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**Discrimination, Language Brokering Efficacy, and Academic Competence in
Mexican-American Adolescents**

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Competence in Mexican-American Adolescents**

by

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Dedication

This thesis is dedicated to my parents, Xinyou and Guoxian, who have been constant reminders of the love, kindness, and perseverance. I cannot be more grateful that you provide me with the precious opportunity to study abroad in the U.S. I would also like to dedicate this work to my husband, Minao, who continues to encourage and stand by me through every hardship.

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Abstract

Discrimination, Language Brokering Efficacy, and Academic Competence in Mexican-American Adolescents

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Discrimination is a significant risk factor for adolescents' academic competence. However, the mechanism underlying this association is understudied. Guided by the integrative model of minority children's development, this study examined whether a culture-specific factor, language brokering efficacy, mediated the relation between adolescents' perceived discrimination and their academic competence. Two waves of data from 604 Mexican American adolescents ($M_{\text{age.wave1}} = 12.41$, $SD = .97$, 54.3% female) residing in Central Texas were used. Path analyses showed that higher levels of discrimination were negatively related to adolescents' language brokering efficacy for both mothers and fathers, which was then linked to lower levels of academic competence. Implications for intervening to reduce the negative impacts of discrimination are discussed.

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Introduction

The Latino population, the largest and fastest growing ethnic minority group in the United States (Bureau, 2011), has demonstrated a clear educational achievement gap with the general population. Latino children are found to have lower levels of school readiness, higher school dropout rates, and worse academic outcomes compared to their White and Asian counterparts (Musu-Gillette et al., 2016). There are negative longitudinal consequences for such low academic achievement. For example, Latino individuals without a high school degree are more likely to have lower annual incomes compared to those with a high school degree, and they are at risk of living below the poverty line (Musu-Gillette et al., 2016). Scholars have identified discriminatory experiences as a significant risk factor for academic difficulties (Benner et al., 2018; English, Lambert, & Ialongo, 2016). Gaining a clearer understanding of the mechanisms underlying the association between discrimination and academic outcomes is essential for mitigating the achievement gap in Latino population (Lopez, Passel, & Rohal, 2015).

The current study draws from the integrative model for the development of ethnic minority children (Garcia Coll et al., 1996) to explore the potential mechanism underlying the negative relation between discrimination and academic outcome. In particular, the integrative model suggests that discrimination can influence ethnic minority adolescents' academic outcomes indirectly through their acculturative experiences, which are the unique experiences associated with adjusting to the language,

attitudes, and values of the host culture while maintaining the heritage culture (Schwartz, Unger, Zamboanga, & Szapocznik, 2010). One salient aspect of Mexican American adolescents' acculturative experiences is often their role as language brokers. Adolescent language brokers are often exposed to discriminatory treatment (Benner & Graham, 2011), and these experiences may influence how they feel about language brokering. For example, when adolescents perceived more negative feedback and unfair treatment, they may feel that they are not good at translating and thus have low levels of efficacy about language brokering. Lower levels of language brokering efficacy have been related to lower levels of academic achievement (Corona et al., 2012).

Taken together, there are theoretical and empirical reasons that language brokering efficacy may mediate the link between discrimination and academic outcomes; however, there is a dearth of research in investigating this mechanism. To fill this gap, the current study used a longitudinal sample of Mexican Americans, the largest subgroup of Latino Americans (Lopez et al., 2015), to examine whether language brokering efficacy can mediate the association between discrimination and academic competence.

PROCEDURE DISCRIMINATION AND ACADEMIC COMPETENCE

Discrimination is often described as negative and unfair behaviors towards someone because of their socially disadvantaged group membership (Aboud & Amato, 2001). It is prevalent in the lives of ethnic minorities, including Latino adolescents (Arellano-Morales et al., 2015). As Garcia Coll et al. (1996) suggest, discrimination plays a central role in children's developmental well-being. The direct association between

adolescents' perceived discrimination and their academic achievement is well demonstrated in the extant literature (see, Benner et al., 2018). For example, one longitudinal research by Benner and Kim (2009) found that earlier discrimination predicted worse academic performance (i.e., grades and school engagement). Other studies also found that Latino adolescents with greater self-reported discrimination were more likely to struggle academically (Chithambo, Huey Jr, & Cespedes-Knadle, 2014) and have lower levels of academic motivation (Perreira, Fuligni, & Potochnick, 2010).

Scholars argue that academic outcomes are multifaceted and should be captured by multiple indicators (e.g., learning, grade achievement, engagement; Crosnoe and Benner, 2012). Hence, the current study examines the consequences of discrimination for several indicators of academic competence, including grades, (i.e., learning goals, the goals for achievement that encompass the mindset and attitude to acquire new knowledge or skills, Grant & Dweck, 2003) and school engagement of adolescents. Despite the widely demonstrated negative association between discrimination and academic adjustment, there is a lack of study investigating the mechanisms underlying such association. The current study aims to fill in this gap by examining a potentially important mediator linking discrimination and adolescent academic outcomes: language brokering experiences, which are discussed in more detail in the following section.

DISCRIMINATION AND LANGUAGE BROKERING EFFICACY

Language brokering is often seen as rooted in the acculturation processes and acculturation differences between parents and children (Martinez, McClure, & Eddy,

2009). Specifically, as Mexican American immigrant families adapt to their life in the U.S., often times children become familiar with both the English language and mainstream culture at a faster rate than their parents. In turn, children of immigrants often serve as language brokers and translate for their English-limited parents in various contexts such as at home, in stores, and at the hospital (Kam & Lazarevic, 2014b). Approximately 71%-89% of Mexican American immigrant children serve as language brokers, and language brokering has been a part of their daily life (Kam & Lazarevic, 2014a).

Previous studies have found many individual and contextual factors that are associated with language brokering experiences. For individual factors, the integrative model of language and cultural brokering suggests that adolescent language proficiency is positively associated with positive feelings of brokering (Kam & Lazarevic, 2014a). However, less is known about how the contextual factor of discrimination influences brokering experiences. Given that discrimination is very prevalent in the lives of ethnic minority children (Arellano-Morales et al., 2015), and according to Garcia Coll's integrative model (1996), ethnic minority children's perceived discrimination can influence their acculturative experiences, including their culturally unique role as language brokers. As language brokers, they are likely to form subjective appraisals regarding the brokering experiences, and one positive aspect of their subjective feelings is language brokering efficacy, which is defined as language brokers' belief in their ability to translate accurately and effectively for their parents (Kim, Hou, Shen, & Zhang,

2017). In the current study, we investigated whether adolescents' perceived discrimination influenced adolescents' subjective feelings of efficacy towards language brokering.

