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MAKING THE GRADE: ACADEMIC ACHIEVEMENT AMONG LATINO

ADOLESCENTS

by

CATHY ROCHE

Under the Direction of Gabriel Kuperminc

ABSTRACT

Academic achievement among Latino adolescents was examined to determine what contextual factors contribute to school success. ANCOVA analyses indicated that lower levels of perceived discrimination and a higher sense of school belonging were associated with better grades. Neighborhood social capital was not associated with school grades. More adaptation stress was associated with lower grades for US-reared students, but it was not associated with grades for more recent Latino immigrants. The findings suggest that discrimination, school belonging, and adaptation stress play an important role in academic achievement among Latino youth. They also suggest that immigrants may be more academically resilient than their second generation peers in the face of adaptation stress.

INDEX WORDS: Latino, Immigration, Achievement, School, Hispanic, School belonging, Acculturative stress, Discrimination, Neighborhood, Adolescent

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ADOLESCENTS

by

CATHY ROCHE

A Thesis Submitted in Partial Fulfillment of Requirements for the Degree of

Master of Arts

in the College of Arts and Sciences

Georgia State University

2005

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Catherine Ann Roche
2005

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Introduction

Latinos, defined as individuals whose families immigrated from Latin America, are currently the largest ethnic minority group in the United States. As of 2002, there were 38.8 million Hispanics in the US (United States Census Bureau, 2003). School failure is a major problem for Latino students in the US, although there is substantial variability across specific subgroups such as Mexican American immigrants and Central American refugees (Matute-Bianchi, 1991; Suárez-Orozco, 1991). Latino students have higher high school drop out rates and lower achievement scores than the national averages (National Center for Education Statistics, 2004). In 2002, 26% of Hispanic youth ages 16-24 had dropped out of high school, compared to 11% of all people in the US in the same age group (National Center for Education Statistics, 2005). Given the growing number of Latino families in the United States, the academic achievement of Latino youth is a critical topic that should be addressed by research.

The popular media have sometimes explained this education gap between Latinos and other US students by suggesting that Latino culture does not promote academic achievement (Reeves, 2003). Researchers, however, have offered other explanations that focus on factors related to discrimination and economic disadvantage. These factors include students' exposure to supportive adults and educated professionals in their neighborhoods and their sense of belonging in school settings (Matute-Bianchi, 1991; Suárez-Orozco, 1991; Ibañez, Kuperminc, Jurkovic, & Perilla, 2004).

Researchers have also compared immigrant Latino students with US-born Latino students and found in cross-sectional studies that immigrant Latinos perform better in school than US-born Latinos (Matute-Bianchi, 1991; Suárez-Orozco, 1991). Portes and Rumbaut (2001) studied a large sample of adolescents who either immigrated to the US at various ages or who were born in the US to immigrant parents. They found that perceived importance of grades and the amount of time spent on homework declined steadily with students' length of

residency in the US. They also found that compared to immigrant youth, second-generation children reported placing lower importance on school grades. Suárez-Orozco (2000) found a similar pattern of decline in academic achievement for immigrant youth in a 5-year longitudinal study. Some researchers have interpreted this difference in academic achievement by suggesting that immigrant Latino youth may maintain a keener focus on academics than US-born Latino youth because of a sense of hopefulness that their academic success will create opportunities for them in the future (Suárez-Orozco, 1991; Kao & Tienda, 1998). If this is the case, risk exposure in youths' current American environments would be expected to have a stronger relation to academic achievement for Latino youth who have lived in the US most or all of their lives than for more recent immigrant youth.

In one demonstration that adolescents who immigrated recently may have higher academic achievement than those who immigrated earlier or were born in the US, Portes and Rumbaut (2001) compared the importance students place on school grades among high school students who had immigrated at different ages or who were born in the US to immigrant parents. They divided students into four groups: those who arrived in the US in mid-childhood to adolescence, those who arrived in the US in early childhood, those who arrived in infancy, and those who were born in the US. They found a clear pattern that longer student residency in the US predicted lower academic achievement drive.

Following past research (e.g., Portes & Rumbaut, 2001; Suarez-Orozco, 1991) that has compared groups of Latino youth differing in length of residence in the US, the present study examined whether immigration age moderates the association of neighborhood social capital, sense of school belonging, and experiences of discrimination and acculturative stress with adolescent achievement. In general, it was expected that associations of these contextual factors with academic achievement would be strongest for Latinos who have resided in the US for more time.

Neighborhood Social Capital

Characteristics of the neighborhoods in which adolescents live may contribute to their academic behaviors. Stevenson (1998) argued that adolescents' perceptions of their neighborhoods can shape academic behaviors through observations of role models and through social support. Social capital has been defined as "the sum total of positive relationships including families and neighbors that serve as buffers to the negative influences within one's immediate environment" (Stevenson, 1998, p. 48). Research on the role of neighborhood social capital among Latino children is sparse. However, research with other at-risk populations indicate that children have more positive social and cognitive outcomes when they live in neighborhoods with high social capital, while a lack of positive role models in the neighborhood may lead to negative school outcomes. Specifically, African American adolescents who live in neighborhoods with high levels of social capital exhibit lower levels of criminal behavior, depressive symptoms, and cognitive difficulties (Stevenson, 1998).

There is also emerging evidence specifically addressing the role of neighborhood social capital in academic achievement. Brooks-Gunn, Duncan, Klebanov, & Sealand (1993) hypothesized that residing in an impoverished neighborhood may not be detrimental to adolescents until there is pervasive poverty; for example, when fewer than 5% of residents have professional or managerial jobs. They conducted a longitudinal study with a large sample of African American and Caucasian teenagers and found that living in a neighborhood with very few professional workers was indeed associated with higher rates of early school leaving and teenage out-of-wedlock births.

