiency were more likely to be efficacious brokers rather than non-brokers. When comparing burdened brokers to non-brokers, those adolescents whose mothers had lower levels of education and lower English proficiency were more likely to be burdened brokers rather than non-brokers. Second, for the comparison within language brokers (Model 2), brokering frequency was added to the analysis as an additional predictor of the subgroup membership. Results suggested that those adolescents who had higher self-reported proficiency in Chinese and English were more likely to be efficacious rather than burdened brokers. Brokering frequency and adolescent gender and age, however, were not significant predictors of whether or not brokers were efficacious or burdened.

### Latent Profile Analysis at T2

Turning to the longitudinal analyses, in order to examine stability and change in language broker classes from adolescence to emerging adulthood, LPA was conducted again using the four brokering variables (burden, negative feelings, efficacy, and positive feelings) at T2. After examining all model fit indices for 1-class to 5-class solutions (see bottom panel of Table 2), the 2-class solution was selected as the optimal solution, as the BIC and ABIC values started to level off after the 2-class solution, and the LMR test suggested that the 1-class solution fit the data significantly worse than the 2-class solution ( $p < .01$ ). Although the LMR test also suggested that the 3-class solution fit the data better than the 2-class solution ( $p = .02$ ), the 3-class solution was not considered optimal, because one of the profiles had a rather small sample size ( $n = 19$ ; 8% of adolescents).

Similar to the 2-class solution at T1, significant differences were found between the two profiles at T2. The first profile scored significantly lower on brokering burden ( $M = -1.39$ ,  $p < .001$ ) and negative feelings ( $M = -1.33$ ,  $p < .001$ ), while scoring significantly higher on brokering efficacy ( $M = 0.74$ ,  $p < .001$ ) and positive brokering feelings ( $M = 0.29$ ,  $p = .02$ ) than the second profile. Consistent with T1, the two classes were labeled *efficacious language brokers* ( $n = 139$ ; 55%) and *burdened language brokers* ( $n = 112$ ; 45%). Adding the known class of non-brokers ( $n = 84$ ), for the T2 sample, 41% were efficacious brokers, 33% were burdened brokers, and 25% were non-brokers in emerging adulthood.

### Long-term Transition Profiles across T1 and T2 and Prediction of Membership

Based on cross-tabulation of class membership at T1 and T2, dummy-coded transition classes were created. To ensure adequate power of the analyses, cases in cells with low counts were combined as a single group of "other," and the results were not interpreted. Therefore, subsequent analyses compared the developmental outcomes of five groups: efficacious brokers at both times ( $n = 84$ ; 29%), burdened brokers at both times ( $n = 51$ ;

18%), those who were efficacious at T1 but became burdened at T2 ( $n = 34$ ; 12%), those who were burdened at T1 but became efficacious at T2 ( $n = 28$ ; 10%), and non-brokers at both times ( $n = 63$ ; 22%).

In predicting the longitudinal transition class membership across T1 and T2, results of multinomial logistic regressions (Table 4) were similar to those from the cross-sectional analyses at T1. In general, adolescents with higher self-reported Chinese language proficiency at T1 and those whose mothers had lower levels of education and lower English proficiency at T1 were more likely to be long-term language brokers rather than non-brokers (Model 1). In addition, within long-term brokers, those adolescents who had higher self-reported proficiency in both Chinese and English at T1 were more likely to remain efficacious rather than remain burdened over time (Model 2). Similarly, those adolescents with higher Chinese proficiency at T1 were more likely to be continuously efficacious and less likely to become burdened at T2 (Model 2). Again, language brokering frequency and adolescent gender and age were not significant predictors of membership to any longitudinal broker profile.

### Path Analyses Using Longitudinal Transition Profiles to Predict Outcomes at T2

Results of path analyses suggested that language brokers who were burdened (continuously or at T2) consistently reported higher levels of parent-child relationship problems and adjustment problems compared to non-brokers and brokers who were efficacious (continuously or at T2). As shown in Table 5, for parent-child relationships at T2, compared to non-brokers, continuously burdened brokers and those who became burdened at T2 reported higher levels of parent-child alienation. In addition, compared to continuously efficacious brokers, continuously burdened brokers reported higher levels of parent-child alienation and conflict, and those who became burdened at T2 reported higher levels of parent-child alienation. Turning to adjustment indicators, compared to continuously efficacious brokers, those who became burdened at T2 reported higher levels of delinquent behaviors. Moreover, compared to those who became efficacious at T2, those who became burdened reported higher levels of delinquent behaviors.