According to Bandura's theory on self-efficacy (1977), individuals can feel more efficacious through the positive encouragement from others pertaining to their performance. Based on this tenet, it is possible that adolescent language brokers would feel less confident and competent in their ability of brokering if they are placed in a highly discriminatory environment where they receive negative feedback and unfair treatment rather than praise. Although no work to our knowledge has examined the association between discrimination and language brokering efficacy, some studies have found that discrimination is negatively associated with Latino adolescents' confidence in their general abilities (Romero & Roberts, 2003; Umaña-Taylor & Updegraff, 2007). Thus, guided by the integrative model (García Coll et al., 1996) and Bandura's theory of self-efficacy (Bandura, 1977), the current study hypothesizes that adolescents' perceived discrimination would negatively relate to their language brokering efficacy.

LANGUAGE BROKERING EFFICACY AND ACADEMIC COMPETENCE

Prior studies examining the effect of language brokering on adolescents' academic adjustment often focus on the objective aspect of language brokering (e.g., frequency of translation). Findings from these studies have been mixed, with both positive and negative outcomes observed regarding the impact of language brokering. Specifically, some studies show that children who act as language brokers attain better

academic performance (Buriel, Perez, De Ment, Chavez, & Moran, 1998) and have higher academic self-efficacy (Acoach & Webb, 2004). Other studies, however, identify negative academic outcomes among language brokers, such as increased school stress, poorer homework quality and worse perceptions of their academic abilities (Niehaus & Kumpiene, 2014). It may be that capturing the psychological feelings around language brokering can be useful for untangling such mixed findings (Kim, Hou, & Gonzalez, 2017). One important aspect of psychological feelings regarding language brokering is language brokering efficacy. Indeed, Kam and Lazarevic (2014b) found that adolescents derive a sense of efficacy from translating when they are good at it and when they can translate correctly for their parents. It may be the efficaciousness derived from brokering experiences that drives the positive academic outcomes. Accordingly, the current study focuses on examining the relation between language brokering efficacy and academic outcomes.

Previous studies have shown that self-efficacy is an important predictor of academic performance (Chemers, Hu, & Garcia, 2001; Rivers, Mullis, Fortner, & Mullis, 2012). As such, self-efficacious adolescents are found to have more confidence in their capacity to succeed in school as well as greater academic and career aspirations (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001; Zuffianò et al., 2013). Applying these findings to the research on language brokering, it may be that language brokering efficacy, a domain-specific self-efficacy, also positively relates to adolescents' academic outcomes. That is, the sense of efficacy for translating correctly for parents could extend

to adolescents' academic confidence as well as their ability to perform well in school. Some work has shown initial evidence that Latino adolescents' general self-efficacy developed through language brokering experiences was associated with better educational achievement (Buriel et al., 1998). Extending this, we hypothesized that language brokering efficacy would also positively relate to Mexican American adolescents' academic outcomes and that language brokering efficacy would mediate the relation between discrimination and academic competence.

THE ROLE OF PARENT GENDER

Most extant studies on language brokering focus only on adolescent brokering experiences for mothers (Kam & Lazarevic, 2014a; Shen, Kim, Wang, & Chao, 2014); however, adolescents also perform brokering tasks for fathers. Indeed, the one study that did include adolescent brokering experiences for both parents found that adolescent brokers have different subjective brokering experiences when translating for fathers versus mothers (Wu & Kim, 2009), such that adolescents felt a stronger sense of burden as well as a greater sense of efficacy when translating for mothers versus fathers. However, it is still unknown whether subjective experiences of language brokering for mothers and fathers would relate to adolescents' developmental outcomes differently. Thus, the current study explored whether efficacy of brokering for fathers versus mothers relate to adolescents' academic outcomes differently. We offered no hypotheses given the lack of prior empirical study on this potential moderating effect.

CURRENT STUDY

Guided by the integrative model of child development for ethnic minority children (Garcia Coll et al., 1996), there are two aims in the current study (see Figure 1 for conceptual model). First, we examined the mediating effect of language brokering efficacy on the relation between discrimination and academic competence. Second, we explored whether the mediational model operates differently when adolescents translate for fathers versus mothers. We examined these associations using longitudinal data, which provides a more rigorous examination of the hypothesized mediational and moderational processes (Cole & Maxwell, 2003).

Method

PARTICIPANTS

Data for the current investigation come from a two-wave longitudinal study of 604 Mexican American immigrant families residing in and around a metropolitan city in central Texas. Data were collected when adolescents were in sixth through eighth grades ($M_{age} = 12.41$, $SD = .97$) at Wave 1. Slightly over half of the sample were female ($N = 328$, 54.3%), and the majority of adolescent participants were born in the U.S. ($N = 455$, 75.3%). Both the mean and median family income were between \$20,001 to \$30,000, with a majority of the families (89%) reporting family incomes lower than \$50,001. For both fathers and mothers, the mean and median highest education level were finished middle school. Most of the fathers (87%) and about half of the mothers (46%) were employed at least part-time, and most of the parents' occupations were unskilled laborers (e.g., construction worker, truck driver, mover, restaurant server).

Procedures

Participants were recruited through public records, school presentations, and community recruitment from 2012 to 2015. To qualify for participation, parents were required to be of Mexican origin with a child in middle school who translated for at least one parent. A family visit was scheduled to obtain parents' consent and adolescent assent after families were screened as eligible. Bilingual and bicultural interviewers read questions aloud and entered participants' responses on a laptop computer. Both languages, English and Spanish, were also presented together on the questionnaires

administered to the participants. In total, two waves of data (approximately one year apart) were collected following these procedures. Of the 604 families participating in Wave 1, 483 (80%) families also agreed to participate in Wave 2. Families that participated were compensated \$60 at Wave 1 and \$90 at Wave 2. Attrition analyses were conducted to compare families who participated in both waves to those who had dropped out at Wave 2 on demographic variables and all study variables at Wave 1. No differences were found between groups except that for families that continued participating, parents tended to have higher education (t mother (591) = 2.41, $p < .05$; t father (291) = 3.13, $p < .01$).

Measures

Descriptive statistics and bivariate correlations for the measures appear in Table 1. All measures assessing central study constructs were collected at Waves 1 and 2.

Discrimination. Adolescents' perceived discrimination was measured by the daily discrimination scale (Kessler, Mickelson, & Williams, 1999). This scale was measured by nine items. (e.g., "I am treated with less courtesy than other people") using a four-point scale (ranging from "1 = never" to "4 = often"), with higher mean scores indicating more experiences of being the target of discrimination ($\alpha = .82$ at wave 1 and $\alpha = .84$ at wave 2).

Language brokering efficacy. Adolescents' efficacy as a translator for parents was assessed by four items derived from Kim et al. (2017) (e.g., "I am good at translating for my mother (or father)"). Adolescents reported for mothers and fathers

separately on a scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher mean scores reflected a higher sense of efficacy ($\alpha = .87$ and $.90$ for fathers at wave 1 and 2, $\alpha = .83$ and $.84$ for mother at wave 1 and 2).