Using a large, nationally representative sample of high school students, Ainsworth (2002) found that the presence of neighborhood adults with professional jobs positively predicted student test scores and amount of time spent on homework. He also found that

students' neighborhood status (advantaged or disadvantaged) predicted academic achievement.

Ainsworth (2002) explained that whereas neighborhoods with high social capital may be quite beneficial to youth, neighborhoods with low social capital may be detrimental because they expose young people to a narrow range of social interactions that are not conducive to academic and career achievement. Just as a lack of Latino role models in the schools may contribute to Latino youth's diminished expectations for academic success (Aviles, Guerrero, Howarth, & Glenn, 1999), a lack of positive role models in the neighborhood may also decrease children's academic motivation because they have no evidence that school achievement is useful.

In sum, research supports the role of neighborhood resources in affecting young people's academic achievement. With specific reference to Latino/a youth from immigrant families, it was expected that living in neighborhoods perceived as lacking in social capital would be most strongly linked to poor academic achievement for longtime US residents than for recent immigrants. The link may be weaker for recent immigrants because they may maintain more hope for future success.

School Belonging

In addition to neighborhood social capital, students' perceptions of the social and academic climate of their schools have been found to be related to academic achievement and social adjustment in both cross-sectional and longitudinal studies (Kuperminc, Leadbeater, Emmons, & Blatt, 1997; Kuperminc, Leadbeater, & Blatt, 2001; Roeser & Eccles, 1998). One aspect of school climate that is emerging as an important area of study is students' sense of belonging to their school. Goodenow (1993) defined sense of school belonging as the extent to which a student feels that he or she is an important member of the school.

Like neighborhood social capital, students' interpretations of school belonging may differ depending on age of immigration. Longtime US residents may perceive their lack of

school belonging as a sign that they cannot or will not succeed in school. More recently immigrated Latino youth, on the other hand, may not see themselves as marginalized, or may perceive their marginalization as a temporary challenge to be overcome (Matute-Bianchi, 1991).

According to Goodenow (1993), a sense of school belonging is an important contributor to academic achievement because it may engage students in their studies thereby decreasing the likelihood of dropping out of school. She describes the mechanism of the effect of school belonging on achievement as a process in which students establish a social bond with adults and other students in their school and therefore feel less isolated in the context of the dominant culture. Students who feel attached to adults and students who are invested in the school may then become more committed to the school's goals. This commitment may result from students' increased expectations of success, an increase in their social resources, or an increase in their ability to focus on their schoolwork. After students establish their social roles in the schools, they have more time and energy to devote to academic success.

Solomon, Battistich, Watson, Schaps, & Lewis (2000) also found evidence supporting the idea that children are more academically engaged when they perceive their school as a caring community in which their learning is supported. These researchers implemented a program in several schools called the Child Development Project, which was designed to create supportive relationships among students and teachers, opportunities for students to make school-related decisions, and opportunities for student success in academic and interpersonal activities. They used a multiethnic sample of students in elementary school and found that students benefit from the Child Development Project by enjoying an increased sense of the school as a community as well as increased academic motivation.

There is a growing body of evidence that Latino students' sense of belonging to school is related to positive academic outcomes. Goodenow (1993) studied sense of school

belonging in two multiethnic samples of urban junior high school students which included a significant minority of Latino students. She found that sense of school belonging was strongly related to self-reported school motivation and moderately related to grades. Sense of school belonging has also been found to be related to perceived academic competence and to higher academic expectations and aspirations for Latino high school students in a southeastern city (Ibañez, Kuperminc, Jurkovic, & Perilla, 2004).

A qualitative study of Latino youth who had dropped out of school cited lack of school belonging as an influential factor contributing to their decision to stop school (Aviles et al., 1999). The youth in Aviles' study also reported difficulty participating in school activities due to both economic and racial barriers and discussed feeling outside the mainstream school culture because of widespread transfer of Latino students into remedial and alternative education programs. In addition, these youth reported that they lacked a sense of school belonging because there were no Latino personnel in their schools. The understaffing of Latino employees may have limited students' access to same-ethnicity role models, resulting in a reduced sense of belonging to the school for Latino students.

Acculturative Stress

Differences in age of immigration may also affect how Latino youth interpret experiences of discrimination and acculturative stress, which may in turn affect school success. Research has shown that following immigration, there is typically a significant amount of stress resulting from individual, social, and cultural changes (Berry, 1997). The acculturation process often involves feelings of confusion, anxiety, depression, marginality, alienation, psychosomatic symptoms, and identity confusion associated with attempts to resolve cultural differences (Berry, 1997). This set of experiences has collectively been called "acculturative stress" (Mena, Padilla, & Maldonado, 1987). While acculturative stress is still an emerging topic of study, research thus far generally has found that Latino students facing high levels of acculturative stress tend to under perform in school (Mena et al., 1987). In one

sample of Latino adolescents in the Southeast, higher levels of acculturative stress were associated with lower levels of school belonging, which were in turn associated with lower school grades (Ibañez et al., 2001).

Stanton-Salazar (1997) described the process of institutionalized exclusion that many minority youths encounter at school, and the barriers he described are clear contributors to acculturative stress. He argued that minority youth often face barriers such as economic constraints and stigmatization of their ethnic group, and these barriers prevent them from participating fully in school activities. Stanton-Salazar also described linguistic barriers in which schools discourage students from speaking and developing skills in their first language, and structural barriers such as inadequate tutoring or counseling in schools. He argued that all of these barriers combine to impede the development of minority youth.

