The co-development of shyness and acculturation: Findings from a longitudinal study of Mexican-origin youth

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Author Note

This research was supported by a grant from the National Institute on Drug Abuse and the National Institute on Alcohol Abuse and Alcoholism (DA017902) to Richard W. Robins. All materials, scripts, and output files for this project will be available on the Open Science Framework (OSF): https://osf.io/ft45r/?view_only=62b264550b274231bbeb1e333f2364c1.
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Abstract

Shyness, or inhibition when engaging with unfamiliar others in a social setting is a personality trait that leads to various negative life outcomes (Cheek & Buss, 1981). The present study examined the co-development of shyness and acculturation factors (i.e., English language proficiency, nativity) from age 10 to 16, using data from a large longitudinal study of Mexican-origin youth (N = 674). Using the EATQ-R shyness scale, I found high rank-order stabilities of shyness across two-year intervals, along with a mean-level decrease in shyness from age 10 to 16. Additionally, I found that higher levels of English language proficiency were associated with lower levels of shyness at age 10. Nativity (born in the U.S. versus Mexico) was not associated with the developmental trajectory of shyness from age 10 to 16. Thus, youth generally decline in shyness during adolescence, particularly those who are more proficient in English.

Keywords: shyness, acculturation, Mexican youth, development, adolescence

Word count: 144/150

Introduction

Shyness, or inhibition when engaging with unfamiliar others in a social setting, is a consequential personality trait, especially during adolescence (Cheek & Buss, 1981). Previous research has found that higher levels of shyness relate to numerous negative real-world outcomes, including increased risk for anxiety, mood, and substance-use disorders (Letcher et al., 2012; Tang et al., 2017), increased likelihood of experiencing peer rejection and victimization (Chen, 2010), and lower evaluations of one's own abilities accompanied by lower subjective well-being (Liu et al., 2018). Given the relevance of these relational and mental health outcomes, shyness may be particularly important during adolescences. Additionally, previous research has found that shyness during late childhood and adolescence serves as a predictor of poorer social skills and higher levels of depression (Karevold et al., 2012).

Furthermore, acculturation, or the extent to which individuals maintain their culture of origin or adapt to new cultural norms, appears to impact the development of shyness (Xu & Krieg, 2014). For instance, less acculturated individuals seem to experience higher levels of anxiety, antisocial behavior, and depression—mental health symptoms related to shyness (Lawton & Gerdes, 2014; Polo & Lopez, 2010). Considering its developmental relevance and relation to life outcomes, it is important to understand how acculturation factors such as English language proficiency and nativity (i.e., country of birth) contribute to the development of shyness and, conversely, how acculturation may be impacted by shyness. However, no work has examined how changes over time in both shyness and acculturation relate to each other. To begin to fill this gap, the present study will examine the co-development of shyness and acculturation from ages 10 to 16, using data from a longitudinal study of 674 Mexican-origin youth.

Development of Shyness during Adolescence

Previous findings on mean-level changes in shyness across adolescence show discrepant patterns. A few studies indicate that shyness increases, on average, across childhood and adolescence (Karevold et al., 2012; Strickhouser & Sutin, 2020). Whereas some studies have found mean-level decreases in shyness across this period (Barzeva et al., 2018; Laceulle et al., 2012; Zohar et al., 2018). However, other studies have reported no evidence of mean-level change (Brandes et al., 2020). These inconsistencies may be due, in part, to differences in reporting methods, as some studies used self-reports of shyness (e.g., Zohar et al., 2018) and others used parent-reports (Brandes et al., 2020; Laceulle et al., 2012). Although empirical evidence is mixed, theoretical considerations suggest that shyness should increase during the adolescent years, given the dramatic increases in both self-awareness and self-consciousness (Poole et al., 2020).

Shyness and Acculturation

Past empirical evidence indicates that culture influences the developmental trajectory of shyness within individuals (Gudino & Lau, 2010). For example, collectivist cultures such as Latinx and Asian cultures tend to view shy behavior as normative because these cultures promote humility, submissiveness, and obedience (Gudino & Lau, 2010; Aizawa & Whatley, 2006). However, in most individualistic societies like the United States, shy children are viewed as less socially competent and are more likely to report being shy than those from individualistic cultures (Aizawa & Whatley, 2006; Chen, 2010; Chen, 2019). As a result of these cultural beliefs, children from collectivistic cultures living in the United States tend to experience peer exclusion, rejection, and insufficient social support (Chen, 2019). Given culture impact on shyness, examining how acculturation relates to shyness is the next logical step.

