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Do Peers Contribute to the Achievement Gap between Vietnamese-American and Mexican-American Adolescents?

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Abstract

Documented associations between academic and social functioning have been inconsistent. These discrepancies may reflect the moderating role of sociocultural context. In this study, we examined ethnicity and gender as moderators of this relation. We collected peer nominations, GPA from school records, and self-report questionnaires for 519 Vietnamese-American and Mexican-American middle school students (mean age = 12.7 years). Using general linear modeling, we found that academic and social functioning were more strongly and positively linked for Vietnamese-Americans relative to Mexican-Americans, and for girls relative to boys. We also examined group differences in achievement values, and found that Vietnamese-Americans were more likely to admire and be friends with high-achieving peers. The results suggest that peers provide one context in which ethnic and gender differences in achievement values emerge, and interventions aimed at reducing the achievement gap may benefit from incorporating a focus on peers.

Research on the link between academic achievement and social functioning has yielded inconsistent findings. On one hand, unpopular or rejected students may be susceptible to depression (Hawker & Boulton, 2000), anxiety (e.g., Craig, 1998), and loneliness (Boivin, Hymel, & Bukowski, 1995). These forms of distress may interfere with classroom learning and lead to declines in achievement (Graham, Bellmore, & Juvonen, 2003; Schwartz, Gorman, Nakamoto, & Toblin, 2005). Moreover, unpleasant social experiences can motivate school withdrawal (Bellmore, 2011; Ladd, Kochenderfer, & Coleman, 1997). On the other hand, researchers have posited that popularity with peers and achievement may be fundamentally incompatible in many American schools (Schwartz, Gorman, Nakamoto, & McKay, 2006; Steinberg, Dornbusch, & Brown, 1992). These perspectives hold that adolescent peer cultures devalue achievement, and peers may express disapproval when students study, participate in class, or otherwise engage with school (Steinberg et al., 1992).

Considering the Sociocultural Context

The picture may be inconsistent because the link between academic and social functioning is shaped by values that are unique to each peer group. Popularity depends on compatibility with the behavioral orientations of the larger crowd (Brown, Clasen, & Eicher, 1986). In settings that emphasize achievement, then, students who struggle in school may be negatively evaluated by peers (Wentzel & Caldwell, 1997). In other peer cultures, active academic detachment might actually lead to or sustain high status (Schwartz et al., 2006).

Peer sanction for academic excellence has been proposed as a contributing factor in ethnic/racial gaps in achievement. In an influential ethnography, Fordham and Ogbu (1986) suggested that African-American adolescents adapt to inequities in the U.S. economic system by developing an “oppositional culture” that encompasses a devaluing of academic effort. Education is seen as “White people’s domain” and African-American students who exert themselves academically risk being accused of “acting White.” African-American youth use academic behaviors to draw boundaries between in-group and out-group members, and sanction studying as group-incongruent behavior (Carter, 2003).

This type of social sanction for achievement is also consistent with stereotype threat theory. For Hispanic-Americans and African-Americans, whose academic ability is negatively stereotyped, the awareness of this stereotype can evoke affective arousal that interferes with test performance (Steele, 1997). In contrast, increasing the salience of race can enhance performance for positively stereotyped groups, such as Asian-Americans (Armenta, 2010). Over time, stereotype threat pressures members of negatively stereotyped groups to disidentify with, or disengage from, academic domains.

Both oppositional culture and stereotype threat theories predict that certain demographic groups would experience peer sanction for academic effort. Although ethnographic evidence has supported this hypothesis among Mexican-American youth (e.g., Portes & Zhou, 1993), later quantitative tests largely failed to support the theory (Cook & Ludwig, 1997; Lundy & Firebaugh, 2005; but see Fuller-Rowell & Doan, 2010, for an exception).