In addition to these direct comparisons, three significant indirect effects were found (see Figure 1). Compared to non-brokers, continuously burdened brokers reported higher parent-child alienation at T2, which was in turn associated with higher levels of depressive symptoms at T2 ( $\beta_{\text{indirect}} = .07$ ,  $p = .009$ ; 95% CI = [.02, .12]). The total indirect effect via parent-child alienation and conflict was also significant ( $\beta_{\text{total\_indirect}} = .08$ ,  $p = .004$ ; 95% CI = [.03, .14]), although the specific indirect effect via parent-child conflict was not significant. Moreover, compared to continuously efficacious brokers, continuously burdened brokers reported higher parent-child alienation, which was then associated with higher levels of depressive symptoms ( $\beta_{\text{indirect}} = .06$ ,  $p = .004$ ; 95% CI = [.02, .11]). The total indirect effect was again significant ( $\beta_{\text{total\_indirect}} = .08$ ,  $p < .001$ ; 95% CI = [.04, .13]), although the specific indirect effect via parent-child conflict was not significant. Finally, compared to continuously efficacious brokers, those who became burdened at T2 reported higher levels of parent-child alienation, which in turn, were associated with higher levels of depressive symptoms ( $\beta_{\text{indirect}} = .05$ ,  $p = .005$ ; 95% CI = [.02, .09]). The total indirect effect via parent-

child alienation and conflict was significant ( $\beta_{\text{total\_indirect}} = .07, p = .001$ ; 95% CI = [.03, .10]), but the specific indirect effect via parent-child conflict was not. In all three comparisons, the differences between long-term language broker subgroups in depressive symptoms were fully mediated by their differences in parent-child relationships.

### Sensitivity Check and Supplemental Analyses

To assess the robustness of profile membership, LPA was repeated at T1 and T2 without adolescent gender as a covariate. The optimal solutions remained to be 2-class models at both time points. The final counts and proportions of the two profiles identified at T1 and T2 were also identical to those from LPA with adolescent gender as a covariate.

Supplemental models were also considered using adolescents' self-reported nativity as an additional predictor of T1 and longitudinal profile membership but are not reported for the following reasons. First, adolescent nativity was not a significant predictor for T1 or longitudinal profile membership. Second, correlation analyses suggested that adolescents' nativity status (1=US born; 0=foreign-born) was strongly and negatively associated with adolescents' Chinese proficiency ( $r = -.51, p < .001$ ) and positively associated with English proficiency ( $r = .23, p < .001$ ). As the main models presented in Tables 3 and 4 already accounted for adolescents' language proficiency, especially Chinese proficiency, which was a more relevant and more powerful predictor for adolescents' language brokering experiences than nativity status, nativity was removed from the final list of predictors to avoid multicollinearity issues.

### Discussion

This study aimed to reconcile the benefit-detriment debate of language brokering's effects by elucidating who may be at risk and who may gain benefits due to brokering from a person-centered perspective over time. Two heterogeneous subgroups of language brokers were identified, with more than half of the brokers showing positive experiences of brokering (i.e., efficacious) and a smaller group showing negative experiences (i.e., burdened). This study also discovered contextual characteristics (i.e., low maternal education, English proficiency) that distinguished language brokers from non-brokers, and more importantly, significant individual characteristics (i.e., Chinese and English proficiency) that differentiated efficacious brokers from burdened ones. Moreover, continuously burdened language brokers and those who became burdened over time showed more problematic parent-child relationships, and in turn, more psychosocial problems in emerging adulthood, compared to non-brokers and efficacious brokers.

Not surprisingly, contextual factors such as low maternal education and low maternal English proficiency predicted adolescents' serving as brokers, which empirically demonstrates that child language brokering stems from parents' difficulties in effectively navigating the host society. More importantly, it was found that individual characteristics predicted whether adolescents would be efficacious or burdened brokers, with the key difference being their bilingual proficiency, rather than brokering frequency. Those who reported more proficiency in both the host language *and* the heritage language were more likely to feel efficacious about brokering, whereas those who were less proficient in either

language were more likely to feel burdened about brokering. According to the integrative model of minority child development (Garcia Coll et al., 1996), developmental competency of racial/ethnic minority and immigrant children should be considered within the specific ecological contexts. The current findings suggest that, for adolescents from Chinese immigrant families whose parents have limited English proficiency, bilingual proficiency is a unique developmental competence, and for those who have developed balanced bilingualism, brokering is a more positive experience.

This study further investigated how adolescents' language broker subgroup membership changed over time as adolescents transitioned from adolescence to emerging adulthood. There is preliminary evidence in the literature to suggest that brokering becomes easier as adolescents grow older (Buriel et al., 1998; Dorner et al., 2008; Weisskirch, 2013). However, the current quantitative findings provide limited support to the assumption that language brokering's effect is age-graded. On the one hand, descriptive statistics did suggest declines in negative feelings and burden, as well as increases in positive feelings and efficacy of brokering. On the other hand, broker classes generally remained stable, with about 70% of adolescents staying in the same subgroup (i.e., efficacious, burdened, no brokering) in their emerging adulthood. Only about 10% of the participants transitioned from feeling burdened to efficacious. Thus, it seems that whereas individuals do experience an overall improvement in language brokering experiences as they transition from adolescence to emerging adulthood, the heterogeneity within language brokers persists across developmental periods, with burdened brokers remaining more burdened than the efficacious brokers. Similar to the cross-sectional findings in adolescence, long-term language brokers' proficiency in not only English but also Chinese during adolescence seems to be the key predictor for remaining efficacious as they continue brokering into adulthood.