Although acculturative stress has been shown to affect Latino youth at varying in levels of acculturation to mainstream American norms (Ibañez et al., 2001), the specific nature of acculturative stressors is likely to differ for immigrant as compared to U.S. born Latinos. Stresses related to acculturation and adaptation to a new host society may be most salient for recent immigrants (Berry, 1997), but stresses related to discrimination may be more salient for US-born youth (Stanton-Salazar, 1997). Whereas longtime US residents may believe that discrimination is a sign that trying hard in school is hopeless because Latinos cannot achieve higher-paid jobs, immigrant Latino youth may believe that discrimination will end when they learn English, or they may maintain hope by acknowledging the improvement in economic quality of life and believing that their economic situation will continue to improve (Ogbu, 1991; Fuligni, 1997; Suárez-Orozco, Suárez-Orozco, & Todorova, 2004).

In addition to examining acculturative stress as a single construct, the present study examined two major components of acculturative stress: distress related to adaptation or adjustment and distress related to discrimination experiences. Whereas research on the adaptation component of acculturative stress is sparse, significant research has been

conducted on the effects of discrimination on adolescents' academic achievement. Kao & Tienda (1998) have proposed that experiencing discrimination may reduce students' capacity for academic achievement by reducing opportunities, creating an unpleasant school environment, and creating higher stress levels. According to Kao & Tienda, disadvantaged youth may face daily discrimination in school and on the streets, which in turn reduces their motivation to achieve in school. They also found that many of the Hispanic students with whom they spoke were surprisingly uninformed of opportunities for college and financial aid, perhaps representing a more subtle form of discrimination.

Aviles et al. (1999) found that for the Latino youth in their sample, discrimination was an important factor in students' decisions to drop out of school. The students in their study described racial name-calling that would lead to fights in which teachers called the police but only reported the Latino students. They also described Americans as fearful that any group of Latino youth gathered in public was a dangerous gang. DeBlassie and DeBlassie (1996) point out that discrimination may lead indirectly to lower academic achievement because it may result in family poverty, which is related to school failure.

The Current Study

In sum, neighborhood social capital, sense of school belonging, adaptation stress, and discrimination are all important variables associated with adolescent academic achievement. However, these factors may contribute differentially to Latino students' academic achievement according to students' age at the time of their immigration because these youth may differ in their interpretations of experiences with their neighborhoods, schools, and acculturative stress. Specifically, this study examined whether age of immigration moderates the associations of academic achievement with neighborhood social capital, school belonging, and acculturative stress. These latter three variables are expected to have a positive association with academic achievement; however, it was expected that the slope for

each of the associations would be strongest for longtime US residents, weaker for those who immigrated in mid-childhood, and weakest for those who immigrated in adolescence.

Methods

Participants

Participants were 196 Latino students recruited from a middle school in a metropolitan area of the Southeast. Of these participants, 80% were immigrants, while the other 20% were Latinos who were born in the US. The majority of immigrants were of Mexican origin (61%); others were from Central America (10%), South America (5%), or the Caribbean (4%). The middle school from which participants were recruited is ethnically diverse, consisting of 54% Latino students, 24% African American students, 14% Asian, 8% White, and <1% Native American. Participants were either in seventh grade (52%) or eighth grade (48%), and 57% of participants were female. The average age for the sample was 13.6 years.

Procedure

Participants were recruited at their middle school by researchers who visited classrooms during school to explain the study. Students were invited to take part if they identified themselves as Latino/a or Hispanic, and it was explained that they could participate regardless of whether they spoke Spanish or where they were born. Participants were also recruited at an information table in the school cafeteria. Students were recruited in Spanish and in English, and parent consent forms were provided in Spanish and English. Students were offered a movie ticket as an incentive for participation.

Members of the research team administered the questionnaire by reading each question aloud to aid in reading comprehension. Spanish translations of all measures were created using a process of initial translation, back-translation, and centering (Barona & Barona, 1999). The questionnaire assessed participants' perceptions of and level of functioning in a variety of domains including school, neighborhood, family, peer group, and emotional functioning. For the purposes of this study, data assessing perceptions of school belonging, neighborhood social capital, and acculturative stress were used. Demographic information

such as age of immigration, gender, and grade level was also collected through self-report, and students' grades were obtained from school records.

Measures

School Belonging. Participants completed the *Psychological Sense of School Membership Scale* (Goodenow, 1993), which assesses students' satisfaction with the support they receive from teachers and students and their sense of being active members of their school community. Participants rated 18 items on a 4-point Likert-type scale, from "Not at all true" to "Very true." An example item is, "I feel I am a part of my school." High scores indicate a positive sense of school belonging. This scale was developed using a large, multi-ethnic sample with a significant minority of Latino students (Goodenow, 1993), and it has shown strong evidence of reliability and validity in studies of school-related attitudes and behaviors among Latino students (Ibañez, 2002). Internal consistency in this sample was $\alpha = .82$.

Acculturative Stress. Participants completed the *Acculturative Stress Questionnaire* (ASQ; Mena et al., 1987), which assesses social, attitudinal, familial, and environmental stresses and perceptions of stereotypes that are maintained by the majority group in relation to immigrant populations. This scale includes items that assess distress resulting from racial discrimination as well as stress associated with immigrating and adapting to a new environment. Participants rated items on a four-point Likert-type scale, from "Not at all true" to "Very True." An example of an item assessing discrimination-related stress states, "Many people have stereotypes about Latinos and treat me as if those things are true." An example of an item assessing adaptation-related stress is, "It's hard to be away from the country that my family is from." High scores on the *Acculturative Stress Scale* indicate high levels of perceived stress related to adaptation and discrimination-related stress. The scale was developed on a sample of Latino young adults. The overall scale has adequate internal consistency, $\alpha = .84$.