Academic competence. The latent variable of academic competence relied on adolescents' self-reports of three measures—grades, learning goals, and school engagement. Adolescents identified their grades on a 13-point scale ranging from 1 (F) to 13 (A+). Learning goals were assessed by two items derived from Grant and Dweck's study (2003), including "I strive to constantly learn and improve in classes," and "in my classes I focus on developing my abilities and acquiring new ones." Adolescents reported on a scale of 1 (strongly disagree) to 5 (strongly agree), with higher mean scores reflecting greater levels of learning goals ($r = .52$ and $.59$ at waves 1 and 2, respectively). School engagement was based on four items derived from Hou et al. (2017). A sample item is "I am motivated to get good grades in school." Adolescents reported on a scale of 1 (strongly disagree) to 5 (strongly agree), with higher scores reflecting higher levels of school engagement ($\alpha = .76$ and $.77$ at waves 1 and 2, respectively). Tests of the measurement model suggested that the three indicators loaded well on the latent variable of academic competence: λ s ranging from $.49$ to $.77$, $p < .001$ at W1; λ s ranging from $.54$ to $.75$, $p < .001$ at W2.

Covariates. A set of demographic variables were included as covariates in the current study, including adolescent age, gender, nativity (i.e., whether born in the U.S. or not), and parental education and income given their association with adolescents'

developmental outcomes demonstrated in prior studies (Conger & Donnellan, 2007; Yip, Gee, & Takeuchi, 2008). Fathers and mothers reported on their highest education level on a scale of 1 (no formal schooling) to 11 (finished graduate degree). Fathers and mothers self-reported their income using 11-point scale, ranging from 1 (\$10,000 or under) to 11 (\$110,001 or more). Because fathers and mothers report of family income were highly correlated ($r = .58$), they were subsequently averaged into a single mean score.

In addition, adolescent language brokering frequency and proficiency as well as their acculturation levels at Wave 1 were included as covariates because prior studies have demonstrated that these factors relate to language brokering experiences as well as adolescents' academic outcomes (Acoach & Webb, 2004; Halgunseth, 2003; Weisskirch & Alva, 2002). Adolescents reported, in general, how often they translated for their mothers and fathers separately, on a scale ranging from 1 (never) to 6 (daily). Language brokering proficiency was assessed by three items each for English and Spanish (e.g., "How well do you speak and understand English (or Spanish)?"). Adolescents reported on a 5-point scale ranging from 1 (not well) to 5 (extremely well). Higher mean scores reflected better language skills ($\alpha = .83$ and $.80$ for English and Spanish, respectively). Adolescents' acculturation level was assessed by 20 items derived from the Vancouver Index of Acculturation (VIA) (Ryder, Alden, & Paulhus, 2000). Using a scale ranging from 1 (strongly disagree) to 5 (strongly agree), adolescents responded to 10 questions about their American orientation (e.g., "I often follow traditions of the American culture") and 10 questions about their Mexican orientation (e.g., "I often follow traditions

of the Mexican culture”). An average of the items was used, and the acculturation score was computed separately for American and Mexican orientation ($\alpha = .88$ for Mexican orientation and $\alpha = .85$ for American orientation).

Analysis Plan

Path analyses were conducted using Mplus 7.3 (Muthén & Muthén, 1998-2011), which handles missing data through the full-information maximum likelihood (FIML) estimation. With the FIML estimation, all available data were included in the analyses. To test whether discrimination related to adolescents' academic competence indirectly through language brokering efficacy, we analyzed a path model shown in Figure 1. Adolescents' language brokering efficacy when translating for fathers and mothers were included in the same model to recognize potential shared variance. In the path model, adolescents' perceived discrimination, language brokering efficacy, and adolescents' academic competence were measured at both Wave 1 and Wave 2; MacCallum and Austin (2000) emphasized the importance of including autoregressive effects as well as concurrent relations of constructs when estimating longitudinal effects. Thus, we tested the concurrent paths (a1-a10 in Figure 1), stability paths (autoregressive; b1-b4), and longitudinal paths (cross-lagged; c1-c5) relations among the study constructs simultaneously. This modeling makes it possible to examine the longitudinal relations (c paths) while controlling for prior levels of study variables (b paths). In addition, we are able to examine whether the longitudinal relations (c paths) are mediated by the concurrent (a paths) or stability paths (b paths). All the potential mediating pathways from discrimination (at Waves 1 and 2) to the academic competence (at wave 2) were examined.

Second, to test whether the paths differed across brokering for fathers versus mothers, we conducted tests of structural invariance. We used a stepwise process whereby we initially estimated the base (i.e., full) model; we then constrained each individual set of pathways across brokering for fathers and mothers to be equal (e.g., a1 and a3 paths, c1 and c2 paths). We used omnibus test (e.g., chi-square difference tests) to determine whether the more constrained model resulted in a significant decrease in the overall model fit. Significant decreases would suggest that the constrained model fit the data worse than the full model and, as such, that there are meaningful differences across brokering for fathers and mothers.

Results

LINKING DISCRIMINATION, BROKERING EFFICACY, AND ACADEMIC COMPETENCE

To examine the direct and indirect relations among focal variables, we tested the conceptual model shown in Figure 1. The model fit for this model with covariates was good, $\chi^2(148) = 342.42$, $p = 0.00$, comparative fit index (CFI) = 0.92, root mean square error of approximation (RMSEA) = 0.05 [CI: 0.04, 0.05], standard root mean-square residual (SRMR) = 0.05. The standardized path parameters for the model are presented in Figure 2.

Direct links among central study constructs. The general pattern of concurrent relations (a paths) were significant in the models. Specifically, discrimination was negatively related to language brokering efficacy within each wave and when brokering for both fathers (a3 and a4 paths) and mothers (a1 and a2 paths). Language brokering efficacy when brokering for mothers was positively related to academic competence within each wave (a5 and a6 paths), whereas language brokering efficacy when brokering for fathers was positively related to academic competence within Wave 1 (a7 path) but not within Wave 2 (a8 path). Discrimination also was negatively related to academic competence within each wave (a9 and a10 paths). Auto-regressive paths linking the same constructs across waves were significant in the model (b paths, $\beta_s = 0.41 - 0.86$, $p < 0.001$), indicating substantial stability of perceived discrimination, language brokering efficacy, and academic outcomes across the two waves.