Multiple Dimensions of Peer Relationships

Prior research on this topic has treated social functioning as a unidimensional construct, although peer relationship researchers have emphasized the need for a multifaceted perspective that takes into consideration perceived popularity, acceptance/rejection by the group (i.e., sociometric status), and friendships. Perceived popularity is a reputational construct denoting dominance in the peer hierarchy (see Mayeux, Houser, & Dyches, 2011, for a review). Social acceptance/rejection reflects the degree to which a student is liked or disliked by the group. These dimensions of social experience are conceptually related, but are not synonymous (Mayeux et al., 2011). Some highly accepted adolescents do not occupy a preeminent position in the peer group, and some popular students are not especially well-liked. Although academically-oriented adolescents can be well-liked by peers, they are not always popular (Steinberg et al., 1992). Friendship, a separate dimension of social functioning, is a reciprocated dyadic relationship that includes features such as warmth, intimacy, and support (Newcomb & Bagwell, 1995). Although popularity and social acceptance can function as affordances for friendship (Rose, Swenson, & Carlson, 2004), friends can predict adjustment independent of social acceptance or popularity (Litwack, Aikins, & Cillessen, 2012). Adolescents who do well in school tend to have dense networks of friends (Wentzel, Barry & Caldwell, 2004). Not surprisingly, the nature of the link between friendship and classroom performance is dependent on the behavioral characteristics and academic orientation of a student’s friends (Kindermann, 2007; Ryan, 2001).

Gender Differences in Academic Outcomes

Although explicit tests are scarce, there has been a repeated suggestion in the oppositional culture literature that masculine ethnic identity stereotypically encompasses images of being “tough” and “cool” and precludes behaviors that would lead to academic success (Oyserman, Brickman, Bybee, & Celious, 2006). This is consistent with evidence indicating gender differences in attitudes and behavioral engagement favoring girls (Lundy & Firebaugh, 2005; Ryan, 2001). Students themselves characterize attending in class and

academically-oriented behaviors as feminine (Heyman, 2001). Moreover, negative achievement stereotypes and academic disidentification seem to be more prevalent for boys than for girls among Hispanic-Americans (Graham, 2001; Hudley & Graham, 2002; Osborne, 1997). Accordingly, males may be more susceptible to social sanctions for academic success than female students. Some high-achieving African-American males in Fordham and Ogbu's (1986) ethnography were questioned by peers about their sexual orientation, implying that studying is viewed by these peers as effeminate. Among all demographic groups, low-income males run the greatest risk of being teased as "nerds" for trying hard in school (Farrell, 1994).

Measuring Context

Another prediction of oppositional culture theory is that economically marginalized youth would value education less and evaluate achievement less positively. Graham, Taylor, and Hudley (1998) demonstrated ethnic/racial differences in achievement values consistent with oppositional culture theory using a peer nomination procedure. They asked students who they admired, respected, and wanted to be like. Hispanic boys were more likely to nominate low-achieving peers, whereas Hispanic girls and European-American boys and girls tended to nominate high-achieving peers.

Values may also be related to the attributes of peers adolescents befriend. If there are ethnic/racial differences in achievement and in achievement values, one might expect that the characteristics of students' friends would vary systematically between groups. Although a literature on the role of ethnicity in friendship is emerging (e.g., Kawabata & Crick, 2008; Newgent, Lee, & Daniel, 2007), this work has focused on the frequency and correlates of cross-ethnic friendships. Almost nothing is known about how ethnicity is associated with the attributes of youth students befriend.

The Current Study

The objective of the current study was to test predictions of oppositional culture theory in a sample of Mexican-American and Vietnamese-American middle school students. We expected that the association between academic and social functioning would be more positively linked for Vietnamese-American adolescents and for girls, relative to Mexican-Americans and boys. We also hypothesized an ethnicity by gender interaction, with the strongest positive correlation for Vietnamese-American girls, and the most negative correlation for Mexican-American boys.

We also sought to move beyond testing ethnic/racial differences in the link between academic and social functioning to assessing the values presumed to underlie variations in peer culture. Accordingly, we examined ethnic and gender differences in nominations of admired peers. We expected that Vietnamese-Americans and girls would value higher-achieving peers, compared to Mexican-Americans and boys. Again, we hypothesized an ethnicity by gender interaction, such that Mexican-American boys would admire the lowest-achieving, and Vietnamese-American girls would admire the highest-achieving peers. Additionally, we examined how ethnicity is related to the achievement level of students' friends, above and beyond the known tendency for youth to befriend those like themselves. Our theoretical presumption is that the ethnic and gender differences in students' achievement values would manifest in the attributes of peers students befriend. We expected that Vietnamese-American students would have higher-achieving friends than Mexican-American students, and girls would have higher-achieving friends than boys. Again, we expected ethnicity and gender to interact, such that Vietnamese-American girls would be most likely, and Mexican-American boys least likely, to have high-achieving friends.