A principal axis extraction factor analysis with Varimax rotation with Kaiser normalization was performed on the 15 items of the ASQ relating to discrimination and adaptation. A 2-factor solution explaining 35% of the variance produced the most interpretable result and included factors that were labeled *discrimination* and *adaptation*. Ten items had high loadings ($>.39$) on the first factor and assessed perceptions of discrimination, such as, "Because I'm Latino(a), I feel that others don't include me in their activities." Items loading on that factor were summed to create a unit-weighted scale that showed high internal consistency, $\alpha = .81$. Five other items had high loadings ($>.41$) on the second factor and assessed difficulty with adaptation, such as, "It's hard to be away from the country that my family is from." Items loading on the second factor were summed to create a unit-weighted scale that showed strong internal consistency, $\alpha = .75$. Because the hypothesized effects in the present study may differ for these different types of acculturative stress, we analyzed the data using the two separate factors, discrimination stress and adaptation stress, instead of the overall acculturative stress measure.

Neighborhood Social Capital. Participants completed the 11-item *Neighborhood Capital Scale* (Stevenson, 1998), which assesses students' perceptions of neighbors as interested in their activities and well-being. An example item is, "Do adult neighbors on your block ask you about your school, social activities, or accomplishments (sports, academics, in church)?" Participants rated items asking about their neighbors' behaviors on a 4-point scale, from "None of them" to "All of them." High scores indicate positive perceptions of neighborhood social capital. The scale was developed for use with African American urban youth, and it assesses aspects of neighborhood social capital that are likely to affect Latino urban youth. The scale has adequate internal consistency, $\alpha = .70$, in the present sample.

Immigration Age. Following Portes and Rumbaut (2001), the present study classified Latino adolescents into the following three groups: 1) US-reared students (either born in the US or immigrated before age 5), 2) child immigrants (immigrated between ages 5 and 12),

and 3) adolescent immigrants (immigrated after age 12). Since the participants for this study are younger than those in Portes and Rumbaut's (2001) study, three groups were used instead of four.

Results

Preliminary Analyses

One-way analyses of variance (ANOVAs) were used to examine gender and grade level differences on GPA and the independent variables. As shown in Table 1, there were significant gender differences for GPA and discrimination stress, and there were significant grade level differences for GPA, neighborhood capital, and adaptation. The effect sizes for these differences were modest; Eta^2 ranged from .02 to .07. In addition to examining mean differences in gender and grade level, the interactions between these covariates and the independent variables were examined. Analysis of covariance (ANCOVAs) was used to test whether gender or grade level interacted with school belonging, neighborhood capital, or acculturative stress to explain mean differences in GPA. The interaction of school belonging X grade level reached significance [$F(1,192) = 4.23, p < .05$]. Separate regression analyses for seventh and eighth grade students revealed that school membership is positively associated with GPA for both seventh and eighth grade students, but the association was stronger for participants in eighth grade [$F(1,100) = 13.40, p < .001, R^2 = .13$] than for those in seventh grade [$F(1,92) = 4.87, p < .05, R^2 = .05$]. The interaction between school membership and grade level was therefore included as a covariate in the primary analyses.

Table 1. Gender and grade level differences on GPA and the independent variables.

	Total Mean (SD)	Gender Mean (SD)		Grade Level Mean (SD)	
		Boys	Girls	7 th	8 th
GPA	2.31(.87)	2.16(.90)	2.42(.82)*	2.42(.77)	2.18(.95)*
Neighborhood Capital	2.38(.49)	2.42(.51)	2.34(.47)	2.45(.51)	2.30(.46)*
School Belonging	2.89(.48)	2.85(.48)	2.92(.48)	2.93(.54)	2.84(.40)
Discrimination Stress	2.41(.61)	2.31(.64)	2.49(.58)*	2.35(.63)	2.48(.59)
Adaptation Stress	2.52(.82)	2.51(.80)	2.52(.83)	2.72(.86)	2.29(.71)*

*mean difference present, $p < .05$

Immigration Age: Main Effects. ANOVAs were also used to examine immigration age differences on GPA and the independent variables. As shown in Table 2, there were significant mean differences in adaptation stress among the immigration age groups. Post-hoc analyses using Duncan's multiple range test revealed that mean adaptation stress was higher for adolescent immigrants than for child immigrants, which in turn was higher than for US-reared students. Post-hoc analyses also indicated that mean school belonging was higher for child immigrants than for adolescent immigrants. In addition to examining mean differences in immigration age, we also examined the interactions between immigration age and the two covariates, gender and grade level. None of these interactions reached significance.

Correlations among the continuous variables are shown in Table 3. As expected, GPA was positively correlated with school belonging and negatively correlated with discrimination stress. Counter to expectations, however, GPA was not correlated with neighborhood capital or adaptation stress. Among the independent variables, school belonging was positively

correlated with neighborhood capital and negatively correlated with discrimination stress. Adaptation and discrimination stress were positively correlated.

Table 2. Immigration age differences on GPA and the independent variables.

	Immigration Age Mean (SD)		
	US-Reared	Child Immigrant	Adolescent Immigrant
GPA	2.23(.95)	2.46(.83)	2.21(.78)
Neighborhood Capital	2.31(.51)	2.46(.46)	2.37(.50)
School Belonging	2.91(.45)ab	2.95(.49)a	2.77(.50)b
Discrimination Stress	2.33(.62)	2.41(.55)	2.51(.67)
Adaptation Stress	2.03(.73)a	2.57(.69)b	3.12(.65)c

Note: Coefficients with differing subscripts (a,b,c) are significantly different, $p < .05$.