In general, the cross-lagged paths (c paths) did not emerge as significant despite significant longitudinal zero-order correlations between discrimination, language brokering efficacy, and academic competence (see Table 1). The non-significance for the cross-lagged paths is likely due to the fact that the relations are fully mediated by the concurrent and stability paths. As an exception, language brokering efficacy for mothers at W1 was negatively related to academic competence at W2 ($\beta = -0.195$, $p < 0.01$). This significant path is contrary to the expected direction and the observed bivariate correlations (see Table 1). As such, this is likely due to a suppression effect, which may be due to the strong stability of academic competence across two waves ($\beta = 0.86$, $p < 0.001$). Given the suppression effect, we did not test indirect pathways involving this cross-lagged path.

Indirect effects from discrimination to adolescents' academic outcomes. All potential indirect effects from discrimination to adolescents' academic competence were tested (see Table 2). Consistent with the hypotheses, both concurrent and longitudinal indirect pathways were found. Concurrently, the effect of discrimination at Wave 1 on academic competence at Wave 1 was mediated by language brokering efficacy when brokering for both fathers and mothers at Wave 1. The effect of discrimination at Wave 2 on academic competence at Wave 2 was mediated by language brokering efficacy when brokering for mothers (but not fathers) at Wave 2. Longitudinally, the indirect effect of discrimination at Wave 1 on academic competence at Wave 2 was significant via three pathways. First, discrimination at Wave 1 was stably related to discrimination at Wave 2,

which was then negatively related to language brokering efficacy when brokering for mothers at Wave 2. Then, efficacy of language brokering for mother at Wave 2 related to better academic competence at Wave 2. Second, discrimination at Wave 1 was negatively related to language brokering efficacy when translating for mothers at Wave 1, which was then related to language brokering efficacy when translating for mothers at Wave 2. This was in turn related to better academic competence at Wave 2. Third, discrimination at Wave 1 was negatively related to language brokering efficacy at Wave 1 (when brokering for both fathers and mothers), which was then positively related to academic competence at Wave 1. This was then related to academic competence at Wave 2.

PARENT GENDER DIFFERENCES

We also explored whether the relations under study were different when brokering for fathers versus mothers (see Table 3). Results demonstrated that the relation between language brokering efficacy at Wave 2 and academic competence at Wave 2 differed significantly across brokering for fathers versus mothers. Specifically, language brokering efficacy when brokering for mothers had a stronger effect on adolescents' academic competence ($\beta = .23, p < .001$) compared with brokering for fathers ($\beta = .02, p = .78$). There was no significant parent gender difference in any other paths in the model.

SUPPLEMENTARY ANALYSES

We conducted two sets of supplementary analyses to more conservatively examine the model relations. In the first set of supplementary analyses, we did not include Wave 1 academic competence given the strong stability of academic competence

across two waves to examine the suppression effect in more depth (seen in Figure 3). This model appeared to fit the data well ($\chi^2(102) = 199.46$, $p = 0.00$, $RMSEA = 0.04$ [CI: 0.03, 0.05], $CFI = 0.95$, $SRMR = 0.05$). As seen in Figure 3, the model results were rather similar to the original model; however, the suppressed pathway from language brokering efficacy for mothers at W1 to academic competence at W2 became non-significant ($\beta = 0.00$, $p = 0.97$). This adds the evidence that the stability of academic competence may be contributing to the suppression effect.

In the second set of supplementary analysis, we tested an alternative model that examined whether academic competence was linked to language brokering efficacy and whether language brokering efficacy was, in turn, linked to discrimination. Theoretically, it is possible that better academic competence would drive adolescents to feel more efficacious in their ability of brokering for parents. The increased language brokering efficacy may then make them be less aware of or less sensitive to the discriminatory treatments. The model fit indices of the alternative model (seen in Figure 4, $\chi^2(148) = 320.36$, $p = 0.00$, $RMSEA = 0.04$ [CI: 0.04, 0.05], $CFI = 0.93$, $SRMR = 0.04$) were similar as the original model. We found that academic competence positively influenced language brokering efficacy within each wave and when brokering for both fathers and mothers; however, language brokering efficacy did not significantly relate to discrimination at either wave. Moreover, there were no significant indirect pathways from academic competence to discrimination. Therefore, the original hypotheses, derived from theoretical and empirical evidence, regarding the indirect pathways linking

discrimination, language brokering efficacy and academic competence were better supported by the data.

Discussion

Despite past research suggesting the detrimental influence of discrimination on children's academic achievement (Benner & Graham, 2011; Brown & Chu, 2012), there is a dearth of studies examining the mechanisms through which discrimination may relate to adolescents' academic competence. Identifying mechanisms is important because it is critical for developing intervention programs. The current study investigated a theoretically-motivated, culture-specific mechanism (i.e., sense of efficacy from language brokering) as a possible mediator explaining part of the negative effects of discrimination on academics.

LINKING DISCRIMINATION, LANGUAGE BROKERING EFFICACY AND ACADEMIC COMPETENCE

Consistent with the hypotheses, the current study found that discrimination was negatively related to adolescents' sense of brokering efficacy when translating for both fathers and mothers. This result is consistent with the tent of Garcia Coll and colleagues' (1996) integrative model, which proposes that experiences of discrimination could influence adolescents' acculturative experiences, conceptualized as language brokering experiences in the current study. The current study also extends previous finding of the negative influences of discrimination on adolescents' general sense of efficacy (Romero & Roberts, 2003; Umaña-Taylor & Updegraff, 2007) by demonstrating that discrimination can also exert negative influence on adolescents' language brokering efficacy, which is a domain-specific efficacy.

Prior research has found that efficacious adolescents tend to be more confident in their ability to perform well in school (Bandura et al., 2001; Zuffianò et al., 2013). The current study extends this finding to the context of language brokering and found that adolescents' sense of efficacy when language brokering for their parents was also positively related to their academic competence. This suggests that language brokering efficacy can serve as a promotive factor that enables adolescents to become academically more competent. Extant literatures mainly focus on the disadvantages of Mexican immigrant families (e.g., low social economic status and limited access to resources, Schhneider, Martinez, & Ownes, 2006) and how they lead to lower achievement, whereas the promotive and positive aspects of Mexican immigrant families are often ignored (Dumka, Roosa, & Jackson, 1997; English et al., 2016). The current study sheds light on the importance of incorporating minority adolescents' unique and promotive acculturative experiences of language brokering to understand their academic outcomes.