Our study offers a number of methodological advances over earlier work. Previous quantitative tests of oppositional culture theory have all relied exclusively on self-reports. Using self-reported data to study ethnic/racial differences in the link between academic and social functioning is problematic because students with higher self-esteem are more likely to report positive outcomes in both domains. Hispanics report higher self-esteem than Asian-American students (see Twenge & Crocker, 2002, for a review). Furthermore, the reliability of self-reported grades varies between ethnic/racial groups (Cook & Ludwig, 1997; Shaw & Mattern, 2009). In addition, the use of unidimensional assessment of social functioning in prior work is problematic if peer sanctions for achievement are reflected in some aspects of social experience but not others. These systematic sources of error may have obscured the capacity to detect ethnic/racial differences in previous studies.

Another methodological strength is our broad-based assessment of potential confounders. Across ethnic groups, academic outcomes tend to favor more recently immigrated youth, those coming from two-parent, English-speaking families of higher socioeconomic status (SES), and students with a developed sense of ethnic identity (Fuligni, Witkow, & Garcia, 2005; Ginther & Pollak, 2004; Sirin, 2005). Assessment of these background elements can increase our confidence that detected ethnic/racial differences are due to cultural factors and not related demographic variables.

Method

Participants

We recruited participants from a middle school with sizeable numbers of Mexican-American and Vietnamese-American students in order to identify a multiethnic sample that would minimize other demographic differences between the groups. This middle school was located in a semi-urban, lower middle class neighborhood in southern California (U.S. Census Bureau, 2000), with 72% of students receiving free or reduced-price lunch programs. According to student report, 26.8% of fathers and 31.8% of mothers had less than a high school education, 29.4% of fathers and 30.5% of mothers graduated from high school, and 21.5% of fathers and 19.5% of mothers completed college. Typical of working class neighborhoods, nearly all fathers (96.0%) and 75.4% of mothers were employed outside the home, with most working at non-professional jobs.

All 921 children in the school (6th-, 7th-, and 8th-graders) were invited to take part in the study. Of these, 79.3% ($N = 730$; mean age of 12.7 years) returned parental consent, assented to participate, and attended school on the days of data collection.

The self-reported ethnic/racial composition of participants was 46.3% Vietnamese-American, 3.6% other Asian, 25.9% Mexican-American, 1.9% other Hispanic, 1.8% non-Hispanic White, 0.3% African-American, 18.2% Mixed, and 2.2% not classified. Given significant heterogeneity in academic outcomes among Asian-American and Hispanic subgroups (Harris, Jamison, & Trujillo, 2008), we focused our analyses on Mexican-American (109 girls, 74 boys) and Vietnamese-American students (170 girls, 166 boys).

Procedure

Trained graduate students and undergraduate assistants distributed English, Spanish, and Vietnamese versions of parental consent forms to students one month before data collection. Students in classrooms where 80% or more returned signed forms (regardless of whether consent was positive or negative) received a pizza party, resulting in signed forms from 84.8% of students. Of the returned forms, 91.4% indicated positive consent. On data collection day, research staff read aloud the student assent form and asked students who

were willing to participate to sign the forms. Two students with positive consent declined assent.

Questionnaires were group-administered in students' classes during one class period lasting 55 minutes near the end of spring semester. Two administrators were assigned to each classroom. One read the standardized instructions and each questionnaire item aloud, while the other walked around to answer questions.

Assessment of Social Functioning

Adolescents completed a peer nomination inventory. Students were given a roster and asked to nominate up to nine peers who fit a series of descriptors. We followed the recommendations of Bellmore, Juvonen, and Jiang (2010) for adaptation of peer nominations, originally developed with elementary school samples, for use with adolescents. Each student was provided with a list of 50 random grade-mates to use in completing the peer nominations. The participant's name did not appear on his or her list, and each participant's name appeared on 50 separate lists. The peer nomination inventory included one item assessing each of the below constructs. For later analyses, the number of nominations an adolescent received for each item was standardized within list. Even with single item scales, peer nominations yield reliable and valid estimates, given the large number of reporters per item (Coie, Terry, Lenox, Lochman, & Hyman, 1995).