Table 3. Correlations among continuous variables.

	GPA	Neighborhood Capital	School Belonging	Discrimination Stress	Adaptation Stress
GPA	1				
Neighborhood Capital	.02	1			
School Belonging	.28**	.36**	1		
Discrimination Stress	-.16*	-.09	-.30**	1	
Adaptation Stress	-.09	.07	-.08	.44**	1

* $p < .05$, ** $p < .01$

Primary Analyses

Hypotheses regarding the moderating role of immigration age on the associations of GPA with school belonging, neighborhood capital, and acculturation stress were examined using a series of ANCOVAs. Some analyses included covariates and others did not. The

decision to include a covariate was based on whether or not preliminary analyses indicated a statistically significant difference in gender or grade level means on levels of the independent variable. The covariate was also included if the covariate X independent variable interaction was a statistically significant predictor of GPA. See Table 4 for a summary of results in the final models.

Neighborhood Capital. In the final analysis for neighborhood social capital there were no main effects, nor was there an interaction between neighborhood capital and immigration age. Thus, neighborhood social capital was unrelated to academic achievement across immigration age.

School Belonging. There was a significant main effect of school belonging on GPA [$F(1,188)=16.63, p<.01, Partial\ Eta^2 = .08$], such that those with higher levels of school belonging had higher GPAs. Grade level was also a significant predictor of GPA in this model; seventh graders had a higher GPA than eighth graders. The interaction between school belonging and immigration age was not significant. Thus, the contribution of school belonging to academic achievement was similar across groups.

Discrimination Stress. A main effect for discrimination stress [$F(1,189)=6.94, p<.01, Partial\ Eta^2 = .04$] was found, such that students with higher levels of perceived discrimination had lower GPAs. In this model, there was also a main effect of gender; girls had a higher GPA than boys. There was no interaction between discrimination stress and immigration age, indicating that perceived discrimination had a similar negative association with achievement across groups.

Adaptation Stress. In the adaptation stress model, there was no main effect for adaptation stress or immigration age, although there was a main effect for the covariate grade level, with seventh graders earning a higher GPA than eighth graders. The interaction between adaptation stress and immigration age was statistically significant [$F(2,189)=2.52, p<.05$ (one-tailed), $Partial\ Eta^2 = .03$]. A one-tailed test was used because the a priori

hypothesis stated the expected direction of the interaction (the association between adaptation stress and GPA was expected to be stronger for US-reared students than for child and adolescent immigrants). We calculated separate regression equations for US-reared students, child immigrants, and adolescent immigrants to explain this interaction. We entered grade level in the first step of the equations and adaptation stress in the second step. As predicted, there was a negative association between adaptation stress on GPA for US-reared students [F change (1,71) = 4.27, $p < .01$]. The R^2 change for the second step was .10. However, also as predicted, the association between adaptation stress and GPA did not reach significance for child and adolescent immigrants.

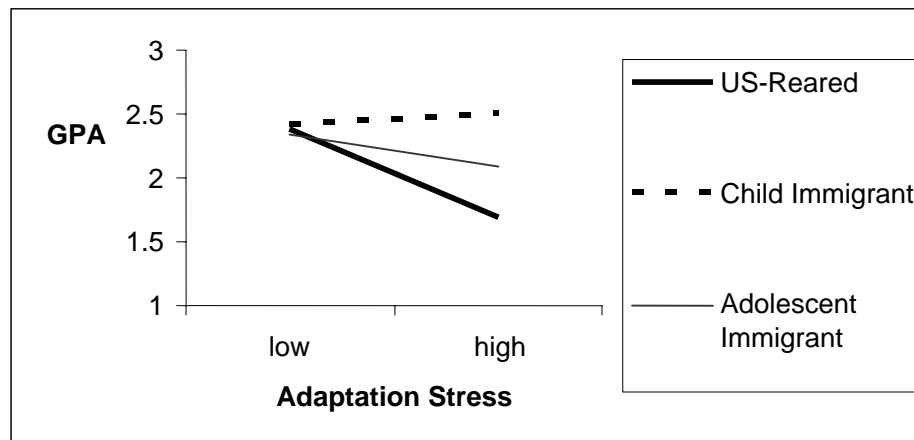
The confidence intervals of the slopes for each immigration age group were also examined to determine whether they overlapped with each other. The 95% confidence interval for B for US-reared students was -.71 to -.12. The B interval for child immigrants was -.26 to .37. The B interval for adolescent immigrants was -.47 to .17. Although some overlap does exist between all three immigration age groups, the intervals clearly suggest that adaptation stress is associated with GPA for US-reared students but not for child and adolescent immigrants. See Figure 1 for a graphical representation of these regression equations.

Table 4. Primary analyses testing immigration age as a moderator of the association between independent variables and GPA.

		<i>df</i>	<i>F</i>	<i>Partial Eta</i> ²
<i>Neighborhood Capital</i>	Neighborhood Capital	1,189	.24	.00
	Immigration Age	2,189	2.06	.02
	Neighborhood Capital X Immigration Age Interaction	2,189	1.21	.02
<i>School Belonging</i>	Grade Level	1,188	4.57*	.02
	School Belonging	1,188	16.63**	.08
	Immigration Age	2,188	.26	.00
	Grade Level X School Belonging Interaction	1,188	3.58	.02
	School Belonging X Immigration Age Interaction	2,188	.27	.00
<i>Discrimination Stress</i>	Gender	1,189	4.95*	.03
	Discrimination Stress	1,189	6.94**	.04
	Immigration Age	2,189	.38	.00
	Discrimination Stress X Immigration Age Interaction	2,189	.30	.00
<i>Adaptation Stress</i>	Grade Level	1,189	4.49*	.02
	Adaptation Stress	1,189	2.46	.01
	Immigration Age	2,189	1.30	.01
	Adaptation Stress X Immigration Age Interaction	2,189	2.52* ⁺	.03

* $p < .05$, ** $p < .01$, ⁺ *one-tailed*

Figure 1. Immigration age moderates the association between adaptation stress and GPA.