Consistent with the integrative model of cultural and language brokering (Kam & Lazarevic, 2014a), this study's findings demonstrate that brokering can have differential effects on adolescent brokers' long-term developmental outcomes. Compared to non-brokers and continuously efficacious brokers, continuously burdened brokers and those who began as efficacious but later became burdened were more likely to experience poorer parent-child relationships, and in turn, worse psychological adjustment over time, from mid-adolescence to emerging adulthood. Considering that burdened brokers were more likely to be the ones who were less proficient in either English or Chinese, these results may be explained in two ways. First, for those adolescents less proficient in English, brokering may add to their acculturative stress (Kam, 2011; Weisskirch & Alva, 2002), and this additional burden may harm the healthy parent-child dynamic in the family. Alternatively, for those less proficient in Chinese, perhaps the mismatch in language use between the parent and the adolescent hinders communications in the family, which contributes to alienation and conflict that is maladaptive for adolescent development (Weaver & Kim, 2008).

One significant contribution of this study is the quasi-experimental approach of referencing non-brokers as a control group. By comparing the adjustment of subgroups of brokers to a control group of non-language brokers, while controlling for various parental and individual demographic and acculturation-related characteristics, this study was able to account for the normative intergenerational challenges in acculturating Chinese immigrant families to better

assess the net effect of language brokering. Over the past two decades, both theoretical ideas and empirical findings seem to have suggested mixed effects of brokering, with more studies supporting the negative effects of brokering (e.g., Roche et al., 2015; Umana-Taylor, 2003) and a smaller body of research underpinning the positive influences of brokering (e.g., Dorner et al., 2008). This study's findings reconcile these two bodies of scholarship to some extent by identifying the existence of two heterogeneous groups of brokers. For example, only findings about the burdened language brokers, but not the efficacious brokers, support the pernicious effects of brokering when compared to non-brokers. However, it is worth noting that the findings regarding the efficacious brokers do not provide a strong support for the benefits of language brokering, at least not at the more stringent  $p < .01$  significance level. Efficacious brokers, although significantly better adjusted than the burdened subgroup, did not show noticeable differences from non-brokers in terms of their developmental outcomes.

This study's findings have several important practical implications. First, all linguistic minority families could benefit from the help of more formal translators at various institutions. However, much of brokering happens spontaneously and informally at home (Roche et al., 2015). As such, based on the current evidence, intervention programs should consider providing preliminary training to improve Chinese immigrant parents' English skills to help them better navigate the mainstream culture, which simultaneously would alleviate their children's responsibility to serve as cultural and linguistic brokers. Second, this study highlights that brokering can be particularly challenging and emotionally burdensome for those adolescents who are not proficient in one of the languages. It would be beneficial for families if language education targeted both children and parents so that they can grow in their bilingual proficiency together (Garcia Coll et al., 1996). An alternative method would be to take preventative measures to foster positive parent-child relationships for the subgroup identified as burdened, as the current findings suggest that qualities of parent-child relationships subsequently impact language brokers' psychological adjustment (e.g., depressive symptoms). Thus, a culturally appropriate family therapy may be implemented, with the goal of fostering communication in the family, so that the adolescents realize that their efforts serving as brokers are acknowledged and appreciated by their parents.

Although the study contributes to the field's understanding of language brokering experiences across adolescence and emerging adulthood, some limitations should be noted. First, the sample in this study was relatively homogeneous in terms of participants' educational attainment (93% of adolescents went to college at Time 2). This could be a potential reason why language brokering subgroup membership was not a significant predictor of academic achievement. There has been some empirical evidence for the benefits of brokering for Spanish-English bilingual youth's cognitive and academic performance in experimental (Vaid, López, & Martínez, 2015) and observational studies (i.e., reading scores; Dorner, Orellana, & Li-Grining, 2007). Second, the sample resided in an area with a relatively high density of Chinese Americans. As such, this study's findings may not be generalized to Chinese Americans not residing in ethnic enclaves or to other linguistic minority groups. Future studies may recruit linguistically diverse brokers and non-brokers

who exhibit a wider range of academic outcomes to better understand the complex effects of language brokering.

Third, it is a limitation that this study used a single-item measure to assess language brokering frequency. Past research has suggested that different contexts of language brokering have various implications on parent-child relationships and adolescent adjustment. For example, home management-related language brokering (e.g., translating bills, insurance forms), but not school-related nor community-related language brokering, is related to more problematic parent-child relationships (Roche et al., 2015). In addition, translating in high-stakes contexts (e.g., medical documents, immigration forms), but not in low-stakes (e.g., translating at a restaurant) or everyday contexts (e.g., notes from the school), is found to be negatively associated with adolescents' academic and emotional well-being (Anguiano, 2018). Therefore, the lack of association between language brokering frequency and adolescents' subgroup membership could be due to the single-item measure's limitation to capture the context of language brokering. Future studies should use measures of language brokering frequency with more items to examine whether the current findings are replicable. Nevertheless, this limitation in measurement does not pose a serious threat to the validity of the main findings, as language brokering frequency was only investigated as a covariate, rather than a main indicator of profiles.

