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Competence under challenge: Exploring the protective influence of parental support and ethnic identity in Latino college students

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Abstract

This longitudinal study examined the protective influence of psychological and family factors on academic achievement in 123 Latino college (101 Mexican American, 14 Central American, 8 mixed Mexican/Central American) students. Three cultural resources—ethnic identity, family interdependence, and parental support—were hypothesized as protective factors that modify the effects of socioeconomic disadvantage in a positive direction. The pattern of findings suggests that Latino students with greater psychological and family resources evidence greater academic achievement. After covarying between-person differences in gender and generational status, both ethnic identity and parental support moderated the effects of low socioeconomic status on academic achievement.
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Introduction

An extensive literature documents a strong association between position in the socioeconomic hierarchy and educational achievement (Caldas & Bankston, 1997; Martinez, DeGarmo, & Eddy, 2004). At the lower end, socioeconomic status (SES) is a powerful correlate of multiple risk factors (e.g. impaired parenting, family instability, marital conflict, community violence) that together act in concert to thwart positive adaptation (Brooks Gunn, Duncan, & Britto, 1999; Klebanov, Brooks Gunn, McCarton, & McCormick, 1998). Despite considerable evidence linking socioeconomic disadvantage to maladaptive outcomes, the developmental course of low-income youth are variable (Brooks Gunn et al., 1999; Garmezy, 1993). Indeed, a significant proportion of impoverished youth manage to achieve positive outcomes despite these adverse experiences (Masten et al., 1999; Werner & Smith, 2001).

In this article, we explore the protective cultural resources that enable some ethnic minority youth to achieve positive outcomes in the face of socioeconomic inequalities. We focus on Latino college students and probe the hypothesis that individual- and family-level influences serve to modify the effects of low SES in a positive direction. In particular, we target the positive achievement outcomes that may ensue from protective profiles of family interdependence, parental support, and ethnic identity. We argue that the emergence of positive adaptation in the context of adversity eventuates from multiple influences that come in the form of both *baseline resources* (i.e. strong family interdependence and high ethnic identity) and *intervening processes* (i.e., consistent parental support).

The idea of studying disadvantage and its accumulation over time is not new, having been invoked to explain sociodemographic disparities in childhood adjustment outcomes (cf. Cicchetti & Rogosch, 1997; Werner, 2000). Moreover, resilience scholars have long noted that adaptational success in the face of exposure to significant threats to development rests, fundamentally, on a constellation of personal attributes and consistent, supportive relationships (Garmezy, 1974, 1987; Rutter, 1987; Werner, 1989). We broaden these ideas, however, to encompass factors that are a part of the life-course trajectory of Latino youth who lack socioeconomic advancement, but who nonetheless evidence high academic achievement. We construe such lives as embodying a form of *resilience* or positive adaptation (Bonanno, 2004; Masten, 2001) vis-à-vis inequalities in socioeconomic standing (Cabrera & Padilla, 2004; Ceballo, 2004; Martinez et al., 2004).

Socioeconomic differences in Latino academic achievement: Effects of parental support, family interdependence, and ethnic identity

Latinos are among the largest underrepresented groups in higher education (Marotta & Garcia, 2003), with only 5.7% of men and 6.1% of women graduating from college (US Census Bureau, 2000). Among the challenges that many Latino students face in completing college is socioeconomic instability (Quintana, Vogel, & Ybarra, 1991; Rodriguez, Myers, Morris, & Cardoza, 2000; Solberg, Hale, Villarreal, & Kavanagh, 1993). Most hold part-time or full-time jobs and must balance the competing demands of school, work, and family responsibilities (Solberg et al., 1993; Solberg, Valdez, & Villarreal, 1994). In addition, a disproportionate number of Latinos reside in families with incomes below the poverty line (Marotta & Garcia, 2003). For many Latino college students, financial hardships contribute to higher levels of psychological

distress and feelings of alienation (Castillo & Hill, 2004; Solberg & Villarreal, 1997) and lower rates of college retention (Castillo & Hill, 2004; McCool, 1984).

Despite considerable evidence of socioeconomic differences in Latino educational outcomes (Quintana et al., 1991; Rodriguez et al., 2000), explanations for socioeconomic inequalities in Latino academic achievement remain elusive. The difficulty stems, in part, from the robust finding that human populations are economically and socially heterogeneous within each level of a hierarchy (House, 1977; House, Umberson, & Landis, 1988). Thus, there are Latinos at the bottom who excel academically despite low socioeconomic standing (Arellano & Padilla, 1996; Cabrera & Padilla, 2004). In addition, socioeconomic differences in academic achievement may mask critical psychosocial and environmental factors implicated in the academic success of Latinos students (Rodriguez, Mira, Myers, Morris, & Cardoza, 2003; Solberg & Villarreal, 1997).