Popularity. Students nominated peers "who are popular."

Unpopularity. Students nominated peers "who are unpopular."

Social acceptance. Students listed peers they "like a lot."

Social rejection. Students listed peers they "don't like so much."

Number of friends. Adolescents identified their "very best friend" and up to 10 additional "really close friends" from a roster including all participating peers in their grade.

Participants were classified as friends if they reciprocally nominated each other for either item (Schwartz, Gorman, Duong, & Nakamoto, 2008).

Assessment of Academic Outcomes

Achievement value nominations—As part of the peer nomination inventory, students were asked to identify peers that they "admired," "respected," and "wanted to be like" (see Graham et al., 1998). The mean GPA of those nominated for these three items was used as an index of achievement values ($\alpha = .92$).

Friends' GPA—We calculated the mean GPA of students' reciprocated friends.

Grade point averages—GPA was calculated as the mean of students' year-end grades in five academic courses, obtained from school records ($\alpha = .91$).

Assessment of Confounders

Ethnic identity—Participants completed the Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992). We calculated the mean of twelve items (e.g., "I have a strong sense of belonging to my own ethnic group;" $\alpha = .91$) rated from 1 (*not at all true*) to 7 (*very much true*). Higher scores indicate greater identification with one's ethnicity.

Home language—Adolescents rated the use of English and other languages at home on a scale of 1 (*only English*) to 5 (*only another language*).

Generational status—Students identified their own and their parents' birth countries. We considered a student first-generation if they were born outside the U.S. Second-generation students were U.S.-born with at least one foreign-born parent. U.S.-born students with two U.S.-born parents were considered third-generation (see Fuligni et al., 2005).

Family structure—Students indicated whether their father, stepfather, or “similar adult male who provides for their family” and whether their mother, stepmother, or “similar adult female who provides for their family” were present in the home.

Socioeconomic status—Students reported on both parents' occupation and education level using the Hollingshead Four-Factor Index (Hollingshead, 1975). Occupation level was coded from open-ended responses by two trained undergraduate research assistants. Discrepancies were resolved through discussion.

Results

Bivariate Analyses

Two-way analyses of variance were conducted to examine effects of ethnicity (Mexican-American vs. Vietnamese-American), gender (boys vs. girls), and ethnicity by gender interaction on all variables. Given the large number of tests, we interpreted effects against a conservative critical value of .005. Significant interactions were decomposed with Tukey's Studentized Range Tests.

Vietnamese-Americans were more recently immigrated, reported higher SES, and endorsed less well-developed ethnic identity than Mexican-American youth (Table 1). They were also more unpopular but less rejected than Mexican-American students. Vietnamese-American students had higher achievement values, had friends with higher GPAs, and obtained higher GPAs themselves. Girls were involved in more friendships, had friends with higher GPAs, and earned higher GPAs. Significant ethnicity by gender interactions also emerged. Vietnamese-American boys were significantly less popular than Vietnamese-American girls and Mexican-American boys. Mexican-American boys were less unpopular than the other three groups.

Inclusion of Confounders in Regression Models

We examined the correlations between each confounder and each academic and social functioning variable. In inferential regression models (below), we entered a confounder as a covariate if it was correlated with at least one academic or social functioning variable, which included immigrant generation, SES, and ethnic identity.

Gender and Ethnic Differences in the Link between Academic and Social Functioning

For each social outcome (popularity, unpopularity, acceptance, rejection, and friendship), we conducted a separate hierarchical regression. In each model, social functioning was predicted from main effects of confounders (generational status, SES, and ethnic identity), ethnicity, gender, and GPA (Step 1); two-way interactions for ethnicity by gender, ethnicity by GPA, and gender by GPA (Step 2); and three-way interaction for ethnicity by gender by GPA (Step 3). Variables were entered simultaneously at each step; steps were entered sequentially. To reduce multicollinearity, we calculated interaction terms using mean-centered values (see Aiken & West, 1991).