Fourth, the profiles were created based on adolescents' experiences of language brokering for their mothers, while parent-child relationships were assessed using adolescents' reports of alienation from and conflict with their parents. Focusing on subjective feelings about language brokering within mother-adolescent dyads was meaningful in that it could best capture distinct emotions that adolescent language brokers might have. Not only is language brokering more frequently observed between mother-adolescent dyads than father-adolescent dyads (Chao, 2006; Villanueva & Buriel, 2010), but adolescents also experience more intense emotions, both positive and negative, when language brokering for mothers than for fathers (Kim, Hou, Shen, & Zhang, 2017; Wu & Kim, 2009). For this reason, it would have been ideal to investigate the consequent mother-child relationships, rather than general parent-child relationships, as outcomes of language broker subgroups. Unfortunately, however, data for alienation and conflict specific to mother-child dyads were not available. Nevertheless, mother-adolescent relationships and father-adolescent relationships are likely very similar, as research has suggested that mothers and fathers become more similar in their child-rearing practices over time in their children's adolescence (Schofield et al., 2009). Therefore, despite the limitation, it is speculated that the findings about the associations between subgroup membership and parent-child relationships would have held, had there been data available for mother-child dyad-specific relationships.

## Conclusion

This study provides some reconciliation in the debate about the influence of language brokering in the literature. From a person-centered perspective, two distinct subgroups of brokers seem to exist—efficacious brokers and burdened brokers—who differ significantly in their psychological experiences about brokering. A key predictor that distinguishes the



two groups is bilingual proficiency. Finally, compared to non-brokers, whereas efficacious brokers are not significantly affected by translating, burdened brokers' parent-child relationships and psychosocial well-being are at risk in the long run. This study has important practical implications, as educators and counselors can better identify young brokers at risk and properly design interventions to ensure their healthy development.