Consistent with many prior studies (Benner et al., 2018), the current study found that discrimination was negatively related to academic competence. More importantly, the current study moves beyond these previous studies by revealing an important mechanism underlying the negative link from discrimination to academic competence. We found that adolescents who perceived higher levels of discrimination viewed themselves as less efficacious when brokering for mothers and fathers. This reduced brokering efficacy was then linked to lower levels of academic competence. Language brokering is an important aspect of acculturative experiences of adolescents in immigrant

families (Martinez et al., 2009). Our study suggests that this particular acculturative experience play an important role in linking discrimination and adolescent development. Our results are consistent with the general tenet of integrative model of the development of minority children (Garcia Coll et al., 1996), which suggest that discrimination can relate to child development through multiple mechanisms including acculturative experiences. This finding is particularly important to consider when designing programs to promote academic success among Mexican American adolescents. It underscores the need to implement programs that focus on improving adolescents' sense of efficacy on brokering tasks. Parents can help their language broker children build a stronger sense of language brokering efficacy through recognizing their broker children's strengths in brokering, offering more praise, and giving more positive feedback after their children translate for them (Guan & Shen, 2015). In addition, past studies have found that bilingual proficiency is essential in enhancing language brokers' sense of efficacy (Kam & Lazarevic, 2014a). Thus, interventions or afterschool programs that specifically target improving bilingual language skills can be developed.

VARIATION BY PARENT GENDER

The current study distinguishes the language brokering experiences between brokering for fathers versus mothers, moving beyond prior studies focusing on experiences of language brokering for mothers only (Kam & Lazarevic, 2014a; Shen et al., 2014). We found that efficacy of brokering for mothers (versus fathers) was more influential for adolescent academic competence at Wave 2 but not at Wave 1 or

longitudinally. Moreover, efficacy of brokering for mothers and fathers both mediated the link between discrimination and adolescent academic competence. Thus, overall, the results suggest that experiences of brokering for mothers and fathers are similarly important for adolescent academic competence, despite that past research demonstrated mean-level differences in adolescents' experiences of language brokering for mothers versus fathers (Wu & Kim, 2009). These findings are consistent with prior studies demonstrating that both brokering for mothers and fathers related to adolescent outcomes (Kim et al., 2018) and the broader literature demonstrating the important roles of both fathers and mothers play in child development (Connell & Goodman, 2002; Wang & Kenny, 2014). Our results highlight the importance of considering adolescents' experiences of brokering for both mothers and fathers to provide more comprehensive understanding of the role of brokering experiences in adolescent language brokers' development.

Contributions and Limitations

There are several strengths of the current study. First, this is the first study, to our knowledge, that demonstrates the indirect links from discrimination to adolescents' academic competence via language brokering experiences. This finding underscores the importance of incorporating ethnic minority adolescents' unique and promotive acculturative experiences in understanding the effect of discriminatory experiences on their well-being. Second, whereas most of the existing research on language brokering focuses only on brokering for mothers, the current study distinguished adolescents' brokering experiences when translating for fathers versus mothers. This allowed us to explore the differential influences of brokering for mothers versus fathers on adolescents' well-being. Lastly, the current study used a longitudinal design, which allowed for more robust tests of the model relations and an examination of the indirect effects both concurrently and longitudinally.

Although the current study makes contribution to the existing literature, limitations should be noted. First, the generalizability of the current findings to other Mexican American samples needs to be tested. Participants of the current study came from an area with a large population of Mexican Americans. Studies have shown that ethnically concentrated neighborhoods can act as a buffer that protects Mexican American adolescents from discriminatory experiences (White, Zeiders, Knight, Roosa, & Tein, 2014). Thus, future studies with participants from communities with lower same-ethnic concentrations should be conducted to determine if language brokering efficacy

also functions as a mediating mechanism for individuals not residing in ethnic enclaves. In the similar vein, participants in the current study are from Mexican immigrant families with low socioeconomic status (SES). As language brokering is found to be more prevalent within low SES families (Kwon, 2015), it is unknown whether language brokering efficacy would still hold as an explanatory mechanism within high SES families where language brokering is less prevalent. It would be important for future studies to investigate other aspects of language brokering or other culturally unique experiences of minority children. For example, bilingualism has been considered a unique cultural asset for Mexican American children (Borrero, 2015). As bilingualism is associated with better academic outcomes in general (Golash-Boza, 2005; Ke, 2014), future studies can explore whether such benefits still hold for Mexican American adolescent brokers and whether such benefits can counteract the negative influences of discrimination on adolescents' academic outcomes.

Conclusion

The present study highlights the importance of incorporating ethnic minority children's acculturative experiences in untangling the underlying mechanism between discrimination and academic competence. The findings from the current study suggest that language brokering efficacy acts as a mediator in the association between discrimination and adolescents' academic competence. Theoretically, the current study underscores the important role of considering adolescents' subjective language brokering experiences in linking the contextual factors with developmental competence. Practically, the current study also suggests that interventions for improving language brokering efficacy may be effective in reducing the negative impacts of discrimination on adolescents' academic competence.

Tables

Table 1. *Bivariate Correlations, Means, and Standard Deviation for Study Variables*

	1	2	3	4	5	6	7	8	9	10	11	12
1 Discrimination W2	-											
2 Discrimination W2	.54**	-										
3 Brokering efficacy for mothers W1	-.20**	-.15**	-									
4 Brokering efficacy for mothers W2	-.17**	-.24**	.50**	-								
5 Brokering efficacy for fathers W1	-.22**	-.21**	.75**	.53**	-							
6 Brokering efficacy for fathers W2	-.24**	-.22**	.44**	.71**	.53**	-						
7 Intrinsic motivation W1	-.120**	-.21**	.35**	.28**	.33**	.27**	-					
8 Intrinsic motivation W2	-.21**	-.22**	.23**	.27**	.25**	.24**	.43**	-				
9 School engagement W1	-.27**	-.23**	.40**	.34**	.36**	.32**	.53**	.40**	-			
10 School engagement W2	-.22**	-.27**	.24**	.38**	.28**	.31**	.38**	.55**	.51**	-		
11 GPA W1	-.13**	-.13**	.23**	.23**	.21**	.16**	.32**	.24**	.37**	.31**	-	
12 GPA W2	-.11*	-.14**	.13**	.24**	.17**	.27**	.26**	.22**	.33**	.38**	.51**	-
<i>Mean</i>	1.63	1.56	3.4	3.44	3.37	3.38	3.91	3.87	3.91	3.88	10.1	10.01
<i>SD</i>	0.48	0.47	0.71	0.67	0.76	0.76	0.67	0.68	0.6	0.58	1.81	1.90
<i>N</i>	604	483	602	482	530	419	604	483	604	483	602	482

Note. W1 = Wave 1; W2 = Wave 2. ** $p < .01$.