A growing literature suggests that family factors may be protective for Latino college students at risk for low academic achievement (Arellano & Padilla, 1996; Kenny & Stryker, 1996; Schneider & Ward, 2003). In particular, *family interdependence* and *parental support* have emerged as key determinants of academic adjustment among Latinos (Martinez et al., 2004; Schneider & Ward, 2003). An aspect of the core Latino value of *familismo* (see Keefe, Padilla, & Carlos, 1978; Sabogal et al., 1987), attitudes toward family interdependence and obligation have been identified as important contributors to academic motivation in immigrant families (Fuligni, 2001; Fuligni & Pedersen, 2002; Fuligni & Zhang, 2004). Among Latino college students, family interdependence is associated with a strong desire to do well educationally, to repay parents for sacrifices made in immigrating to the US (Phinney, Dennis, & Osoria, in press; Saunders & Serna, 2004; Tseng, 2004). Considerable work has also focused on the role of parental support among Latino college students and its influence on psychological well-being (Kenny & Perez, 1996; Rodriguez et al., 2003) and academic adjustment (Cabrera & Padilla, 2004; Schneider & Ward, 2003). Arellano and Padilla (1996) found that the key predictor that accounted for the academic resilience of Latino youth was supportive family ties. Together, these prior investigations help to clarify the potential familial routes (i.e. family interdependence and parental support) through which resilience may be honed in the face of socioeconomic disparities.

Another factor possibly implicated in the academic success of Latinos is *ethnic identity*. An important aspect of identity formation among members of ethnic minority groups, ethnic identity development is a central task during adolescence (Phinney, 1990; Phinney, Cantu, & Kurtz, 1997). From a developmental perspective, ethnic identity is seen as a process of exploring the implications of one's ethnicity and coming to understand and affirm one's membership in an ethnic group (Phinney, 1989). On the basis of having explored and made a commitment to one's ethnic group, individuals are said to have an achieved ethnic identity, which, like an achieved ego identity (Marcia, Waterman, Matteson, Archer, & Orlofsky, 1993), provides a strong and secure sense of self that serves to guide important life decisions (Phinney, 1993). A substantial body of research shows that an achieved ethnic identity promotes psychological well-being among minority group members and can influence adjustment in adolescence and young adulthood (Phinney, 1992, 1995; Phinney & Alipuria, 1990; Phinney et al., 1997; Phinney, Horenczyk, Liebkind, & Vedder, 2001).

Although recent studies have begun to focus on the role of ethnic identity in college adjustment (Chavous et al., 2003; Ichiyama, McQuarrie, & Ching, 1996; Lee, 2005; Lee & Yoo, 2004), few empirical studies have directly examined the relationship between ethnic identity and academic achievement among Latino college students, and those that have report inconsistent results. For example, Saylor and Aries (1999) found that compared with less ethnically identified Latinos,

highly identified Latinos were less adjusted to college. Other studies suggest that for Latino college students, a strong ethnic identity may be positively associated with educational engagement (Ethier & Deaux, 1994; Torres, 2003). This later work intersects with the ego identity and racial identity literatures (cf. Marcia et al., 1993; Sellers, Smith, Shelton, Rowley, & Chavous, 1998) in suggesting a positive association between ethnic identity centrality and academic adjustment (Chavous et al., 2003; Fuligni, Witkow, & Garcia, 2005; see also, Phinney & Kohatsu, 1997).

A central but as yet unanswered question from the standpoint of socioeconomic disparities in academic achievement is what accounts for the long-term, positive educational outcomes of Latino students who lack socioeconomic advantage (Cabrera & Padilla, 2004; Gonzalez & Padilla, 1997)? To this query, we bring an emphasis on multiple life pathways—that is, our inquiry probes the ways in which enduring socioeconomic hardships are offset in young adulthood by good baseline resources (i.e., strong family interdependence and high ethnic identity) as well as intervening experiences of advantage (i.e. sustained parental support). Our guiding hypothesis is that family interdependence, ethnic identity, and parental support are protective factors that enable some Latino college students to excel academically despite lack of socioeconomic advancement and its associated benefits.

Analytic approach and key conceptual issues

Overall, our analytic approach converges with the growing interest in the study of positive adaptation and resilience among ethnic minorities (e.g., Lee, 2005; Lerner, Taylor, & von Eye, 2002; Szalacha, Erkut, Garcia Coll et al., 2003) and the heightened emphasis on efforts to track unfolding trajectories of protective influences (cf. Bonanno, 2004; Werner, 2000). In the present analysis, we use data from a longitudinal investigation of a sample of university freshmen who have been followed over a 3-year period. In this work, we are primarily interested in exploring the *accumulation of advantage* in the lives of Latino youth, as well as the impact of key baseline resources in shaping resilience in the face of socioeconomic challenge. The key issues we address include: (1) To what extent is socioeconomic adversity, in the form of low parental SES, a risk factor for academic underachievement among Latino college students? (2) To what degree are resilient Latino youth distinguishable, both initially and over time, from their less well functioning peers who share similar backgrounds of socioeconomic disadvantage? (3) Is the capacity to surmount adversity reflected in higher baseline resources (i.e., strong family interdependence and high ethnic identity), more persistent environmental supports (i.e. sustained parental support), or some combination of these influences? Both baseline resources and cumulative advantages, we hypothesize, have ameliorative, protective benefits that may be central to understanding the academic success of resilient Latino students.