All models were significant. Predictors account for 2% of variance in popularity ($F(6, 382) = 2.23, p < .05$), 6% of variance in unpopularity ($F(6, 382) = 5.24, p < .001$), 7% of variance in social acceptance ($F(6, 382) = 5.82, p < .001$), 6% of variance in social rejection ($F(6, 382) = 5.35, p < .001$), and 14% of variance in number of friends ($F(6, 382) = 11.67, p < .001$). We found a significant two-way ethnicity by GPA interaction in the prediction of popularity, social acceptance, and number of friends (see Table 2). We decomposed significant interactions by calculating simple slopes and intercepts (Preacher, Curran, & Bauer, 2006). Popularity was positively correlated with GPA for Vietnamese-American ($\beta = .30, p < .05$) but not for Mexican-American students ($\beta = .05, ns$). Social acceptance was more strongly associated with GPA for Vietnamese-American ($\beta = .45, p < .001$) than for Mexican-American students ($\beta = .20, p < .001$). Similarly, GPA was more strongly linked to number of friends for Vietnamese-American ($\beta = .57, p < .001$) than for Mexican-American students ($\beta = .29, p < .001$).

We also found a significant gender by GPA interaction for friendship. Follow-up models indicated that GPA was positively associated with friendship for girls ($\beta = .29, p < .001$), but not for boys ($\beta = .03, ns$).

The analyses for unpopularity and social rejection yielded significant three-way ethnicity by gender by GPA interactions. Decomposition of the unpopularity effect revealed that among girls of both ethnicities, unpopularity was negatively linked with GPA ($\beta = -.18, p < .01$, for Mexican-American girls and $\beta = -.48, p < .01$, for Vietnamese-American girls). This association was nonsignificant for both Mexican-American ($\beta = .09$) and Vietnamese-American ($\beta = .14$) boys.

When we decomposed the three-way ethnicity by gender by GPA interaction for social rejection, there was no association between social rejection and GPA for Mexican-American boys ($\beta = -.12, ns$). However, social rejection was negatively linked to GPA for Vietnamese-American boys and girls ($\beta = -.43, p < .01$ and $\beta = -.28, p < .05$, respectively), and for Mexican-American girls ($\beta = -.25, p < .01$).

Gender and Ethnic Differences in Achievement Values

Next, we examined achievement values as predicted by ethnicity, gender, and ethnicity by gender interaction, using hierarchical regression. Achievement values were predicted by confounders, student's GPA, ethnicity, and gender (Step 1); and two-way ethnicity by gender interaction (Step 2).

The overall model was significant, $F(6, 328) = 25.90, R^2 = .31, p < .001$. GPA and ethnicity emerged as significant positive predictors of achievement values (see Table 3). Even with students' GPA and confounders accounted for, ethnicity was associated with achievement values with a medium effect size. The effects of gender and ethnicity by gender interaction were nonsignificant.

Students tended to nominate same-ethnicity peers as those they valued, with 72.8% of nominations made by Mexican-American and 87.9% of nominations by Vietnamese-American students being within-ethnicity. Similarly, achievement value nominations tended to be within-gender, with 77.8% of nominations made by girls and 64.6% of nominations made by boys being within-gender. Because students tended to make within-ethnicity nominations, and ethnicity was correlated with GPA, we examined whether the regression findings described above were attributable solely to the confounding effects of ethnicity.

To distinguish the effects of ethnicity from the effects of achievement level of valued peers, we conducted two separate regressions predicting GPA of Mexican-American and

Vietnamese-American students nominated for value items. In each regression, the GPA of nominated students was predicted by the nominating student's ethnicity. When predicting the GPA of valued Mexican-American students, ethnicity of nominator accounted for 5% of variance in the outcome, $F(1, 102) = 6.77, p < .01$. Vietnamese-American students tended to nominate Mexican-American students with higher GPAs than Mexican-American students did ($\beta = .28, p < .05$). Ethnicity of the nominator also accounted for 7% of the variance in the GPA of valued Vietnamese-American students, $F(1, 112) = 9.98, p < .01$. Again, Vietnamese-American students tended to nominate Vietnamese-American students with higher GPAs than Mexican-American students did ($\beta = .25, p < .01$).