Past studies examining acculturation have found that parents who restricted their children from acculturating to American norms placed youth at higher risk for developing maladaptive behaviors (Lau et al., 2005). Similarly, Latino immigrant parents with lower levels of acculturation tended to have children who reported higher levels of shyness and anxiety towards peers and adults (Gudino & Lau 2010). In another study, it was discovered that the lower levels of parental acculturation influenced their children's level of shyness (Xu & Krieg., 2014). Based on these findings, it seems that difference in acculturation levels contribute to how shyness develops among children living in Western societies. Therefore, English language proficiency and nativity are two factors that seem particularly relevant in understanding the development of shyness across adolescence.

English Language Proficiency

English language proficiency describes one's ability to communicate fluently and efficiently with others. Previous studies have found that adolescents with less English proficiency typically have higher levels of shyness, depression, and lower self-confidence (Lee & Chen, 2000; Ren, 2015). Research has also indicated that shy immigrant children have lower language acquisition and proficiency skills compared to non-shy immigrant children (Keller et al., 2013). Additionally, Polo & Lopez's (2010) study discovered that immigrant Mexican American youth with higher levels of acculturative stress and lower English proficiency skills had higher levels of shyness. One explanation for these findings is that shy children often miss out on potential social interactions, where a new language can be practiced (Keller et al., 2013). Based on existing research, one can infer that English language proficiency and shyness are concurrently related, but it is unclear whether there are longitudinal associations (i.e., associations over time).

Nativity

In studies of acculturation, nativity refers to whether a person is native or foreign born. To date only a few studies have examined the association between nativity and shyness. For example, Polo & Lopez (2010) reported that 1st generation Mexican immigrant youth experienced higher levels of shyness, acculturative stress, internalizing problems, and loneliness than U.S. born Mexican youth. Similar studies have discovered that Chinese immigrants, compared to their native-born counterparts, reported higher levels of anxiety, depression, social stress, and lower levels of sociability (Chen & Tse, 2008; Ren, 2015; Zhou et al., 2003). Despite the limited number of studies examining the association between these two factors, extant research indicates that nativity may relate to the development of shyness.

Overall, there are theoretical and empirical reasons to believe that acculturation and shyness may co-develop across adolescence (i.e., that changes in acculturation may be associated with changes in shyness). Presently, few studies have examined how acculturation factors, such as English language proficiency and nativity, are related with the development of shyness in Mexican-origin youth across adolescence.

The Present Study

In this study, I examined the co-development of shyness and acculturation from age 10 to 16, using data from a large, longitudinal study of Mexican-origin youth (N = 674). In particular, I tested two hypotheses. First, I predicted that native- and foreign-born youth with lower English language proficiency would have higher initial levels of shyness at age 10. Second, I predicted that youth who increase more in English language proficiency across adolescence would show greater decreases in shyness during this period**.**

The present study extends past research in several ways. First, I used four waves of longitudinal data spanning six years from late-childhood to mid-adolescence. This in turn allowed me to test for different patterns of mean-level change in shyness (i.e., no growth, linear growth, non-linear growth). Moreover, this study builds upon previous longitudinal work that has used only two time-points (e.g., Laceulle et al., 2012). Thus, providing a more comprehensive, fine-grained depiction of the development of shyness during adolescence. Second, I used a multi-informant approach with both self- and parent-reports of shyness, which reduced the likelihood that findings are based on shared method variance. Third, this study was the first to examine the co-development of shyness and acculturation across late-childhood (age 10) to mid-adolescence (age 16). Lastly, I examined the differences in shyness due to acculturation factors in a historically understudied ethnic minority group – Mexican-origin youth. Therefore, the empirical evidence that my study discovered and produced, extends past the limited previous cross-sectional research examining shyness and acculturation.