Method

Participants

Participants were 123 Latino college students (84 females and 39 males) attending an ethnically diverse urban university in southern California with a predominantly Latino student

body.[1] Mexican Americans (69 women, 32 men) constituted the majority of the sample, followed by Central Americans (9 women, 5 men), and those who were mixed Mexican American/Central American (6 women, 2 men). These groups of students participated in a longitudinal study on the experiences of ethnic minority students whose parents did not attend or complete college. All participants rated themselves as being proficient (26%) or very proficient (74%) in English.

Data collection began in the fall quarter of participants' freshmen year in college, at which time the average age was 18.02, sp = .69. The majority of participants ($n = 90$, 76%) were second generation immigrants (i.e., they had either one or both parents who were born outside the US). Of the remaining students, 20 (17%) were first-generation (i.e. they were born outside the US), and 8 (7%) were third generation or later (i.e., both they and their parents were born in the US). Most of participants ($n = 102$, 83%) lived with parents or relatives in their first quarter of college, and one-third ($n = 40$, 33%) held jobs. SES was determined on the basis of parental education and occupation. The majority ($n = 67$, 55%) of students came from *very low* SES backgrounds (i.e. one or both parents had unskilled occupations and/or had completed no more than some high school education). Thirty-six (29%) participants were classified as *moderately low* in SES (i.e., one or both parents had skilled occupations and/or had no more than a high school education). The remaining 20 participants (16%) were classified as *medium* or average in SES (i.e. both parents had white-collar or professional occupations and/or at least one parent had some college education). No participants had parents who completed college.

Procedure

Entering freshmen were asked to complete a survey of college attitudes at the beginning of the fall quarter. Students were recruited from 30 sections of a course required of all incoming freshmen that introduced them to the university. Surveys were distributed during class but were completed outside of class time. Instructors in three sections of the course did not require the survey because of time constraints; in some cases, students neglected to complete the assignment. Of the 1174 students enroled in the course, 856 completed the fall survey. All participants who met the following three criteria were invited to participate in a longitudinal study: (1) self-identified as either Mexican or Central American, Chinese, Chinese/Vietnamese, or African American; (2) had parents who did not complete college; (3) were first-time freshmen aged 18 or 19. Only Latino participants are included in the present study. Of the 395 Latino students who were eligible, 123 students agreed to participate in the longitudinal study and completed consent forms, allowing access to their academic records. A multivariate analysis of variance (MANOVA) was performed comparing participating students and non-participants on parental support of education, family interdependence, ethnic identity commitment, and ethnic identity exploration. The overall test showed a significant difference, Wilk's Lambda = .95, $F (4, 379) = 1.37$, $p < .01$; however, the only significant univariate test was for ethnic identity exploration, $F (1, 382) = 7.89$, $p < .01$; students who participated reported higher levels of ethnic identity exploration than those who did not participate. In addition, comparisons of participants with non-participants on gender,

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[1]In this study, we use the term Latino to refer to individuals "whose origins can be traced back to Spanish-speaking regions of Latin America, including that of the Caribbean, Mexico, Central America, and South America" (Flores et al., 2002, p. 83).

generation status, and SES level, using χ^2 analysis, showed that participants were more likely than non-participants to be low-SES (χ^2 (2) = 20.83, $p < .01$), but the two groups did not differ on gender or generation status.

Participants were contacted again in the spring quarter of their first year, the fall and spring quarters of their second year, and the fall of their third year, to complete follow-up surveys. Participants were compensated $75 for participating in the first year and $100 for participating each year thereafter. Of the 123 students who participated in the longitudinal study in the fall of year 1, 67 (54%) were still participating in the study in the fall of the third year. Of the 56 students no longer in the study, 25 (45%) dropped out because they were no longer enroled in any college or university; the remaining participants were dropped from the study because they were unable to complete their surveys, generally due to time constraints.

Measures

All instruments were administered in English and pilot tested for use with ethnic minority first generation college students. On the basis of focus group interviews, existing instruments were modified and new instruments developed (as described below). The revised instruments were pilot tested in a study of 800 incoming freshmen, and all measures were revised on the basis of the pilot data.

A demographics questionnaire was used to obtain information on ethnicity, age, gender, place of birth, number of years in the US, and parental education, income, and occupation. High school and college GPA (grade point average) were collected from official university records for a total of 8 time points (GPA from high school; fall, winter, and spring of years 1 and 2; and fall of year 3).

SES was indexed by participant reports of their parents' level of education and occupational status. Parental education was based on student reports of how of much schooling their parents completed, ranging from "none to completed elementary education," "some secondary education," "completed secondary education" to "some college, including technical school and junior college." Student reports of their parents' occupations were coded into their following four categories: unskilled (e.g. farm labour, food service, janitor, factory work), skilled (e.g., technician, hairdresser, electrician), white collar (e.g. office worker, salesperson) and professional (e.g., doctor, lawyer, teacher). In all cases, the higher parents' education or occupation level was used. The level of educational attainment and occupation status were used to create three SES categories: Very low SES indicated that one or both parents had unskilled occupations and/or had completed no more than some high school education; moderately low SES indicated that one or both parents had skilled occupations and/or had no more than a high school education; and medium SES indicates that both parents had white-collar or professional occupations and/or had completed high school or at least one parent had some college education.