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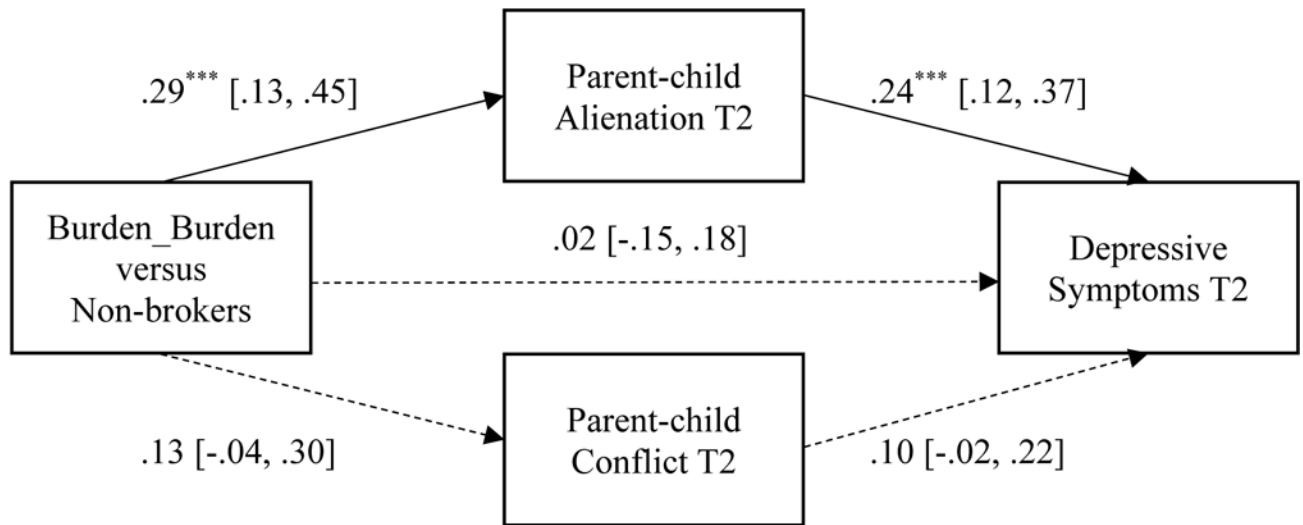
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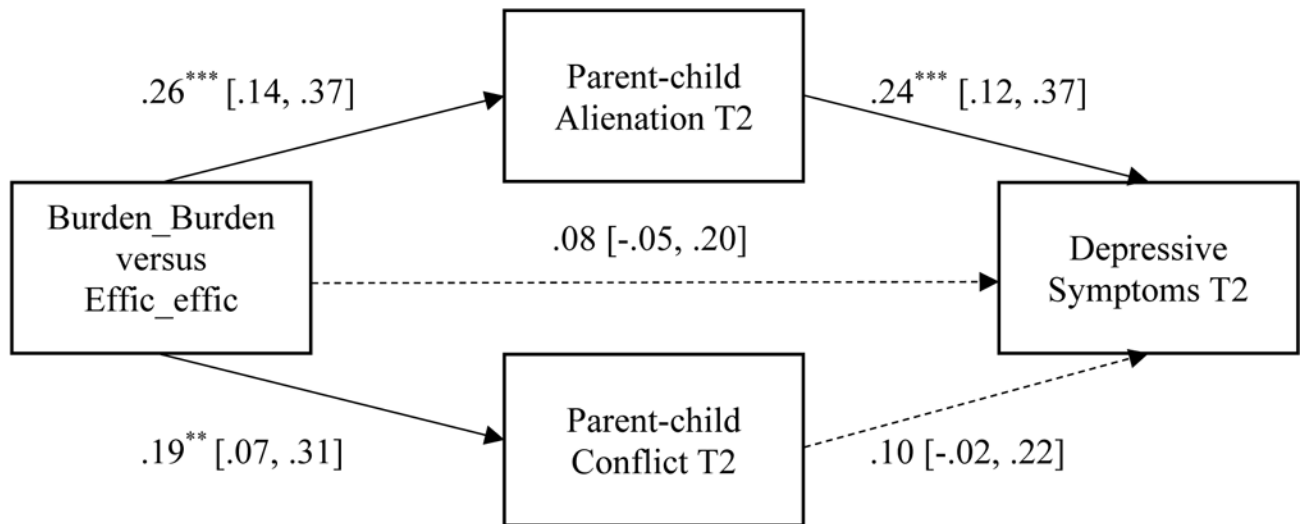
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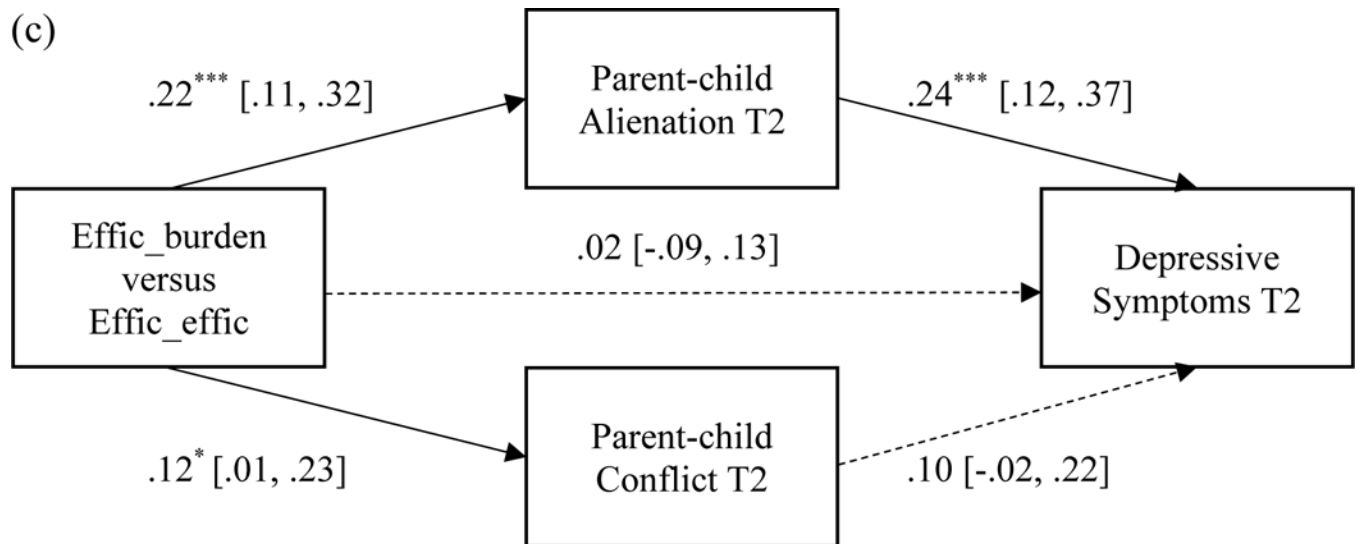
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(a)



(b)





**Figure 1.**

Mediation models with significant indirect effects of long-term broker subgroups on depressive symptoms at Time 2 via parent-child alienation and conflict at Time 2. Standardized path coefficients and 95% confidence intervals of the standardized coefficients are shown. Burden\_burden = burdened at Times 1 and 2; Effic\_effic = efficacious at Times 1 and 2; Effic\_burden = efficacious at Time 1 and burdened at Time 2. Long-term broker subgroups were dummy-coded with the latter group being the reference group. Paths involving other outcome variables at T2, autoregression, and covariates were simultaneously tested but not shown in the figure.

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

**Table 1.**

Descriptive statistics for variables.