Methods

Participants

This study used data from the California Families Project, a longitudinal study of Mexican-origin youth and their parents ($N = 674$). Children were drawn at random from rosters of students from the Sacramento and Woodland, CA school districts. The focal child had to be in the 5th grade, of Mexican origin, and living with his or her biological mother in order to participate in the study. Approximately 72.6% of the eligible families agreed to participate in the California Families Project, which was granted approval by the [BLINDED] Institutional Review Board (Protocol # BLINDED). The children (50% female) were assessed annually from 5th grade to three years post-high school. The present study used data from Waves 1, 3, 5, and 7 when the

children were in 5th grade (M_{age} = 10.86, SD = 0.50) to 11th grade (M_{age} = 16.80, SD = 0.51). Retention rates compared to the original sample are as follows: 86% (Wave 3), 90% (Wave 5), and 89% (Wave 7).

Participants were interviewed in their homes in Spanish or English, depending on their preference. Interviewers were all bilingual and most were of Mexican heritage. Sixty-three percent of mothers and 65% of fathers had less than a high school education (median = 9th grade for both mothers and fathers); median total household income was between $30,000 and $35,000 (overall range of income = < $5,000 to > $95,000). With regards to generational status, 83.6% of mothers and 89.4% of fathers were 1st generation. One hundred and twenty-four of the families were single-parent households (mothers only), and 549 of the families were two-parent households. In the present study, I used data for all available participants (i.e., no exclusions were be applied), and I report all analyses conducted to address my research question.

Measures

Shyness. Shyness was measured via self-reports and mother-reports when the youth were 10, 12, 14, and 16 years old using four items from the *Early Adolescent Temperament Questionnaire – Revised* (EATQ-R; Ellis & Rothbart, 2001). The shyness items are: "You [your child] feel[s] shy with kids of the opposite sex", "You [your child] feel[s] shy about meeting new people", "You [your child] are [is] shy", and "You [your child] are [is] not shy" (reverse-scored). Ratings were made on a 4-point scale ranging from 1 (*not at all true of you/your child*) to 4 (*very true of you/your child*). I computed latent variables using parcels of both self- and mother-reports of shyness. To create these latent variables, I used three parcels as indicators because parcels produce more reliable latent variables than individual items (Little et al., 2002).

Language proficiency. Participants completed the 20-item *Hazuda Acculturation and Assimilation Scale* (HAAS; Hazuda et al., 1988). This measure is based on a theoretical model that views acculturation as a multi-dimensional process involving language, cultural beliefs, and values, and "structural assimilation" (the integration of minority group members into the social structure of the majority group). For the present study, I used all three items related to English language proficiency (e.g., “How well do you understand spoken English?”, “How well do you speak English?”, “How well do you read English?”). For these items, response options ranged from 1 (*Not at all*) to 4 (*Very well*). I created a composite measure of English proficiency based on the mean of the three English language items.

Nativity. I created a dichotomous nativity variable comparing youth born in Mexico (29%) to youth born in the U.S. (71%).

Statistical Analyses

All data cleaning and analyses were conducted in R (R Core Team, 2019) via RStudio Version 1.2.1335 using robust maximum likelihood estimation (MLR) and full information maximum likelihood (FIML) to address missing data (Allison, 2003; Schafer & Graham, 2002). The alpha level was set to .05 (two-tailed). As noted above, I computed latent variables using parcels that included self- and mother-reports of shyness. Parcels based on the same items were correlated across waves.

Model fit was assessed via comparative fit index (CFI) and root-mean-square error of approximation (RMSEA). I interpreted good fit as values greater than or equal to .95 for CFI and less than or equal to .06 for RMSEA (Hu & Bentler, 1999). I assessed differences in model fit via changes in CFI less than or equal to .01 and changes in chi-square and degrees of freedom (Cheung & Rensvold, 2002; Meade et al., 2006).

Measurement Invariance. I examined evidence for longitudinal measurement invariance of shyness. In particular, I compared four measurement models: (a) freely estimating the factor loadings for the latent factors at each age of assessment (i.e., configural invariance); (b) constraining the respective factor loadings to be equal at each of assessment (i.e., weak invariance); (c) constraining the factor loadings and intercepts to be equal at each age of assessment (i.e., strong invariance); and (d) constraining the factor loadings, intercepts, and residual variances to be equal at each age of assessment (i.e., strict invariance). The measurement invariance analyses did not provide evidence of strong measurement invariance for shyness (see Table 1), but they did provide evidence of partial strong measurement invariance, so I retained this model for all subsequent analyses.