Discussion

The first hypothesis of this study concerned the context of academic achievement for Latino adolescents. This study hypothesized that neighborhood social capital, sense of school belonging, adaptation stress, and discrimination would be associated with academic achievement. The second hypothesis was that these variables would contribute differentially to students' achievement according to their age at the time of their immigration. It was expected that students who arrived in the US more recently would maintain better grades in the face of these obstacles than peers who had spent more time in the US. This study found support for the context of academic achievement hypothesis and limited support for the immigration age hypothesis.

Neighborhood Capital, School Belonging, & Discrimination Stress

Consistent with the first set of hypotheses, discrimination stress and school belonging were significant predictors of GPA. However, there was no evidence of a moderating effect of immigration age. These findings suggest that school belonging and discrimination stress may play an important role in GPA for both US-born Latinos and Latino youth who immigrated as children or adolescents. These findings are consistent with past research, which has found that school belonging and discrimination are negatively associated with academic achievement (Goodenow, 1993; Stanton-Salazar, 1997).

The data did not support the hypothesis that neighborhood social capital is associated with GPA. It is possible that neighborhood factors are not as important or that only large differences in neighborhood capital show effects. It is also possible that the measure we used is insensitive to aspects of neighborhood that might have a larger impact on achievement such as having neighbors with good jobs and high education levels. It is possible that relationships with neighbors may not help students achieve if those neighbors have low education levels and low-wage jobs. It is also possible that, since the participants all attended the same Title 1 school (i.e., a school serving a high proportion of students from low income families), their

neighborhoods may have been similar. In addition, our sample may not have enough variability in neighborhood social capital to detect differences since participants were almost universally from low-income families.

It should also be noted that unlike Ainsworth's (2002) study which used census data as a proxy for "neighborhood," participants in the present study responded to questions about their neighborhoods, allowing them to determine what area they considered a part of their neighborhood. Aber and Nieto (2000) describe the importance of focusing research on individuals' perceptions of their neighborhoods rather than using census data as a proxy in order to avoid making assumptions about the boundaries of a neighborhood or the amount of social contact within a given area. Discrepancies between results of the present study and Ainsworth's (2002) study may therefore be a result of this difference in measurement.

Adaptation Stress

Our findings suggest that a later immigration age buffers the negative association between adaptation stress and GPA. Consistent with our second set of hypotheses, adaptation stress predicts GPA for US-reared students. However, adaptation stress is not associated with GPA for child and adolescent immigrants. This finding of a difference between US-reared students and recent immigrants provides further evidence supporting Suárez-Orozco's (2000) research demonstrating that immigrants seem more academically resilient than second generation peers in the face of acculturative stress.

Strengths and Limitations

This study makes an important contribution to knowledge about academic achievement because it examines contextual factors and within-group differences to determine factors affecting school success among Latino youth. Examining within-group differences allows us to find strengths that are already present within a population in order to determine what factors might promote achievement for more students from this population. For example, this study has demonstrated that school belonging and discrimination are

important factors to consider in the promotion of academic achievement for Latino youth. Studies that fail to examine important dimensions of diversity among youth born to immigrant families might fail to recognize the importance of adaptation stress for US-reared students.

A limitation of this study is that it utilizes cross-sectional data and therefore cannot determine the direction of causality. Longitudinal studies of contextual factors that promote academic achievement should be conducted to enrich our understanding of which factors might improve school performance over time.

Future Directions

These findings suggest that increasing a sense of school belonging and minimizing experiences of discrimination are important in the promotion of academic achievement among Latino youth. They also suggest that immigrating in childhood or adolescence may buffer students from the negative effects of adaptation stress. Future research should examine the mechanism of this buffering effect and evaluate ways to promote similar resilience among US-reared students.

For example, some research has argued that recent immigrants maintain a sense of hopefulness that buffers them from the negative effects of obstacles in the host country, whereas youth who grow up in the US may feel more pessimistic (Suárez-Orozco, 1991; Kao & Tienda, 1998). These researchers have suggested that this difference in hopefulness may be the result of different frames of reference, or worlds of experience, to which immigrant and US-born students compare their own lives. For immigrant Latinos, the frame of reference may be their experiences in their schools and neighborhoods in their country of origin or other places they have lived. For US-reared Latinos, on the other hand, the frame of reference may be the dominant majority in the US. These differences in frames of reference may shape how these adolescents interpret their opportunities and future expectations.

Some evidence that differences in immigration age or generation status could be the result of different frames of reference can be found in qualitative observations of Latino adolescents. Matute-Bianchi (1991) has observed that Mexican immigrant students in California tend to perform better in school than their US-born Mexican-descent peers, and she proposes that what differentiates immigrants and US-born Mexican Americans is not their levels of acculturation or assimilation but rather the US-born students' perceptions of their position in the US as economically subordinate and stigmatized. She found that many of the academically unsuccessful US-born students could not describe a single person of Mexican-descent whom they knew well or whom they considered to be successful.