Variables	T1					T2				
	Min	Max	N	M	SD	α	N	M	SD	α
Female	0.00	1.00	350	0.59	0.49	---	---	---	---	---
Age	16.00	19.00	350	17.04	0.72	---	---	---	---	---
Adolescent Chinese proficiency	1.00	5.00	346	2.83	1.11	---	---	---	---	---
Adolescent English proficiency	1.00	5.00	346	4.37	0.69	---	---	---	---	---
Adolescent acculturation	2.10	5.00	349	3.80	0.44	.79	---	---	---	---
Adolescent enculturation	1.90	5.00	349	3.79	0.56	.86	---	---	---	---
Mother English proficiency	1.00	5.00	295	2.41	1.27	---	---	---	---	---
Mother education	1.00	9.00	343	5.76	1.75	---	---	---	---	---
Mother acculturation	1.20	5.00	308	3.37	0.49	.85	---	---	---	---
Mother enculturation	1.60	5.00	308	3.86	0.50	.86	---	---	---	---
Language brokering frequency	2.00	5.00	243	3.44	0.93	---	---	---	---	---
Language brokering positive feelings	1.00	5.00	252	3.14	0.85	.77	250	3.28	0.87	.78
Language brokering negative feelings	1.00	5.00	252	2.15	0.84	.78	251	1.98	0.85	.89
Language brokering efficacy	1.00	5.00	246	2.90	0.87	.92	243	3.11	0.91	.92
Language brokering burden	1.00	5.00	252	2.76	1.00	.92	251	2.66	1.04	.87
Parent-child alienation	1.00	5.00	340	2.80	0.73	.87	329	2.65	0.73	.86
Parent-child conflict	1.00	5.00	338	2.81	0.90	.87	320	2.48	0.90	.90
Depression	0.00	2.40	348	0.71	0.46	.90	331	0.63	0.45	.90
Delinquency	0.00	1.00	344	0.21	0.18	---	329	0.19	0.21	---
GPA	0.60	4.00	322	3.21	0.54	---	---	---	---	---
Grades	1.00	12.00	---	---	---	---	306	8.01	1.87	---
Living with at least one parent	0.00	1.00	---	---	---	---	331	0.40	0.49	---

Note: T1 = Time 1; T2 = Time 2.

**Table 2.**

A comparison of 1-class to 5-class solutions for latent profile analysis at Times 1 and 2.

	1 class	2 classes	3 classes	4 classes	5 classes
Time 1					
BIC	3012.57	<b>2560.61</b>	2539.33	2530.02	2534.28
ABIC	2980.87	<b>2516.23</b>	2475.93	2447.60	2432.83
LMR-LRT <i>p</i> -value		<b>.02</b>	.16	.08	.60
Class distribution ( <i>n</i> )	252	<b>153-99</b>	79-132-41	20-12-111-109	14-12-101-110-15
Class distribution (%)	100	<b>61-39</b>	31-52-16	8-5-44-43	6-5-40-44-6
Time 2					
BIC	3051.98	<b>2555.61</b>	2520.89	2517.87	2501.94
ABIC	3020.27	<b>2511.23</b>	2457.49	2435.45	2400.49
LMR-LRT <i>p</i> -value		<b>.00</b>	.02	.35	.17
Class distribution ( <i>n</i> )	251	<b>139-112</b>	103-129-19	72-54-19-106	44-56-61-76-14
Class distribution (%)		<b>55-45</b>	41-51-8	29-22-8-42	18-22-24-30-6

Note: BIC = Bayesian information criterion, ABIC = adjusted Bayesian information criterion, LMR-LRT = Lo-Mendel-Rubin likelihood ratio test. The column in bold represents the final solution.

**Table 3.**

Multinomial logistic regressions predicting class membership at Time 1.

Predictors	Model 1				Model 1	
	Efficacious vs Non-brokers		Burdened vs Non-brokers		Efficacious vs Burdened	
	OR	CI	OR	CI	OR	CI
Female	1.38	[0.65, 2.89]	1.47	[0.66, 3.27]	0.91	[0.51, 1.61]
Age	1.05	[0.58, 1.88]	1.22	[0.67, 2.20]	0.83	[0.57, 1.20]
Child Chinese	<b>2.52<sup>***</sup></b>	<b>[1.48, 4.29]</b>	1.48	[0.86, 2.56]	<b>1.85<sup>***</sup></b>	<b>[1.31, 2.62]</b>
Child English	1.52	[0.76, 3.03]	0.80	[0.40, 1.60]	<b>2.09<sup>***</sup></b>	[1.36, 3.20]
Child acculturation	0.47	[0.12, 1.88]	0.49	[0.12, 1.99]	0.92	[0.40, 2.11]
Child enculturation	1.16	[0.42, 3.20]	1.05	[0.36, 3.09]	1.04	[0.53, 2.04]
Mother education	<b>0.59<sup>***</sup></b>	<b>[0.46, 0.77]</b>	<b>0.63<sup>**</sup></b>	<b>[0.47, 0.84]</b>	0.94	[0.78, 1.14]
Mother English	<b>0.48<sup>***</sup></b>	<b>[0.33, 0.69]</b>	<b>0.36<sup>***</sup></b>	<b>[0.22, 0.60]</b>	1.29	[0.85, 1.95]
Mother acculturation	0.72	[0.27, 1.96]	0.34 <sup>*</sup>	[0.12, 0.99]	<b>2.29<sup>*</sup></b>	[1.04, 5.07]
Mother enculturation	2.96 <sup>*</sup>	[1.23, 7.14]	3.11 <sup>*</sup>	[1.25, 7.75]	1.05	[0.53, 2.0]8
Brokering frequency	---	---	---	---	0.78	[0.56, 1.09]

Note: Model 1 compares efficacious and burdened language brokers against non-brokers. Model 2 compares efficacious brokers against burdened brokers, controlling for language brokering frequency.