Table 1
Longitudinal Measurement Invariance of Shyness Measure

	χ^2 (df)	CFI	RMSEA [90%CI]
Configural	18.55(30)	1.00	.00 [.00, .00]
Weak	24.38(36)	1.00	.00 [.00, .01]
Partial Strong	177.87(42)	0.96	.07 [.06, .08]
Strong	307.96(45)	0.93	.09 [.08, .10]
Strict	425.80 (55)	0.90	.10 [.09, .11]

Note. χ^2 = Chi-square test statistic; df = degrees of freedom; CFI = comparative fit index; RMSEA = root-mean-square error of approximation; 90%CI = 90% confidence interval.
* $p < .05$

Univariate Latent Growth Curve Models. To examine mean-level change in the shyness and English language proficiency from age 10 to 16, I ran univariate latent growth curve (LGC) models with four timepoints (ages 10, 12, 14, and 16). To guide my selection of a growth trajectory, I conducted a series of LGC model comparisons and evaluate changes in fit indices. Specifically, I compared three models: (1) no growth model, where the slope is fixed to be zero at all assessments; (2) linear growth model, where the slope increases linearly over time; and (3) a latent basis model, where the first and last time points of the slopes are fixed to zero and five,

respectively, and the middle time points are freely estimated in order to detect nonlinear growth. I considered model fit, as well as parsimony, when selecting a LGC model for each variable.

Bivariate Latent Growth Curve Models. To examine the co-development of shyness and English language proficiency, I conducted bivariate LGC models. In particular, using the retained univariate LGC models for shyness and English proficiency, I specified bivariate LGC models by including correlations among the levels, slopes, and level-to-slopes of the shyness and English proficiency trajectories.

Multiple Group Models. To examine whether the shyness trajectory differed for youth born in the U.S. versus Mexico, I ran multiple group models and compare models that constrain the level and slope of shyness to be equal across groups to models that allow the levels and slopes to be freely estimated across groups. If the constrained model did not fit significantly worse than the freely estimated model, then I concluded that the trajectory of shyness was the same across youth born in the U.S. and youth born in Mexico.

Results

Descriptive statistics (mean, standard deviation, alpha, and omega reliability) for the child-mom composite of shyness are shown in Table 2 and descriptive statistics for English proficiency is shown in Table 3. The reliabilities of child self-reported shyness are lowest at age 10 and highest at age 16, which is consistent with previous research showing that shyness has lower reliability in younger children compared to older adolescents (e.g., Göllner et al., 2017).

Table 2
Descriptive Statistics for Shyness

Shyness	Mean	SD	α	*N*
Child-mom composite				
Age 10	2.44	0.58	.67	672
Age 12	2.23	0.57	.71	579
Age 14	2.14	0.57	.75	609

Age 16	2.06	0.54	.75	607

Table 3
Descriptive Statistics for English *Language Proficiency*

English Language Proficiency	Mean	SD	α	*N*
Age 10	3.35	0.51	.65	668
Age 12	3.6	0.47	.79	576
Age 14	3.72	0.4	.81	605
Age 16	3.76	0.41	.86	600

Development of Shyness

To examine the developmental trajectory of shyness across adolescence, I compared three developmental models of shyness – no growth, linear growth, and latent basis. I found that the linear growth model fit best (Table 4) given its goodness of fit and parsimonious representation of the data. This model suggests that, on average, shyness decreased linearly from age 10 to 16 and there were significant individual differences in both the level and slope of shyness (Figure 1).