Table 2

Tests of Mediation for Path Analysis Model for (N = 604)

Paths	total	Direct	Indirect
Disc W1 → Academic W2	-.26***	.04	-.29***
Disc W1 → Disc W2 → Academic W2			-.06*
Disc W1 → Brokering efficacy for mothers W2 → Academic W2			.00
Disc W1 → Brokering efficacy for fathers W1 → Academic W2			.01
Disc W1 → Brokering efficacy for fathers W2 → Academic W2			.00
Disc W1 → Academic W1 → Academic W2			-.16***
Disc W1 → Disc W2 → Brokering efficacy for mothers W2 → Academic W2			-.02**
Disc W1 → Brokering efficacy for mothers W1 → Brokering efficacy for mothers W2 → Academic W2			-.01**
Disc W1 → Disc W2 → Brokering efficacy for fathers W2 → Academic W2			.00
Disc W1 → Brokering efficacy for fathers W1 → Brokering efficacy for fathers W2 → Academic W2			.00
Disc W1 → Brokering efficacy for mothers W1 → Academic W1 → Academic W2			-.03**
Disc W1 → Brokering efficacy for fathers W1 → Academic W1 → Academic W2			-.03*
Disc W2 → Academic W2	-.16**	-.12*	-.05**
Disc W2 → Brokering efficacy for mothers W2 → Academic W2			-.04**
Disc W2 → Brokering efficacy for fathers W2 → Academic W2			-.00
Disc W1 → Academic W1			
Disc W1 → Brokering efficacy for mothers W1 → Academic W1			-.04**
Disc W1 → Brokering efficacy for fathers W1 → Academic W1			-.04*

Note. Disc = Discrimination; Academic = Academic Competence; W1 = Wave 1; W2 = Wave 2. Significant pathways are bolded. ** $p < .01$. *** $p < .001$

Table 3

<i>Invariance Tests Across Language Brokering Efficacy for Fathers and Mothers</i>						
	χ^2 (df)	$\Delta\chi^2$ (Δdf)	<i>p</i> -value	CFI	RMSEA	SRMR
1. Base Model	342.42 (148)	-	-	0.95	0.04	0.05
2. Structural invariance						
a. Disc W1 to Brokering efficacy W1	344.32 (149)	1.90 (1)	0.17	0.92	0.05	0.05
b. Disc W1 to Brokering efficacy W2	344.93 (149)	2.51 (1)	0.11	0.92	0.05	0.05
c. Disc W2 to Brokering efficacy W2	343.93 (149)	1.51 (1)	0.22	0.92	0.05	0.05
d. Brokering efficacy W1 to Academic W2	344.34 (149)	1.91 (1)	0.17	0.92	0.05	0.05
e. Brokering efficacy W2 to academic W2	346.35 (149)	3.92 (1)	0.05	0.92	0.05	0.05
f. Brokering efficacy W1 to Academic W1	342.75 (149)	0.32 (1)	0.57	0.92	0.05	0.05

Note. All model comparisons were made comparing to the base model. Disc = Discrimination; Academic = Academic Competence; W1 = Wave 1; W2 = Wave 2. *ns* = not significant

Figures

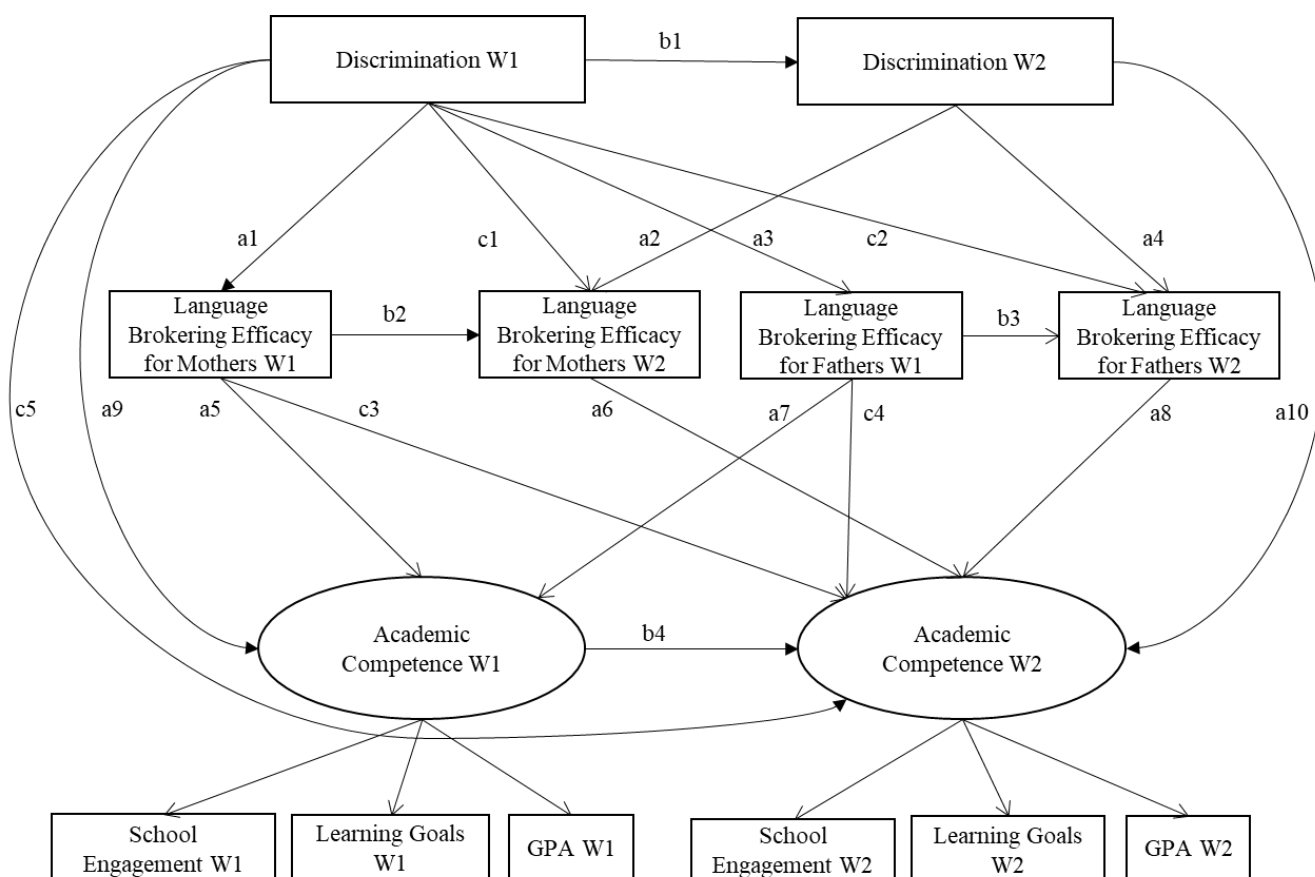


Figure 1. Conceptual model linking adolescents' perceived discrimination, language brokering efficacy and academic competence.