\*  $p < .05$ ;

\*\*  $p < .01$ ;

\*\*\*  $p < .001$ .



**Table 4.**

Multinomial logistic regressions predicting longitudinal class membership across Times 1 and 2.

Predictors	Model 1 (Ref: Non-brokers)							
	Continuously Efficacious		Continuously Burdened		Burdened Efficacious		Efficacious Burdened	
	OR	CI	OR	CI	OR	CI	OR	CI
Female	0.50	[0.17, 1.52]	0.67	[0.22, 2.08]	0.56	[0.16, 1.97]	0.66	[0.21, 2.12]
Age	1.05	[0.43, 2.58]	1.43	[0.57, 3.58]	1.83	[0.73, 4.63]	1.45	[0.57, 3.67]
Child Chinese T1	<b>8.47***</b>	<b>[3.89, 18.42]</b>	<b>3.32**</b>	<b>[1.48, 7.42]</b>	<b>6.23***</b>	<b>[2.57, 15.12]</b>	<b>5.06***</b>	<b>[2.26, 11.29]</b>
Child English T1	1.21	[0.48, 3.08]	0.44	[0.18, 1.06]	0.95	[0.34, 2.66]	0.82	[0.3, 2.21]
Child acculturation T1	0.54	[0.05, 5.98]	0.90	[0.09, 9.09]	0.64	[0.05, 7.54]	0.61	[0.06, 6.76]
Child enculturation T1	0.59	[0.14, 2.42]	0.64	[0.15, 2.80]	0.57	[0.12, 2.63]	1.39	[0.3, 6.38]
Mother education	<b>0.52***</b>	<b>[0.35, 0.77]</b>	0.66*	[0.44, 0.98]	<b>0.46***</b>	<b>[0.3, 0.71]</b>	<b>0.52**</b>	<b>[0.35, 0.78]</b>
Mother English T1	<b>0.36***</b>	<b>[0.20, 0.66]</b>	<b>0.21***</b>	<b>[0.11, 0.40]</b>	<b>0.30***</b>	<b>[0.15, 0.62]</b>	<b>0.33**</b>	<b>[0.16, 0.69]</b>
Mother acculturation T1	0.80	[0.21, 3.05]	0.27	[0.07, 1.08]	0.53	[0.12, 2.23]	0.96	[0.16, 5.96]
Mother enculturation T1	3.87*	[1.08, 13.89]	2.05	[0.58, 7.26]	3.92	[1, 15.40]	1.13	[0.24, 5.36]
Brokering frequency T1	---	---	---	---	---	---	---	---

Predictors	Model 2 (Continuously Efficacious Brokers)					
	Continuously Burdened		Burdened Efficacious		Efficacious Burdened	
	OR	CI	OR	CI	OR	CI
Female	1.49	[0.64, 3.46]	1.07	[0.43, 2.64]	1.26	[0.52, 3.07]
Age	1.43	[0.75, 2.76]	1.73*	[1.00, 2.97]	1.43	[0.79, 2.59]
Child Chinese T1	<b>0.29***</b>	<b>[0.16, 0.52]</b>	0.70	[0.39, 1.27]	<b>0.52**</b>	<b>[0.32, 0.84]</b>
Child English T1	<b>0.27***</b>	<b>[0.15, 0.51]</b>	0.73	[0.36, 1.45]	0.60	[0.30, 1.20]
Child acculturation T1	1.90	[0.51, 7.04]	1.18	[0.35, 3.91]	1.23	[0.40, 3.77]
Child enculturation T1	1.32	[0.46, 3.82]	1.03	[0.40, 2.62]	2.52	[0.99, 6.43]
Mother education	1.34	[0.98, 1.83]	0.88	[0.65, 1.20]	1.00	[0.75, 1.34]
Mother English T1	0.57	[0.31, 1.08]	0.90	[0.48, 1.69]	1.04	[0.53, 2.04]
Mother acculturation T1	0.28*	[0.10, 0.79]	0.68	[0.24, 1.93]	1.16	[0.28, 4.78]
Mother enculturation T1	0.42	[0.15, 1.13]	0.95	[0.35, 2.59]	0.27*	[0.08, 0.99]
Brokering frequency T1	1.58	[0.95, 2.62]	1.13	[0.68, 1.89]	1.39	[0.83, 2.32]

Predictors	Model 3 (Ref: Continuously Burdened Brokers)				Model 4 (Ref: Burdened Efficacious)	
	Burdened Efficacious		Efficacious Burdened		Efficacious Burdened	
	OR	CI	OR	CI	OR	CI
Female	0.72	[0.26, 1.97]	0.85	[0.32, 2.23]	1.18	[0.41, 3.42]
Age	1.20	[0.60, 2.41]	1.00	[0.51, 1.95]	0.83	[0.44, 1.58]
Child Chinese T1	2.41*	[1.22, 4.73]	1.78	[0.96, 3.28]	0.74	[0.38, 1.44]
Child English T1	2.65*	[1.25, 5.62]	2.19*	[1.05, 4.57]	0.83	[0.36, 1.87]
Child acculturation T1	0.62	[0.15, 2.57]	0.65	[0.16, 2.61]	1.05	[0.28, 3.94]