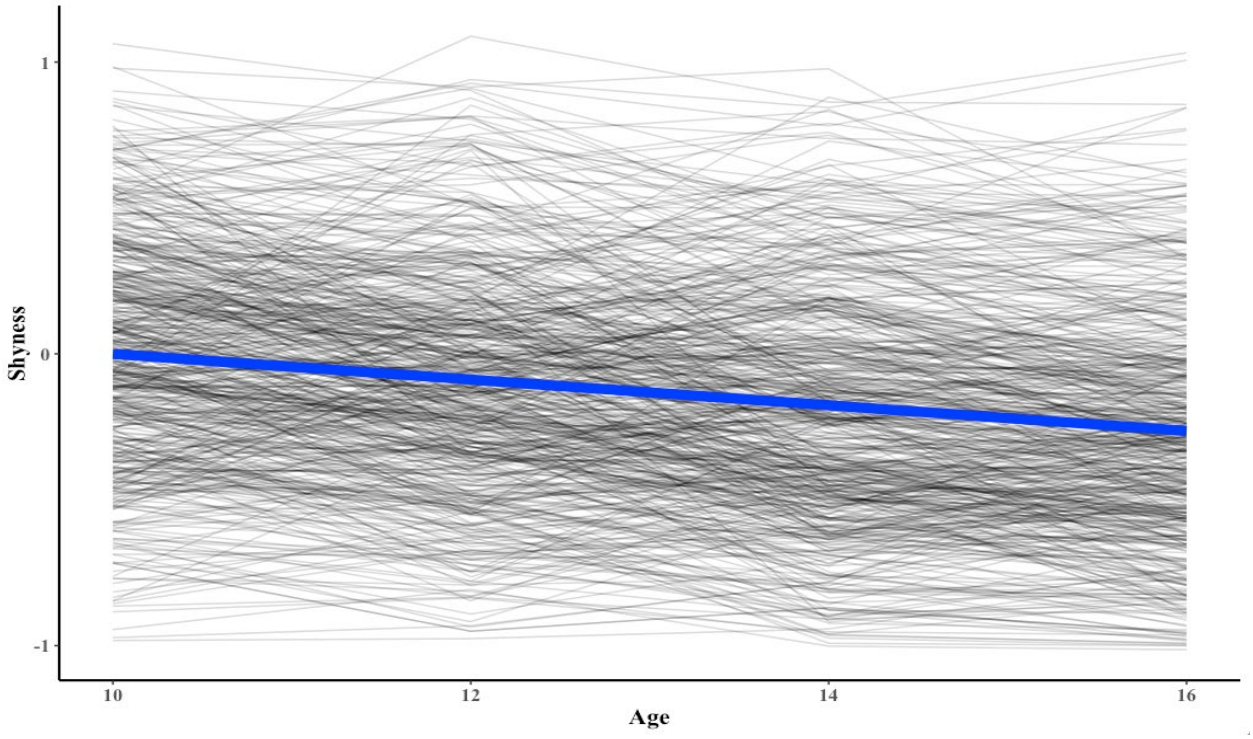
Table 4
Model Statistics for Best-Fitting Second-Order LGC Models for Shyness

	No Growth	**Linear Growth**	Latent Basis
Slope			
β_1	0	**0**	0
β_2	0	**2**	2.42
β_3	0	**4**	4.94
β_4	0	**6**	6
Means			
Level	.00	**.00**	.00
Slope	-	**-.04***	-.04*
Variances			
Level	.12*	**.14***	.15*
Slope	-	**.004***	.003*
Covariance $_{\text{Level, Slope}}$	-	**-.01***	-.01*
Goodness-of-Fit			

χ^2 (df)	268.26 (47)	**48.99 (44)**	39.46 (42)
RMSEA [90% CI]	.09 [.08, .10]	**.01 [.00, .03]**	.00 [.00, .02]
CFI	.93	**1.00**	1.00
Fit changes, $\Delta\chi^2/\Delta df$	-	**220.13/3**	8.75/2

Note. Values are unstandardized coefficients for the models. χ^2 = Chi-square. df=degrees of freedom. RMSEA=Root-mean-square-error of approximation. CI=90% confidence interval. CFI=Comparative fit index.
* $p < .05$

Figure 1



Development of English Language Proficiency

To examine the developmental trajectory of English proficiency across adolescence, I compared three developmental models of English language proficiency – no growth, linear growth, and latent basis. I found that the latent basis model fit best due it's goodness of fit indices (i.e., highest CFI and lowest RMSEA; Table 5). This model suggests that, on average, English proficiency increased from age 10 to 16, with greater increases from age 10 to 14

compared to age 14 to 16. In addition, there were significant individual differences in the level of English proficiency but no significant individual differences in the slope.