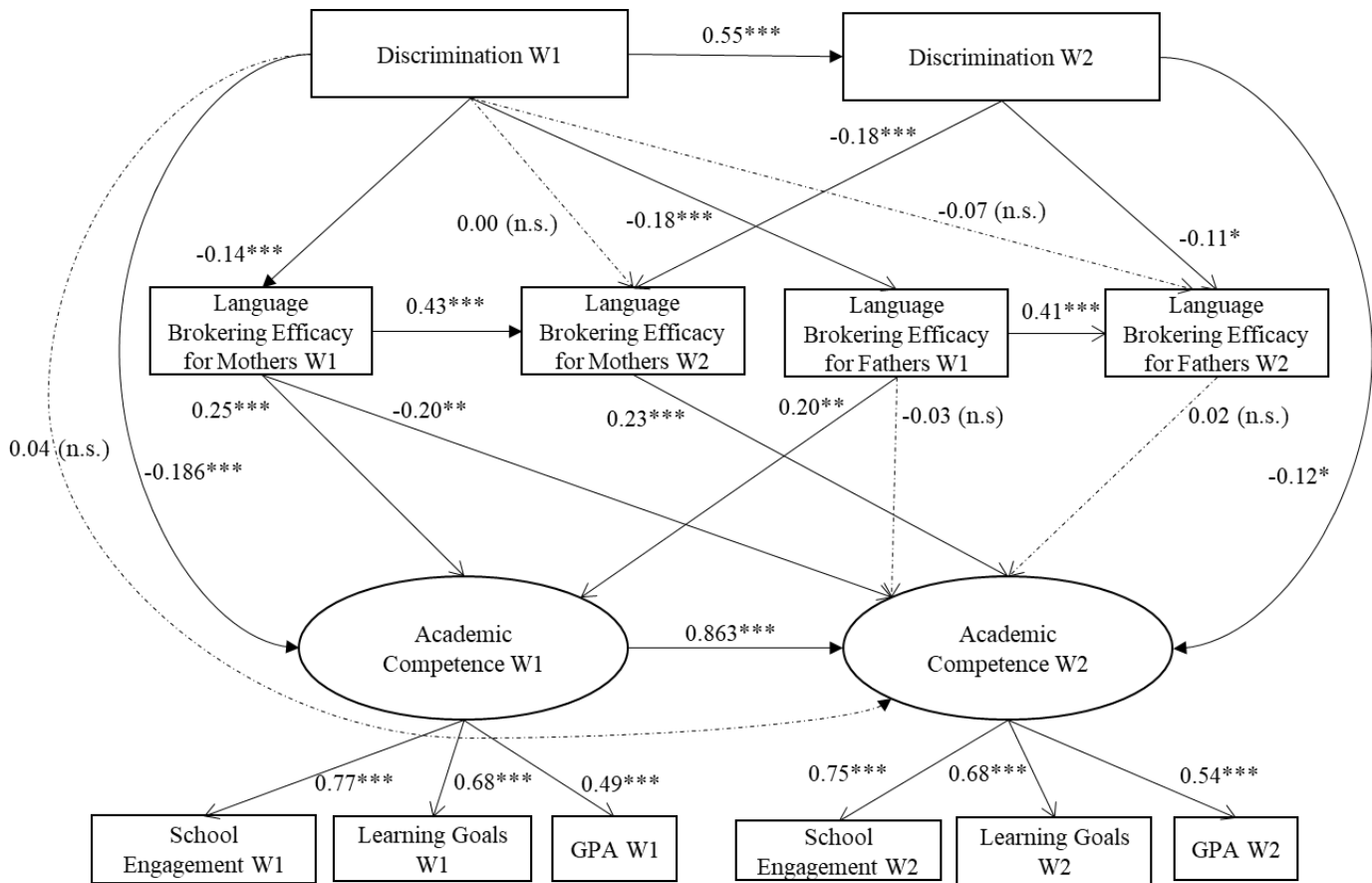


Figure 2. Mediation model that linking discrimination, language brokering efficacy, and academic competence. Standardized path parameters are presented. W1 = Wave 1, W2 = Wave 2, n.s. = not significant. For simplicity, controlled variables were not presented in the figure. Significant paths are shown in solid line and non-significant paths are shown in dashed-line. * $p < .05$, ** $p < .01$, *** $p < .001$.