Parental support of education was assessed at four time points (fall and spring of years 1 and 2). A parental support scale was created to assess participants' perceived parental support, encouragement, and understanding regarding college and the demands of college. Participants were asked to respond, on a 5-point scale, ranging from 1 (*not at all true*) to 5 (*very true*), to six statements about their parents' attitudes about their education (e.g. "My parents/family understand that I often have to study instead of helping out at home," "My parents/family give me a lot of encouragement for attending school," and "My parents/family are willing to

make sacrifices and help me out financially''). The estimated across-time reliability (defined as the ration of true to total variance) of parental support was .92 (for a discussion, see Bryk & Raudenbush, 1992, pp. 43–44).

Family interdependence was measured in the fall of year 1, with a 10-item scale used in prior research to assess the cultural values of interdependence, closeness, and obligations within the family (Phinney, Kim Jo, Osorio, & Vilhjalmsdottir, 2005). The measure consists of 10 items that are rated in importance on a 5-point scale, ranging from 1 (*not at all important*) to 5 (*very important*). Sample items included, ''To satisfy my family's needs even when my own needs are different,'' ''To spend time with my family,'' and ''To consult my parents before making decisions.'' A maximum-likelihood factor analysis with oblimin rotation revealed one distinct factor that explained 63% of the total item variance in family interdependence.[2] The reliability of the 10-item scale was $\alpha = .84$.

Ethnic Identity was measured in the fall of year 1, with the Multigroup Ethnic Identity Measure (Phinney, 1992; Roberts et al., 1999). The measure assesses two components of ethnic identity development: *exploration* or the extent to which individuals have explored the meaning and implications of their ethnicity (e.g., ''I have often talked to other people in order to learn more about my ethnic group''), and *commitment* or the extent to which individuals affirm their sense of belonging to their group (e.g. ''I have a clear sense of my ethnic background and what it means for me''). Responses are on a 5 point scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). In present study, the exploration and commitment components of ethnic identity were moderately correlated ($r = .69$, $p < .01$). The two components, thus, were combined into a single scale that ranges from low scores indicating a weak ethnic identity, characterized by little interest in, or understanding of, one's ethnicity, to high scores indicating a strong, secure (''achieved'') ethnic identity based on knowledge and commitment.

Because prior research using the MEIM with other ethnic minority populations have suggested that it may be best conceptualized as a multidimensional construct (e.g., Lee, 2005; Lee & Yoo, 2004), we tested the validity of a congeneric (Joreskog, 1970), one-factor measurement model of ethnic identity in our sample of Latino college students. Specifically, the validity of the one-factor solution was assessed with confirmatory factor analysis models with maximum-likelihood estimation. To assess goodness of fit, we examined the χ^2, comparative fit index (CFI) and standardized root-mean-square residual (SRMR) statistics. Hu and Bentler (1998) noted that SRMR is less sensitive to distribution and sample size, and recommended its use in combination with CFI when using maximum-likelihood estimation. CFI values greater than .95 and SRMR values less than .05 are typically considered to indicate that a measurement model is adequately parameterized (Hu & Bentler, 1998), although values as low as .90 and as high as .10, respectively, are acceptable. The one-factor model yielded a large and significant $\chi^2(15, N = 120) = 25.34$, $p < .001$. The SRMR was .04. The CFI, which is less sensitive to sample size, was also large (.96), indicating that the one-factor model provided an adequate fit to the data. The internal consistency reliability of the MEIM in the current study alpha = .91. Therefore, we concluded that a one-factor model provided good fit in this sample.

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[2]These results were nearly identical to the results obtained when using principal components, although the maximum likelihood method is typically preferred for such uses.

Results

Descriptive findings

Preliminary analyses were conducted to obtain descriptive statistics and correlations among the study variables. We wanted to present the within-person correlations among the variables measured repeatedly (i.e., GPA, parental support for education). This was accomplished by first centreing these variables within each person to exclude the between-person variance. Next, we used all observations from the variables that were measured over time and used significance tests with the number of participants to adjust for the within-person dependence across quarters. Table 1 shows correlations among the key study variables, along with their means and standard deviations. Overall, GPA was positively correlated with SES ($r = .22$, $p < .05$), family interdependence ($r = .23$, $p < .05$), parental support for education ($r = .21$, $p < .05$), ethnic identity ($r = .18$, $p < .05$) and negatively correlated with gender ($r = -.20$, $p < .05$), with males showing a slight downward trend in GPA across the study period.

Overview of multilevel modelling analyses

For GPA, there were eight time points available (high school GPA, fall, winter, and spring quarters of years 1 and 2, and fall of year 3). Parental support of education was collected a total of four times (fall and spring of years 1 and 2). Thus, for these two variables, within-person effects can be estimated. All between-person, demographic (SES, gender, generational status) and cultural (family interdependence, ethnic identity), variables were collected in the fall of the first year.