Table 5
Model Statistics for Best-Fitting LGC Models for English Language Proficiency

	No Growth	Linear Growth	**Latent Basis**
Slope			
β_1	0	0	**0**
β_2	0	2	**3.62**
β_3	0	4	**5.31**
β_4	0	6	**6**
Means			
Level	3.66*	3.42*	**3.35***
Slope	-	.06*	**.07***
Variances			
Level	.09*	.09*	**.09***
Slope	-	.00	**.00**
Covariance $_{\text{Level, Slope}}$	-	-.00	**-.00**
Goodness-of-Fit			
χ^2 (df)	385.91 (8)	60.78 (5)	**8.04 (3)**
RMSEA [90% CI]	.27 [,]	.13 [.10, .16]	**.05 [.01, .09]**
CFI	.30	.90	**.99**
Fit changes, $\Delta\chi^2/\Delta$df	-	325.12/3	**52.36/2**

Note. Values are unstandardized coefficients for the models. χ^2 = Chi-square. df=degrees of freedom. RMSEA=Root-mean-square-error of approximation. CI=90% confidence interval. CFI=Comparative fit index.
* $p < .05$

Shyness and Acculturation

Table 6 shows correlations among all study variables. I found significant positive correlations for shyness scores from age 10 to 16 (*r*'s range from .53 - .69). Therefore, suggesting moderate to high rank order stability of shyness between ages 10 to 16. Next, I found a significantly positive correlation for levels of English proficiency between ages 10 to 16 (*r*'s range from .38 - .51). Thus, revealing a moderate rank order stability of English proficiency from ages 10 to 16.

However, I did not find significant correlations between shyness scores and English language proficiency levels from ages 10 to 14. This indicates that there is no relationship between shyness and English proficiency within this time period. Although, I did find a significant negative correlation between shyness and English proficiency at age 16, which suggests that individuals who had higher levels of shyness at age 16 also had lower levels of English proficiency at age 16.

Table 6

Correlations among Study Variables

	1.	2.	3.	4.	5.	6.	7.
1. Shyness (age 10)	-	-	-	-	-	-	-
2. Shyness (age 12)	.53*	-	-	-	-	-	-
3. Shyness (age 14)	.42*	.55*	-	-	-	-	-
4. Shyness (age 16)	.39*	.53*	.69*	-	-	-	-
5. English proficiency (age 10)	-.06	-.01	-.07	.02	-	-	-
6. English proficiency (age 12)	-.06	-.03	-.02	-.04	.38*	-	-
7. English proficiency (age 14)	-.05	-.01	-.04	-.06	.40*	.53*	-
8. English proficiency (age 16)	-.08	-.03	-.06	-.11*	.38*	.43*	.51*

* $p < .05$

Moreover, I examined whether shyness and English language proficiency co-develop from age 10 to 16 using a bivariate LGC model (see Table 7). I discovered a negative correlation between the slope of shyness from age 10 to 16 and the slope of English language proficiency from age 10 to 16 (B = -.55, p = .016). Suggesting that Mexican youth who decrease more in shyness from age 10 to 16 tend to increase more in English proficiency across this same period. However, I found no significant correlation between initial levels of shyness and initial levels of English language proficiency (B = -.10, p = .197), indicating that there is no relation at age 10. Results also revealed that initial levels of English language proficiency do not influence the developmental trajectory of shyness from age 10 to 16 (B =.15, p = .094). Similarly, initial levels of shyness seem to not influence the developmental trajectory of English language proficiency from age 10 to 16 (B = .13, p = .531).

Table 7
Results of Bivariate LGC Model for Shyness and English Proficiency

	Shyness Level	Shyness Slope
English proficiency level	-.10	.15
English proficiency slope	.13	-.55*

Note. Values are unstandardized regression coefficients. * $p < .05$

Finally, I discovered that nativity made no significant difference in how shyness develops between age 10 to 16 (see Table 8). Due to similarities between the model fit with parameters constrained across nativity groups and the model where parameters were free across these groups. Therefore, my results suggest that youth born in the U.S. and youth born in Mexico follow similar developmental trajectories of shyness.

Table 8
Model Fit Indices for Multiple Group Model

	χ^2 (df)	CFI	RMSEA
Nativity (born in U.S. vs. Mexico)			
Parameters free	124.23(92)	.99	.03[.02, .05]
Parameters constrained	133.70(96)	.99	.03[.02, .05]

Note. χ^2 = Chi-square test statistic; df = degrees of freedom; CFI = comparative fit index; RMSEA = root-mean-square error of approximation; 90%CI = 90% confidence interval. Parameters that varied between models are means and variances of the level and slope.

Discussion

The present study examined the co-development of shyness and acculturation from late-childhood through mid-adolescence in a sample of 674 Mexican-origin youth.