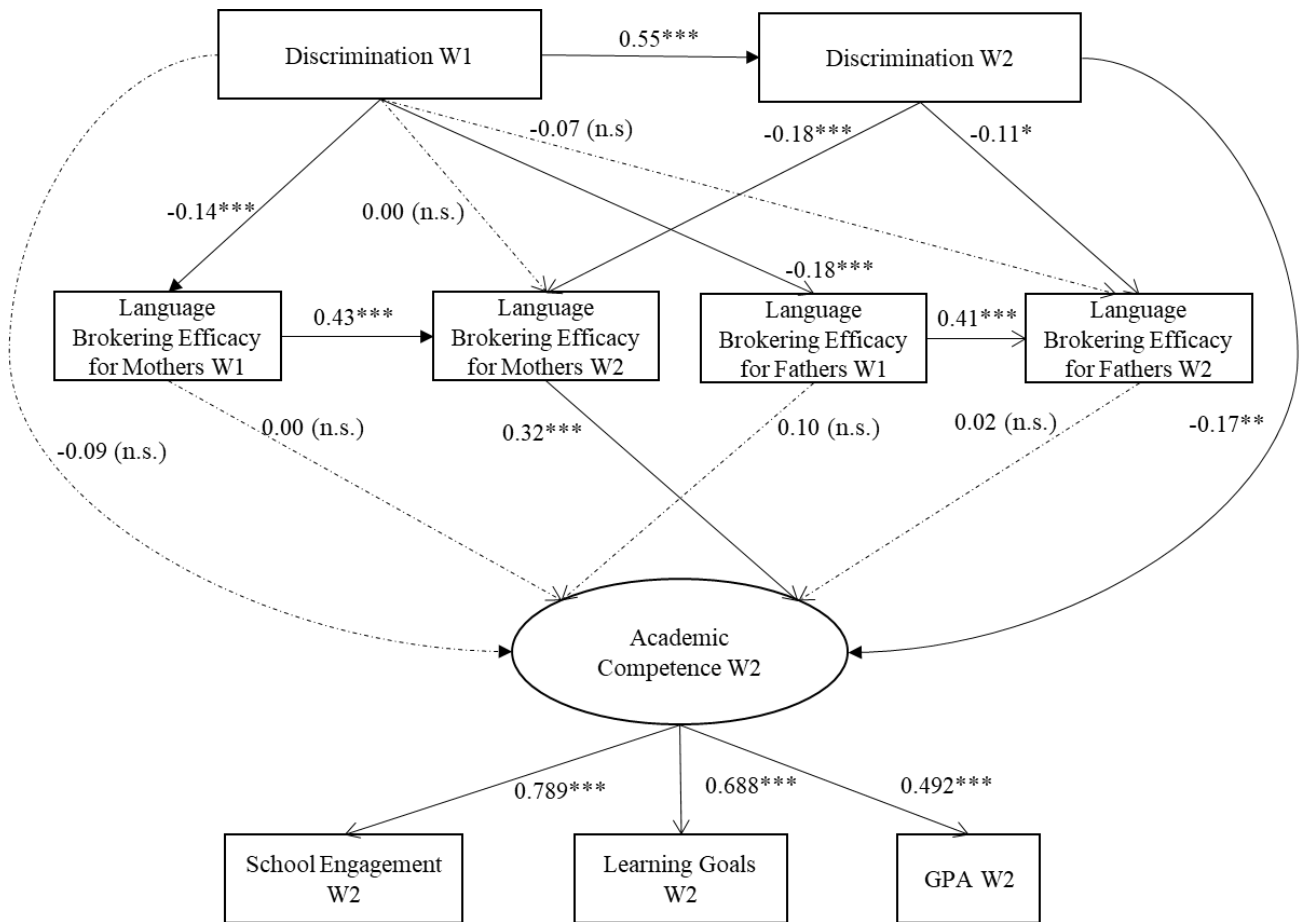


Figure 3. Mediation model without controlling for Wave 1 academic competence. W1 = Wave 1, W2 = Wave 2, n.s. = not significant. For simplicity, controlled variables were not presented in the figure. Significant paths are shown in solid line and non-significant paths are shown in dashed-line. * $p < .05$, ** $p < .01$, *** $p < .001$.

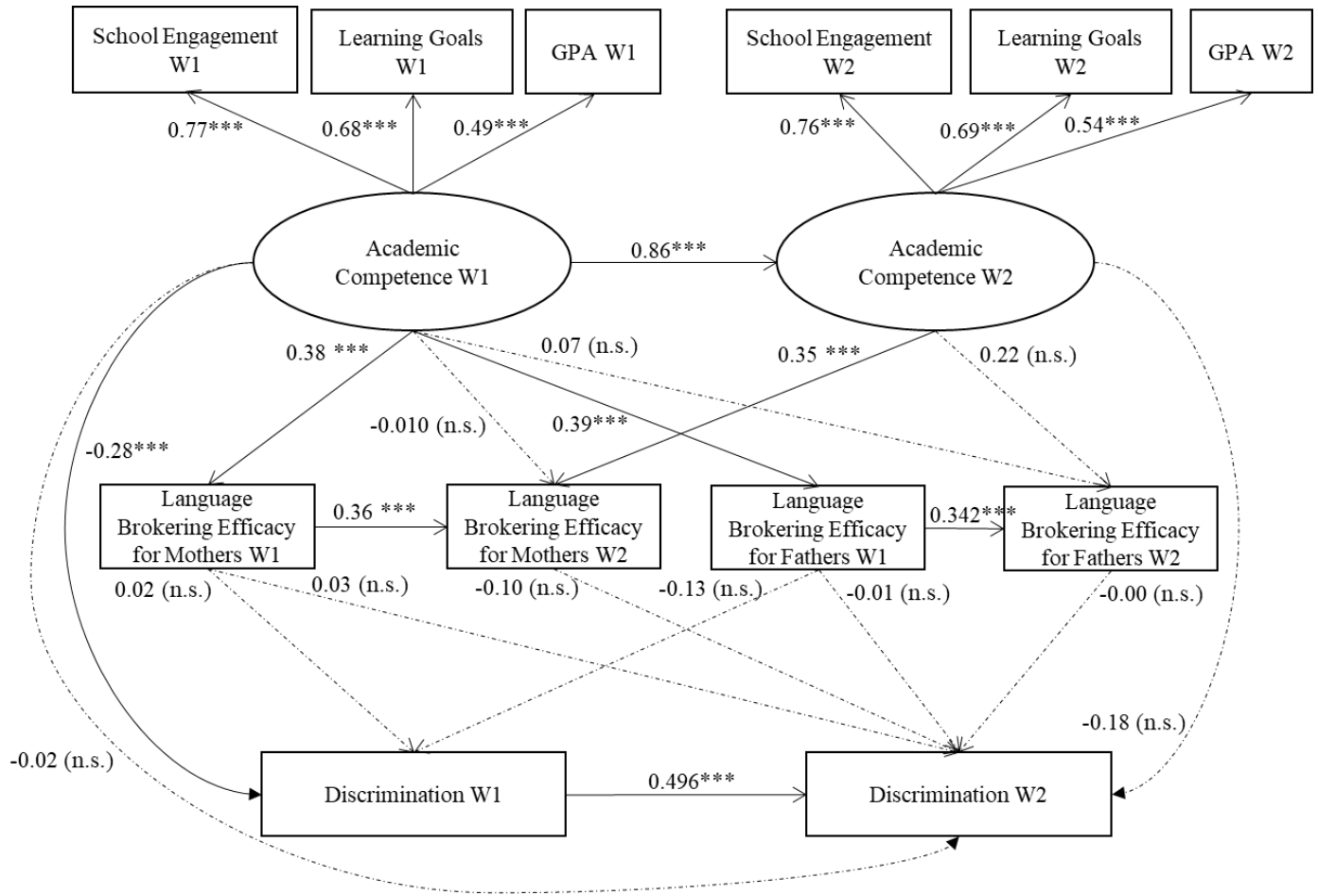


Figure 4. Alternative model that linking academic competence, language brokering efficacy, and discrimination. W1 = Wave 1, W2 = Wave 2, n.s. = not significant. For simplicity, controlled variables were not presented in the figure. Significant paths are shown in solid line and non-significant paths are shown in dashed-line. * $p < .05$, ** $p < .01$, *** $p < .001$.

Appendices

Appendix .1. List of items included in *Discrimination* measure.

On a daily basis, how often do each of the following happen to you?

1. I am treated with less courtesy (politeness) than other people
2. I am treated with less respect than other people
3. I receive poorer service than other people at restaurants or stores
4. People think I am not smart
5. People act like they are afraid of me
6. People act like I am dishonest
7. People act like they are better than I am
8. I am called names or insulted
9. I am threatened or harassed

Appendix 2. List of items included in *Language Brokering Efficacy* measure.

Please think about what it is like when you translate from English to Spanish for your mother/father. How much do you agree with the following statements?

1. I am good at translating for my mother/father
2. I am skilled at translating for my mother/father
3. I am effective (do what is expected) at translating for my mother/father
4. I translate correctly for my mother/father

Appendix 3. List of items included in *School Engagement* measure.

1. I am motivated to get good grades in school
2. I do better in school than my classmates
3. I can make good grades
4. I know how to study

Appendix 4. List of items included in *Learning Goals* measure.

1. I strive to constantly learn and improve in classes
2. In my classes I focus on developing my abilities and acquiring new ones

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