We estimated between- and within-person effects using multilevel random coefficient modelling (MRCM), also known in different modelling contexts as hierarchical linear modelling, mixed effects modelling, and random coefficients modelling (Hox, 2002; Raudenbush & Bryk, 2002). The flexibility of MRCM provides a number of advantages. First, MRCM is appropriate for longitudinal data. In the current study, the data have a hierarchical structure with up to eight within-person observations nested within each of 123 participants. Second, MRCM does not

Table 1
Descriptive statistics and correlations among study variables

Variable	*M*	SD	1	2	3	4	5	6	7
1. Gender			—						
2. SES			−0.01	—					
3. Age	17.96	0.63	−0.12	−0.11	—	—			
4. GPA	2.65	0.59	−0.20*	0.22*	−0.12				
5. Family interdependence	3.51	0.71	−0.21*	0.20*	0.10	0.23*	—		
6. Family support for education	4.18	0.75	0.01	−0.08	0.05	0.21*	0.22*	—	
7. Ethnic identity	3.75	0.71	0.08	0.21*	0.04	0.18*	0.11	0.19*	—

Note: $N = 123$ for person-level correlations. Correlations based on GPA and family support for education used aggregate values. Gender is coded as $0 = $ female, $1 = $ male. SES is coded as $0 = $ low, $1 = $ high.
*$p < .05$.

require that all individuals be measured at all occasions; we can use the data from participants who entered the study after it began and from participants who have missing data for some occasions of the study. Third, in MRCM, reliable units of observation contribute more to the estimation of parameters than less reliable units, a process known as precision weighting (for a discussion, see Bryk & Raudenbush, 1992, pp. 32–57). By separating true and error variance, MRCM, thus, provides more accurate and robust estimates of parameters than OLS analyses. Finally, a multilevel modelling approach allows us to estimate between- and within-person effects simultaneously. For example, we can examine the separate and independent within-person effects of parental support for education on GPA, and then test whether between-person variables (e.g. SES) moderate these effects. Within-person effects address links between variables at the intra-individual level and yield slope and intercept coefficients to index these relations (e.g., "On occasions in which a person reports high parental support, do they also evidence higher levels of GPA?"). In comparison, between-person effects address the relation between intra-individual coefficients and inter-individual variables (e.g. "Over time is GPA on average higher among individuals high rather than low in SES?"). In the current investigation, we also asked questions that assessed the interaction across within- and between-person effects (e.g., "Is the within-person association between parental support and GPA different in individuals who are high as opposed to low in SES?").

We developed MRCM equations predicting GPA to test our hypotheses. Following recommendations by Bryk & Raudenbush (1992), all within-person variables were centred on the individuals' means, and all between-person variables were centred on sample means. Eq. (1) describes the simplest within-person (i.e. Level 1) model, specifying that GPA for person j on occasion i is a function of his or her mean level of GPA (β_{0j}) and a random residual component (e_{ij}):

$$\text{GPA}_{ij} = \beta_{0j} + e_{ij}. \tag{1}$$

This *unconditional means model* (Singer & Willett, 2003) fits only an overall mean and the variance around that mean across all persons and measurement occasions. The unconditional model provides a benchmark of within-person variance that we can use to judge successive models (Bryk & Raudenbush, 1992). The between-person (i.e., Level 2) model is illustrated in Eq. (2). Here, individuals' Level-1 coefficients (β_{0j} or average GPA) are regressed on the between-person variable SES (γ_{01}), and a between-persons error term (u_{0j}):

$$\beta_{0j} = \gamma_{00} + \gamma_{01}\text{SES} + u_{0j}. \tag{2}$$

In Eq. (2), (γ_{01}) can be interpreted as the between-person effect of SES on average levels of GPA.

To assess the within-person associations, the Level-1 model (Eq. (1)) can be augmented to include time-varying predictors. Previous studies have generated data on the between-person associations between parental support and academic adjustment among Latinos (e.g. Rodriguez et al., 2003; Schneider & Ward, 2003). Certainly, these data are useful for establishing that Latino students who report more parental support do better academically than Latinos who report less support. However, they do not address the question of whether high parental support occasions are accompanied by better academic outcomes than are low support occasions. The multilevel approach used in the current study allows for examination of longitudinal within-persons

variation in the strength and direction of these within-person associations. Eq. (3) shows GPA as a function of parental support:

$$\text{GPA}_{ij} = \beta_{0j} + \beta_{1j}\,\text{parental support}_{ij} + e_{ij}, \tag{3}$$

where GPA_{ij} represents the amount of GPA on occasion i for person j. Because we centred our within-person variables, β_{0j} represents person j's predicted level of GPA on an occasion of average parental support; β_{1j} is the within-person slope of the parental support-GPA relationship for person j, and e_{ij} is a within-person error or residual term.