Predictors	<u>Model 3 (Ref: Continuously Burdened Brokers)</u>				<u>Model 4 (Ref: Burdened Efficacious)</u>	
	<u>Burdened_Efficacious</u>		<u>Efficacious_Burdened</u>		<u>fficacious_Burdened</u>	
	OR	CI	OR	CI	OR	CI
Child enculturation T1	0.78	[0.25, 2.41]	1.90	[0.59, 6.10]	2.45	[0.82, 7.30]
Mother education	0.66 <sup>*</sup>	[0.47, 0.93]	0.74	[0.54, 1.02]	1.13	[0.81, 1.58]
Mother English T1	1.57	[0.76, 3.25]	1.81	[0.81, 4.07]	1.15	[0.50, 2.65]
Mother acculturation T1	2.39	[0.87, 6.59]	4.12	[0.88, 19.36]	1.73	[0.37, 8.04]
Mother enculturation T1	2.28	[0.77, 6.78]	0.66	[0.17, 2.54]	0.29	[0.07, 1.16]
Brokering frequency T1	0.72	[0.40, 1.30]	0.88	[0.49, 1.60]	1.23	[0.67, 2.26]

Note: Ref = reference group; Burdened\_Efficacious = burdened at Time 1 and efficacious at Time 2; Efficacious\_Burdened = efficacious at Time 1 and burdened at Time 2; T1 = Time 1.

\*  
 $p < .05$ ;

\*\*  
 $p < .01$ ;

\*\*\*  
 $p < .001$ ;

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**Table 5.**

Path analyses of longitudinal language broker classes predicting parent-child relationships and adjustment.

Direct effects	Parent-child Alienation T2		Parent-child Conflict T2		Depressive Symptoms T2		Delinquent Behaviors T2		Grades T2	
	$\beta$	CI	$\beta$	CI	$\beta$	CI	$\beta$	CI	$\beta$	CI
Brokering subgroup (Ref: non-brokers)										
Effic_effic	.04	[-.14, .22]	-.07	[-.26, .12]	-.07	[-.25, .11]	-.04	[-.23, .14]	-.07	[-.29, .14]
Burden_burden	<b>.29***</b>	[.13, .45]	.13	[-.04, .30]	.02	[-.15, .18]	.04	[-.13, .21]	.02	[-.18, .21]
Burden_effic	.16*	[.02, .29]	.06	[-.09, .20]	-.09	[-.23, .05]	-.09	[-.23, .06]	-.11	[-.28, .05]
Effic_burden	<b>.24***</b>	[.10, .38]	.07	[-.08, .22]	-.03	[-.18, .11]	.14	[-.01, .30]	.04	[-.14, .20]
Brokering subgroup (Ref: non-brokers)										
Burden_burden	<b>.26***</b>	[.14, .37]	<b>.19**</b>	[.07, .31]	.08	[-.05, .20]	.08	[-.05, .20]	.08	[-.06, .22]
Burden_effic	.13*	[.03, .23]	.10	[-.01, .21]	-.04	[-.15, .06]	-.06	[-.16, .05]	-.06	[-.18, .06]
Effic_burden	<b>.22***</b>	[.11, .32]	.12*	[.01, .23]	.02	[-.09, .13]	<b>.18**</b>	[.06, .29]	.09	[-.04, .21]
Brokering subgroup (Ref: non-brokers)										
Burden_effic	-.07	[-.18, .04]	-.04	[-.16, .07]	-.11	[-.22, .01]	-.12*	[-.23, .00]	-.12	[-.25, .01]
Effic_burden	.00	[-.12, .11]	-.04	[-.16, .08]	-.05	[-.17, .07]	.11	[-.01, .23]	.02	[-.11, .15]
P-c relationships T2										
P-c alienation T2	---	---	---	---	<b>.24***</b>	[.12, .37]	-.02	[-.14, .11]	-.14*	[-.28, .00]
P-c conflict T2	---	---	---	---	.10	[-.02, .22]	<b>.17**</b>	[.05, .29]	-.02	[-.5, .11]
Outcomes T1	<b>.44***</b>	[.35, .53]	<b>.42***</b>	[.33, .51]	<b>.33***</b>	[.23, .43]	<b>.37***</b>	[.27, .47]	<b>.38***</b>	[.26, .50]

Note: Ref = reference group; Effic\_effic = efficacious at Times 1 and 2; Burden\_burden = burdened at Times 1 and 2; Burden\_effic = burdened at Time 1 and efficacious at Time 2; Effic\_burden = efficacious at Time 1 and burdened at Time 2; P-c = parent-child; T1 = Time 1; T2 = Time 2.

\*  $p < .05$ ;

;100' < d  
\*\*\*  
'10' < d  
\*\*

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