Gender and Ethnic Differences in Friends' GPA

A hierarchical regression similar to the one above was conducted to examine friends' GPA, as predicted by confounders, student's GPA, ethnicity, and gender (Step 1); and ethnicity by gender interaction (Step 2).

The overall model was significant, $F(6, 318) = 60.46, R^2 = .52, p < .001$. Student's GPA, ethnicity, and gender positively predicted friends' GPA (see Table 4). Girls tended to have friends with higher GPAs than boys did. Even with gender, students' GPA, and confounders accounted for, ethnicity was associated with friends' GPA with a medium effect size. Vietnamese-American students had friends with higher GPAs than did Mexican-American students. The interaction between ethnicity and gender was nonsignificant.

Similar to value nominations, friendship nominations were mostly within-ethnicity, with 89.0% of Mexican-American students' friendships, and 93.5% of Vietnamese-American students' friendships being within-ethnicity. Friendships also tended to be within-gender, with 84.2% of girls' friendships and 77.2% of boys' friendships being within-gender. We thus conducted two separate regressions with the GPA of Mexican-American and Vietnamese-American students nominated as friends. In each regression, GPA of friends was predicted by the nominating student's ethnicity. Ethnicity of nominator accounted for 5% of variance in GPA of Mexican-American friends, $F(1, 177) = 10.52, p < .001$. Vietnamese-American students tended to befriend Mexican-American students with higher GPAs than Mexican-American students did ($\beta = .29, p < .001$). Ethnicity of the nominator also accounted for 10% of the variance in GPA of Vietnamese-American friends, $F(1, 295) = 34.38, p < .001$. Again, Vietnamese-Americans tended to befriend Mexican-American students with higher GPAs than Mexican-American students did ($\beta = .50, p < .001$).

Discussion

The current study tested predictions of oppositional culture theory by investigating ethnic/racial differences in the association between academic and social functioning. In support of the theory, we found that achievement and social functioning were more strongly linked for Vietnamese-American than Mexican-American adolescents. We also assessed indicators of achievement values, which are presumed to underlie group differences in the social consequences of achievement. We found that, relative to Mexican-American youth, Vietnamese-American students were more likely to value and be friends with high-achieving peers. This was true in both within-ethnic and cross-ethnic nominations, and held even when we controlled for students' own GPA and SES. This provides support for the contention that Vietnamese-American adolescents evaluate peers' achievement more positively.

Ethnic Differences in the Link between Academic and Social Functioning

We found that achievement among Vietnamese-American students was more strongly correlated with social functioning than among Mexican-American youth. High-achieving

Vietnamese-American, but not Mexican-American, students were well-liked and popular, and had more friends. Vietnamese-American girls were likely to be unpopular if they did poorly in school, whereas Mexican-American boys were likely to be rejected if they excelled academically. These differences, replicated across multiple social indices, are consistent with oppositional culture theory. The theory suggests that youth from economically marginalized groups react to their limited chances of success in dominant educational and economic systems by defining a collective identity that is in opposition to these mainstream values (Fordham & Ogbu, 1986). Stereotype threat theory, too, suggests that these anti-academic attitudes emerge in response to societal conditions, specifically the portrayal of Hispanics and African-Americans as possessing low academic ability. The end result, according to both theories, is academic disidentification. Success or failure in school no longer has implications for a student's self-esteem, as academics is not a relevant domain for the student's identity (Osborne, 1997).

Ethnic Differences in Achievement Values

Further support for these theories can be gleaned from our assessment of achievement values. In our middle-school sample, we found that ethnic/racial differences in achievement values are already well-developed. Vietnamese-American, relative to Mexican-American, students were more likely to say that they admired, respected, and wanted to be like high-achieving peers, consistent with prior studies (Graham et al., 1998; Steinberg et al., 1992). What is noteworthy in our findings, however, is evidence that these differences are not merely due to SES or ethnic homophily (tending to value one's own ethnic group). Even with ethnic homophily, SES, students' own grades, and other covariates accounted for, we found that ethnicity is associated with achievement values with a medium effect size. This suggests that there is a difference between Mexican-American and Vietnamese-American students in achievement values that transcends the known tendency to admire those like themselves.