To assess the moderating effects of SES on the within-person associations between parental support and GPA, Level-1 slopes were regressed on the SES variable. Eq. (4) shows the parental support-GPA association as a function of SES and a between-persons error term (u_{1j}):

$$b_{1j} = \gamma_{10} + \gamma_{11}\text{SES} + u_{1j}. \tag{4}$$

In Eq. (4), (γ_{10}) can be interpreted as the predicted value of the parental support-GPA association at average levels of SES; (γ_{11}) can be interpreted as the partial relationship between SES and the parental support-GPA relationship. Following, Singer and Willett (2003) the above within- and between-person equations can be solved simultaneously, and expressed in a single equation as follows:

$$\begin{aligned}\text{GPA}_{ij} = {} & \gamma_{00} + \gamma_{01}\text{SES} + \gamma_{10}\,\text{parental support} \\ & + \gamma_{11}(\text{SES} \times \text{parental support}) + u_{0j} + u_{1j} + e_{ij}. \end{aligned} \tag{5}$$

Eq. (5) illustrates how GPA for a given person and occasion is function of within- and between-person variables, as well as within- and between-person errors. To assess the effects of time and its interaction with parental support, as well as higher order interactions with SES, ethnic identity, family interdependence, and parental support variables, Eq. (5) was expanded to include the various two- and three-way interactions terms. Finally, we controlled for a number of factors (i.e. gender, generational status) previously shown to influence the educational outcomes of Latino college students (Mena, Padilla, & Maldonado, 1987; Rodriguez et al., 2003).

The variability in GPA scores can be decomposed into a between-person source of variance (i.e., the differences between persons in their mean levels) and a within-person source of variance (i.e. the differences within persons in the dispersion of the scores over time). Together, these two sources of variance make up the total amount of variation across individuals and occasions, and examining the proportion of each to the total is very useful. We first examined an *unconditional means model* (Eq. (1)), which allowed intercepts (mean levels) to vary randomly. This analysis estimated the mean level of GPA to be 2.65. The estimated within-person variance of GPA (the variance of e_{ij}) was .49, and the estimated between-person variance (the variance of u_{0j}) was .83. The estimated within-person reliability (defined as the ration of true to total variance) of GPA was .94 (for a discussion, see Bryk & Raudenbush, 1992, pp. 43–44). These data indicated that GPA scores were reliable and that there was sufficient variability at the within-person level to allow for the possibility of modelling intra-individual relationships.

We next examined how average levels of GPA varied as function of between-person covariates (i.e., gender and generational status) and time (in quarters) from the first wave of measurement. Next, we probed the extent to which GPA varied as a function of SES (Eq. (2)). We regressed the Level-1 intercept (i.e. average level of GPA) on SES. We then regressed GPA scores on ratings of

parental support (Eq. (3)). Finally, we examined how the Level-1 slopes (within-person parental support-GPA association) varied as a function of SES, ethnic identity, and family interdependence variables. The final parameter estimates and standard errors are summarized in Table 2.

The main effects for parental support for education ($b = .279$, SE $= .082$, $p < .001$), SES ($b = .232$, SE $= .043$, $p < .01$), ethnic identity ($b = .249$, SE $= .093$, $p < .01$), and family interdependence ($b = .227$, SE $= .052$, $p < .01$) were all positive and significant, indicating that levels of GPA varied as a function of these predictors. These coefficients are functionally equivalent to unstandardized regression coefficients and can be interpreted as such. Thus, for every unit increase in parental support, for example, mean levels of GPA increased .28 units. Examination of the random parameter estimates indicated that parental support accounted for 34% of the intra-individual variance in GPA, corresponding to a within-person correlation of .58 (for a discussion, see Bryk & Raudenbush, 1992, p. 65).

Our main hypothesis was that both *baseline resources* (i.e., strong family interdependence and high ethnic identity) and *intervening processes* (i.e. persistent parental support for education) would serve to buffer the effects of low socioeconomic standing among Latino college students. Table 2 shows that individual slopes relating parental support to GPA were predictable from between-person differences in SES ($b = -.246$, SE $= .024$, $p < .01$). To examine the form of the interaction, we used Aiken and West's (1991) procedures to generate separate parental support-GPA regression lines for individuals high (one standard deviation above the mean) and low (one standard deviation below the mean) on SES. A planned comparison of the magnitude of the slopes indicated that the parental support-GPA slopes were significantly higher among individuals

Table 2
GPA parameter estimates and standard errors

	Estimates	SE
Intercept	2.591	.09
Time	−.225*	.06
Gender	−.213*	.05
Generational status	.108	.07
Parental support	.279**	.08
SES	.232*	.04
Ethnic identity	.249*	.09
Family interdependence	.227*	.05
Parental support × SES	−.246*	.02
Parental support × ethnic identity	.238*	.05
Parental support × family interdependence	.181	.08
SES × ethnic identity	−.235*	.01
SES × family interdependence	−.021	.16
SES × parental support × ethnic identity	−.029	.13
SES × parental support × family interdependence	−.047	.08

Note: gender, generational status, ethnic identity, SES, family interdependence are between-person variables, mean-deviated over the sample. Parental support is deviated about each student's mean.
*$p < .01$.
**$p < .001$.

low ($b = .259$, SE $= .014$, $p < .01$) compared to those high ($b = .03$, SE $= .027$, ns) in SES, $\chi^2(1) = 5.25$, $p < .01$ (see Fig. 1).