Development of Shyness

Despite the mixed empirical evidence regarding the developmental trajectory of shyness, my study revealed that, on average, shyness decreases linearly from age 10 to 16 with significant individual differences. This result contradicts existing research and theory on adolescence that highlights increases in self-consciousness and heightened sensitivity to peer evaluation, both of which seem likely to increase shyness (Cheek et al., 1986; Hassan et al., 2021). Furthermore,

these results are also inconsistent with previous studies that found shyness increases across childhood and adolescence (Karevold et al., 2012; Strickhouser & Sutin, 2020). However, the observed decrease in shyness is consistent with some studies that reported a decrease in shyness during this period (Barzeva et al., 2019; Laceulle et al., 2012; Zohar et al., 2018). The decline in shyness may result from a normative increase in motivation to interact with peers and potential romantic partners during adolescence (Andrews et al., 2021). Due to the major discrepancies between results, future studies should adopt a more holistic approach when examining shyness in order to better understand its development through late-childhood and mid-adolescences.

Development of English Language Proficiency

I discovered that, on average, English language proficiency increased from age 10 to 16. It makes logical sense that youth living in the United States would demonstrate an increase in English proficiency across time due to the gained experience of speaking English. Despite not exploring other factors that impact English proficiency, lower socioeconomic status, socioemotional skills, and school readiness seem to be significant predictors of language proficiency (Kim et al., 2014). Therefore, these predictors can provide a possible explanation as to why there were significant individuals differences in the level of English proficiency within my results.

Co-development of Shyness and Acculturation

Contrary to my first hypothesis, I did not find that youth with lower English language proficiency at age 10 had higher levels of shyness at age 10. This finding is not consistent with prior research on language proficiency and shyness in younger children and adolescents (Polo & Lopez, 2010; Lee & Chen, 2000; Ren, 2015). However, I did find a significant relation between shyness and English proficiency at age 16. This finding may emerge because, at age 16, the lack

of English proficiency prevents youth from engaging with peers in social settings, thus potentially increasing the shyness levels of individuals (Keller et al., 2013) Notably, I did not find that the average trajectory of shyness differed for youth born in the U.S. versus Mexico. The lack of a nativity effect is consistent with prior research examining shyness in a sample of Chinese-Canadian adolescents (Chen & Tse, 2010). Although this finding does contradict previous studies, which found that nativity impacted the developmental trajectory of shyness (Chen & Tse, 2008; Ren, 2015; Zhou et al., 2003). Further research is needed to better understand the conditions under which nativity influences the development of shyness across childhood and adolescence.

Consistent with my second hypothesis and previous research (Chen & Tse, 2010; Strand et al., 2011), I found that youth with greater increases in English proficiency tended to have greater decreases in shyness from age 10 to 16. One's ability to proficiently speak the dominant language of a country (in this case, English) seems likely to facilitate smoother and less stressful social interactions, contributing to lower levels of shyness. Future studies should investigate if having bilingual peers (i.e., English, and Spanish speakers) helps youth to overcome the language barrier, therefore potentially increasing English proficiency and decreasing shyness levels.

Limitations and Conclusion

The present study has several limitations. First, my shyness measure only included four items and asked broadly about shyness (e.g., "I am shy") rather than specific behaviors (e.g., social awkwardness, difficulty talking to strangers; Cheek & Buss, 1981). Second, my focus on Mexican-origin adolescents limits the generalizability of these results to other demographic groups. Third, although I found that the slope of English proficiency was associated with the

slope of shyness, the passive longitudinal design precludes causal inference because I cannot rule out the possibility of third-variable confounds or reciprocal causation. Despite these limitations, this study is novel and informative in revealing a decline in shyness across adolescence among Mexican-origin youth. The use of longitudinal data in my study extends past the very limited previous cross-sectional research examining shyness and acculturation. By providing a better understanding of how these two factors develop in relation to each other over time.

In conclusion, my findings suggest that shyness and one aspect of acculturation (i.e., English language proficiency) co-develop from age 10 to 16. Notably, this study advances the Latinx representation within psychology research by providing data that can be used to develop comprehensive culturally-tailored interventions to help Mexican-origin youth reduce their shyness. Future studies should explore how other acculturation factors influence the shyness development of Latinx youth during childhood and adolescence, including how these factors may predict important life outcomes.

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