Suárez-Orozco (1991) found that Central American refugee students who escaped from horrors of war and benefited from the sacrifices of family members tended to be successful in school. He proposed that these students may perceive the relative benefits of living in the US as outweighing negative experiences and that helping less fortunate relatives by succeeding in school may then become a primary goal. Future research should directly measure the frame of reference and optimism of Latino youth in order to understand the mechanism of the buffering effect of recent arrival in the US. Researchers could develop a frame of reference and optimism measure by conducting focus groups and open-ended interviews with immigrant youth. Students could be asked to compare themselves and their opportunities to those of other people and then be probed for more information about their comparison group. Students could also be asked about inequalities they perceive in the world and whether they see themselves as privileged, oppressed, or both. In addition, they could be asked about opportunities for Latinos, what kinds of careers are possible for them individually and for Latinos in general.

In sum, this study found support for the hypothesis that recent immigrants are less vulnerable to low achievement than US-reared youth in the face of adaptation stress. However, the study also found that more recent immigrants are just as susceptible as US-

reared youth to the negative effects of discrimination and lack of connection to school. It is possible that adaptation stress is especially salient for US-reared Latino youth because they feel out of place in the US, but they also feel disconnected from their family's country of origin (Suarez-Orozco, 2004). Further research should examine the possible connection between adaptation stress and ethnic identity formation.

Some researchers are beginning to emphasize the role of positive ethnic identity development in academic achievement among Latino youth (Gonzales, Knight, & Birman, 2004). These authors call for a dual focus on both acculturation to the US culture and *enculturation*, or learning about their family's culture of origin. Future research should explore the role that enculturation may play in achievement among Latino youth, attending to differences between those who grew up in the US and those who grew up abroad. Future research should also explore school system changes that increase school belonging and minimize discrimination experiences for all Latino youth.

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Appendix

*Psychological Sense of School Membership Scale (PSSM) (Goodenow, 1993)***PSSM**

		Not At All True	Slightly True	Somewhat True	Very True
1.	I feel I am a part of my school. <i>Siento que soy parte de mi escuela.</i>	1	2	3	4
2.	People notice when I have the skills to do something. <i>La gente reconoce cuando tengo habilidad para algo.</i>	1	2	3	4
3.	It's hard for people like me to be accepted here. <i>Es difícil para la gente como yo ser aceptado aquí.</i>	1	2	3	4
4.	I feel safe on the school bus or while walking to school. <i>Me siento seguro/a en el autobus de la escuela o cuando camino hacia la escuela.</i>	1	2	3	4
5.	Other students in this school take my opinions seriously. <i>Otros estudiantes en esta escuela toman mis opiniones seriamente.</i>	1	2	3	4

PSSM

		Nada Cierto	Ligeramente Cierto	Algo Cierto	Muy Cierto
6.	Most teachers at my school are interested in me. <i>La mayoría de los(as) maestros(as) de mi escuela están interesados(as) en mí.</i>	1	2	3	4
7.	Sometimes I feel as if I don't belong here. <i>Algunas veces me siento como si yo no perteneciera aquí.</i>	1	2	3	4
8.	I feel safe standing in front of my school building. <i>Me siento seguro/a pararme enfrente del edificio de mi escuela.</i>	1	2	3	4
9.	There's at least one teacher or adult in this school I can talk to if I have a problem. <i>Hay por lo menos un maestro ó adulto en la escuela con quien puedo hablar si tengo un problema.</i>	1	2	3	4
10.	People at this school are friendly to me. <i>La gente en esta escuela son amigables (amistosos) conmigo.</i>	1	2	3	4
		Not At All True	Slightly True	Somewhat True	Very True
11.	Teachers here are not interested in people like me. <i>Los(as) maestros(as) aquí no están interesados en gente como yo.</i>	1	2	3	4
12.	I feel safe at after-school activities at my school. <i>Me siento seguro/a en las actividades que ocurren después de escuela.</i>	1	2	3	4
13.	I am included in many activities at my school. <i>Me incluyen en muchas actividades en mi escuela..</i>				
14.	I am treated with as much respect as other students. <i>Me tratan con el mismo respeto con que tratan a otros estudiantes.</i>	1	2	3	4
15.	I feel very different from most other students here. <i>Me siento muy diferente a la mayoría de los estudiantes de aquí.</i>	1	2	3	4

PSSM

		Nada Cierto	Ligeramente Cierto	Algo Cierto	Muy Cierto
16.	I feel safe in the restrooms at my school. <i>Me siento seguro/a en los banos de la escuela.</i>	1	2	3	4
17.	I can really be who I am at this school. <i>Realmente puedo ser quien soy en esta escuela.</i>	1	2	3	4
18.	The teachers here respect me. <i>Los(as) maestros(as) de aquí me respetan</i>	1	2	3	4
19.	People know I can do good work. <i>La gente sabe que yo puedo hacer buen trabajo.</i>	1	2	3	4
20.	I wish I were in a different school. <i>Desearía estar en una escuela diferente.</i>	1	2	3	4
		Not At All True	Slightly True	Somewhat True	Very True
21.	I feel proud of being a part of my school. <i>Me siento orgulloso(a) de pertenecer a mi escuela.</i>	1	2	3	4
22.	Other students like the way I am. <i>A otros estudiantes les gusta como soy yo.</i>	1	2	3	4
23.	I feel safe in my school. <i>Me siento seguro(a) en mi escuela.</i>	1	2	3	4



Acculturative Stress Scale (ASQ) (Mena et al., 1987)