In addition, ethnic identity also interacted with low SES to weaken its effect on GPA ($b = -.235$, SE $= .014$, $p < .01$). Thus, for every unit decrease in SES, the ethnic identity-GPA slope increased .24 units. Examination of the random parameter estimates indicated that inclusion of the interaction between ethnic identity and SES resulted in a 19% reduction of intra-individual variance in GPA, corresponding to a within-person correlation of .44. As shown in Fig. 2, the effect of ethnic identity on GPA was most pronounced for those low ($b = .262$, SE $= .018$, $p < .01$) rather than high ($b = .07$, SE $= .019$, ns) in SES, $\chi^2(1) = 5.82$, $p < .01$ in. Our MLM analyses also revealed significant cross-level interactions between ethnic identity and parental support. Table 2 shows that the within-person parental support-GPA association was predictable from individual differences in ethnic identity ($b = .238$, SE $= .052$, $p < .01$). Finally, although family interdependence demonstrated a positive main effect on GPA ($b = .227$, SE $= .047$, $p < .01$), contrary to expectations, individual differences in family interdependence did not lessen the impact of low SES on the GPA levels of Latino students in the current sample ($b = -.021$, SE $= .16$, ns).

Discussion

A mass of developmental evidence suggests that socioeconomic disadvantage and associated risks have inimical effects on children's cognitive, social, and emotional development (Brooks Gunn, Klebanov, Liaw, & Duncan, 1995; Garmezy, 1993; Luthar, 1999). Into this environment of vulnerability and adversity, many ethnic minority youth are faced with a formidable developmental task. They must find ways of internalizing representations of self-worth that are both positive and constructive in settings in which they may be susceptible to prejudice and discrimination (cf. Padilla & Ruiz, 1973; Romero & Roberts, 2003). They must develop a sense of basic trust and safety with caretakers and teachers who may hold negative perceptions of their backgrounds (Lopez, 1995; McWhirter, 1997). And they must develop the capacity for
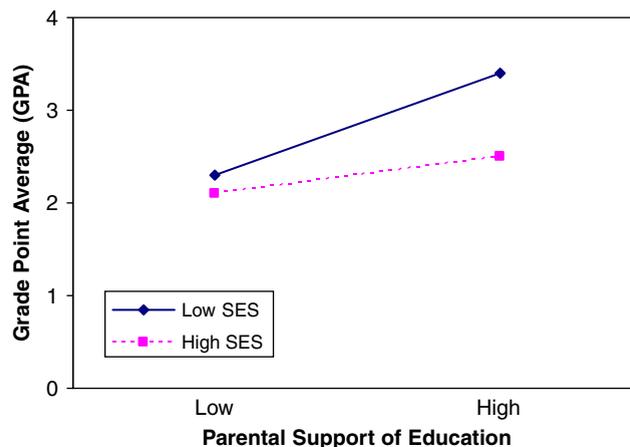

Fig. 1. Relationship between parental support of education and grade point average (GPA) as a function of socioeconomic status (SES). High and low SES values were defined as one standard deviation from the mean.
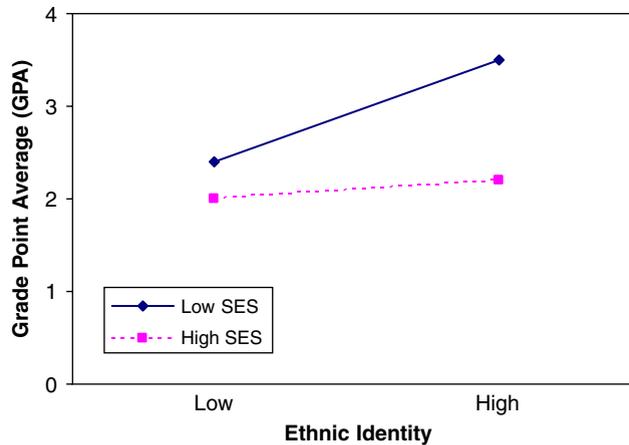
Fig. 2. Relationship between ethnic identity and grade point average (GPA) as a function of socioeconomic status (SES). High and low SES values were defined as one standard deviation from the mean.

self-initiative and competence in an environment in which many of their peers have failed or effectively dropped out (Davison Aviles, Guerrero, Barajas Howarth, & Thomas, 1999; Martinez et al., 2004).

Despite such challenges, many ethnic minority youth are able to achieve positive developmental outcomes (Lerner et al., 2002; Szalacha et al., 2003). In the case of Latino college students, the results of the current study converge on two main conclusions: Academic achievement is linked both to individual- and family-level influences. When present, these influences appear to be especially important to the academic success of Latino students who are low in SES. The results of our multilevel analyses confirmed our primary hypotheses. At both the between- and within-person levels, individual- and family-level factors were positively related to academic achievement. Over time, persistent levels of parental support of education were accompanied by elevations in GPA performance. This result is in keeping with the robust relationship between parental support and college adjustment documented in prior research with Latino students (Arellano & Padilla, 1996; Ceballo, 2004; Schneider & Ward, 2003). The current findings, however, bring such relationships into the realm of socioeconomic inequalities, suggesting that the presence of persistent parental support may be particularly important in understanding the academic resilience of Latino students who are low in socioeconomic standing. In contrast, the absence of such familial supports may be part of understanding the academic underachievement of Latinos at the low end of the socioeconomic hierarchy (Lopez, 1995; Vasquez, 1982).