ASQ

		Not At All True	Slightly True	Somewhat True	Very True
1.	I feel bad when others make jokes about or put down Latinos. <i>Me siento mal cuando otros se burlan ó dicen cosas malas de los Latinos.</i>	1	2	3	4
2.	I have more problems to overcome than most people do. <i>Yo tengo más problemas que solucionar que otras personas.</i>	1	2	3	4
3.	It bothers me that my family does not understand my new American values. <i>Me molesta que mi familia no entienda mis nuevos valores norte- americanos.</i>	1	2	3	4
4.	People in my family who I am close to have plans for when I grow up that I don't like. <i>Algunos familiares cercanos hacen planes para cuando yo sea grande que a mí no me agradan.</i>	1	2	3	4
5.	It is hard to tell my friends how I really feel. <i>Es difícil decirle a mis amigos como me siento realmente.</i>	1	2	3	4
		Nada Cierto	Ligeramente Cierto	Algo Cierto	Muy Cierto
6.	It bothers me to think that so many people use drugs. <i>Me molesta pensar qué tanta gente usa drogas.</i>	1	2	3	4
7.	It bothers me that some of my family does not live near me. <i>Me molesta que algunos miembros de mi familia no vivan cerca de mí.</i>	1	2	3	4
8.	I sometimes feel that being Latino(a) makes it hard to get a good job. <i>Algunas veces siento que por ser Latino(a) se me hace más difícil obtener un buen trabajo.</i>	1	2	3	4
9.	I don't have any close friends. <i>No tengo ningún(a) amigo(a) cercano(a).</i>	1	2	3	4
10.	Many people have stereotypes about Latinos and treat me as if those things are true. <i>Muchas personas tienen ciertas ideas acerca de los latinos (estereo-tipos) y a mí me tratan como si esas cosas fueran verdad.</i>	1	2	3	4

ASQ

		Not At All True	Slightly True	Somewhat True	Very True
11.	I don't feel at home in the United States. <i>No me siento como en mi casa aquí en los Estados Unidos.</i>	1	2	3	4
12.	People think I am shy when I really just have trouble speaking English. <i>Algunas personas piensan que soy tímido(a) cuando la verdad es que tengo problemas al hablar inglés.</i>	1	2	3	4
13.	I often feel that people try to stop me from improving myself. <i>Con frecuencia siento que hay personas que tratan de evitar que yo me supere.</i>	1	2	3	4
14.	It bothers me when people pressure me to be like everyone else. <i>Me molesta cuándo la gente me presiona a que sea como todas las demás personas.</i>	1	2	3	4
15.	I often feel ignored by people who are supposed to help me. <i>Muchas veces siento que me ignoran las personas que supuestamente están para ayudarme.</i>	1	2	3	4
		Nada Cierto	Ligeramente Cierto	Algo Cierto	Muy Cierto
16.	Because I am Latino(a) I do not get enough credit for the work I do. <i>No me dan suficiente crédito por el trabajo que hago, porque soy latino(a).</i>	1	2	3	4
17.	It bothers me that I have an accent. <i>Me molesta tener un acento.</i>	1	2	3	4
18.	It's hard to be away from the country that my family is from. <i>Es duro estar lejos del país de donde vino mi familia.</i>	1	2	3	4
19.	I often think about my cultural background. <i>Pienso frecuentemente acerca de mi cultura.</i>	1	2	3	4
20.	Because I'm Latino(a), I feel that others(neighbors, students) don't include me in their activities. <i>Siento que por ser latino(a), hay personas (vecinos, estudiantes) que no me incluyen en sus actividades.</i>	1	2	3	4
21.	Being with my family in a public place makes me feel really different. <i>Cuando estoy con mi familia en un lugar público, me siento realmente diferente a los demás.</i>	1	2	3	4
22.	People look down on my Latino customs. <i>Algunas personas no respetan mis costumbres latinas.</i>	1	2	3	4
23.	I have trouble understanding others when they speak English. <i>Me cuesta trabajo entender a otros cuando hablan inglés.</i>	1	2	3	4
24.	I feel at home here in Georgia. <i>Me siento como en mi casa aquí en Georgia.</i>	1	2	3	4

Neighborhood Capital Scale (NCQ) (Stevenson, 1998)

NCQ

		None (of them) Ninguno	A Few (of them) Algunos	A Lot (of them) Muchos	All (of them) Todos
1.	Do you know the adult neighbors on your block? <i>¿Conoces a los adultos de tu vecindad(cuadra)?</i>	1	2	3	4
2.	Do your parents know your close friends personally? <i>¿Tus padres conocen personalmente a tus amigos cercanos?</i>	1	2	3	4

NCQ

		Never 1	Sometimes 2	Often 3	Always 4
4.	Do your adult neighbors watch what you or other children in your neighborhood do? <i>¿Tus vecinos adultos se fijan en lo que tu u otros niños(as) hacen en tu vecindad?</i>	1	2	3	4
5.	Are there positive things that happen on or near your block (such as block parties, fun trips)? <i>¿Hay algunas cosas positivas que suceden cerca ó dentro de tu vecindad? (como fiestas en la vecindad, paseos divertidos)</i>	1	2	3	4
6.	Are there any negative things (burglaries, drug dealing) that happen on or near your block? <i>¿Hay algunas cosas negativas(robos, negocios sucios) que suceden cerca de tu vecindad o en tu vecindad?</i>	1	2	3	4
7.	Do adult neighbors report what they see (like burglaries, suspicious people) to other people on your block? <i>¿Los vecinos adultos reportan lo que ven (como robos, gente sospechosa) a la otra gente de tu vecindad?</i>	1	2	3	4
8.	Do adult neighbors on your block ask you about your school, social activities, or accomplishments (sports, academics, in church)? <i>¿Los vecinos adultos de tu vecindad te preguntan</i>	Nunca 1	A Veces 2	Casi Siempre 3	Todos 4
3.	Do your parents have friendships with adult neighbors on your block? <i>¿Tus padres tienen amistades con los vecinos adultos de tu vecindad?</i>	1	2	3	4