At the between-person level, Latino students who reported greater levels of ethnic identity and family interdependence evidenced higher academic achievement. Noteworthy was the moderating effect of ethnic identity. The slope defining the ethnic identity-GPA association was steeper among Latino students who were very low in socioeconomic standing. This finding converges with prior cross-sectional studies suggesting that compared with those low in ethnic identity, highly ethnically identified Latinos are, in general, better adjusted to college (Ethier & Deaux, 1994; Phinney & Alipuria, 1990). Importantly, the results also suggest that Latinos high in ethnic identity are more likely to capitalize on ongoing parental supports to excel academically (Cabrera & Padilla, 2004; Schneider & Ward, 2003). That these findings hold, even after controlling for

variables thought to influence these relationships (i.e., gender, generational status), is also noteworthy.

Contrary to expectations, family interdependence did not buffer the effects of SES on academic achievement. Instead the results imply that family interdependence may serve a promotive rather than protective role. This interpretation is concordant with suggestions by Conrad and Hammen (1993), who argued that in cases where the data fit a main effects model in which a factor is equally beneficial for those exposed and not exposed to the risk, it may be more appropriate to use the term *resource* factor rather than *protective* factor. Taken together, the above findings suggest that it is the dynamic interplay between individual and family factors that provides substantive insight into the role of resilience among Latinos college students (Arellano & Padilla, 1996; Cabrera & Padilla, 2004).

A number of limitations of this research warrant comment. Following, we describe notable caveats, as well as issues that might profitably be considered in future research with ethnic minority groups. First, from a social policy perspective (Luthar & Cicchetti, 2000), it is important to clarify that our interest in resilience at the low end of the socioeconomic hierarchy is not to diminish problems of socioeconomic disparities in higher education (Garcia & Thompson, 1999) or the serious risk conditions that are built into the warp and woof of enduring socioeconomic strains (Lynch, Kaplan, & Shema, 1997), but rather to probe how, in the face of them, some Latino students manage to do remarkably well (Arellano & Padilla, 1996; Cabrera & Padilla, 2004). Seen from this perspective, socioeconomic inequalities may compromise academic achievement, not just because they increase the likelihood of negative experiences for those in disadvantage statuses, but also because they may foreclose vital opportunities for positive experience (e.g., quality familial relations, ethnic identity achievement). We argue that the presence of such experiences may afford protection for Latino college students who lack socioeconomic advantage. The absence of such resources, in turn, may provide potentially powerful explanations for class gradients in maladjustment and underachievement (cf. Martinez et al., 2004; Masten et al., 1999).

Second, we focused exclusively on Latino students in the current study, and as such, the findings are not directly generalizable to other underrepresented student populations. Even as we acknowledge this limitation, however, it should be emphasized that most studies of ethnic minorities in higher education treat Latinos as a homogenous group (see Umana Taylor & Fine, 2001), despite possible variations in the degree to which Latinos are actually affected by various risk processes (Quintana et al., 1991). Thus, we underscore the need for longitudinal data on different Latino subgroups. Of particular importance, we argue, is the need to track cumulative influences of both advantage and adversity in describing various life pathways to resilience (Ryff & Singer, 2003).

Third, we used GPA as a marker of academic achievement in the current study. In future studies with Latino college students, achievement should be defined more broadly (e.g. teacher ratings, achievement tests, parental interviews) to encompass multiple domains of functioning (e.g., academic, conduct, social, emotional). These issues also highlight the potential limits or possible *hidden costs* that may accompany academic resilience. Several lines of evidence primarily from studies of childhood psychopathology (Luthar, 1991; Werner & Smith, 2002) suggest that children labelled as resilient may perform well in certain domains (e.g. academic competence, prosocial behaviour), but fare less well in others (e.g., social and emotional competence). Evidence

of ontogenic variability across selective life domains has also been documented among older adults adapting to various age-related losses and transitions (Baltes, 1997; Baltes & Baltes, 1990). Future research should, therefore, extend these findings by examining the extent to which parental support and identity processes within Latino populations, when chronically mobilized during times of stress, exact adaptational tolls on other areas of functioning.

Finally, although we focused on various individual- and family-level variables as potential *moderators* of SES, it may be that socioeconomic disadvantage is a distal risk factor whose effects are *mediated* by more proximal risk conditions such as language barriers, acculturative stress, parenting behaviours, family structure, and the broader social and community networks within which Latino families are embedded (Marin, 1993; Padilla, 1995). Thus, the next important step for resilience research with ethnic minority groups is to shift the focus from predicting adaptive outcomes for those faced with adversity to studying mechanisms by which these outcomes are achieved. The larger literature on resilience suggests that resilient qualities do not emerge without the scaffolding of family support (Rutter, 2002; Werner & Smith, 2001). Although the importance of *familismo* is well recognized in ethnic minority research (Keefe et al., 1978; Sabogal et al., 1987; Szalacha et al., 2003), we underscore the need for richer formulation, both conceptually and empirically, of the familial routes through which resilient adaptation occurs.

In summary, although this body of work is still small, there are numerous avenues for enriching extant research on resilience in ethnic minority groups. To have a knowledge base upon which to build effective intervention programs for underrepresented groups at risk, it will be necessary to build understanding of what the multiple pathways are that lead to resilience, how these pathways may change, and what can be done to stop or forestall maladjustment and decline. We think efforts to understand these issues should represent a high priority for future research.

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