Ethnic/Racial Differences in Friends' Attributes

Our findings regarding friendships are consistent with prior work suggesting homophily effects for ethnicity and academic achievement (Joyner & Kao, 2000; Wentzel & Caldwell, 1997). Further, we found ethnic differences in friendship formation such that Vietnamese-American youth were more likely to befriend high-achieving peers than Mexican-American students. This ethnic difference in friends' attributes is important given existing evidence that friends can influence academic engagement and school liking, achievement, and eventual school dropout (Ryan, 2001; Véronneau & Dishion, 2011; Véronneau, Vitaro, Pedersen, & Tremblay, 2008). Ethnic differences in friends' achievement position students to be exposed to distinct socialization processes, leading to divergent academic trajectories. Over many school years, small but significant effects of peer socialization can create cascades of selection and socialization in a manner that amplifies achievement differences between ethnic groups (Kindermann, 2007; Ryan, 2001). Longitudinal evidence suggests that links between academic and social functioning are bidirectional (Welsh, Parke, Widaman, & O'Neil, 2001), and the current findings suggest that this link is influenced by sociocultural context.

Further research on the emergence of ethnic differences in achievement values is needed. Existing theoretical perspectives suggest that these differences stem from the economic marginalization of certain groups in the American opportunity structure (Fordham & Ogbu, 1986). Adolescents of different ethnicities may receive different messages regarding their chances of academic success, the value of academics, and whether achievement is "embedded" in their ethnicity (see Oyserman, Harrison, & Bybee, 2001). When students are

socialized to believe that academic achievement is not group-congruent, they may focus on other outlets to build self-esteem (Steele, 1997).

Studies of mechanisms of peer influence have focused on three potential pathways: modeling, reinforcement, and exchange of ideas (see Ryan, 2000, for a review). Observing peers being rewarded for problem behaviors encourages emulation (Cohen & Prinstein, 2006). In vivo observations showed that students in academically-engaged peer groups receive more social reinforcement for on-task behavior (Sage & Kindermann, 1999). Friends become more similar to each other after discussing whether to emphasize schoolwork over social events (Berndt, Laychak, & Park, 1990). Processes of this nature likely vary between ethnic groups and may create distinct climates that can support or undermine achievement in each group. These differences can be magnified in a context of significant social segregation. Approximately 90% of reciprocated friendships in our sample were within-ethnicity, which is consistent with previous findings, even in ethnically diverse schools and classrooms (e.g., Rodkin, Wilson, & Ahn, 2007). In some multiethnic settings, students may use stereotyped characteristics to define their collective identities vis-à-vis out-group members (Carter, 2003; Rodkin et al., 2007).

Although family context was not a focus of the current investigation, families continue to be an important source of academic socialization throughout adolescence. Asian-American parents have higher educational expectations for their children than parents of other ethnicities (Mau, 1997; Peng & Wright, 1994). Although parents of Mexican backgrounds care about and value education, and discuss school with their children frequently (see Valencia and Black, 2002, for a review), less advantaged Hispanic parents may encourage their children to seek employment, marry, and have children early (Suarez-Orozco & Suarez-Orozco, 1995). Parents' educational aspirations for their children and encouragement of school effort are likely influenced by their children's school performance and larger sociocultural factors, including messages that parents receive from the media, their children's teachers and schools, and their own experiences in the workplace.

The Role of Gender

The gender differences in this study also deserve some discussion. We did not replicate previous findings that only Hispanic adolescent males, but not Hispanic females, tended to value low-achieving peers (see Graham et al., 1998). We did, however, find other gender differences that are consistent with sociological perspectives that males of particular ethnicities, more so than females, are especially prone to experiencing a conflict between social and scholastic goals (Fordham & Ogbu, 1986). For instance, we found that both Vietnamese-American and Mexican-American girls were more likely than their male counterparts to have high-achieving friends. We also found that gender sometimes interacted with ethnicity in moderating the link between social functioning and GPA. When these interactions emerged, Vietnamese-American girls were consistently most likely to show positive relations between social and academic indices, and Mexican-American boys were least likely to show such associations. Existing perspectives on the intersection of gender and ethnicity focus on identity development, with males of certain ethnic groups being under pressure to be "tough" and "cool" (Fordham & Ogbu, 1986; Rodkin, Farmer, Pearl, & Van Acker, 2000). Mexican-American boys in our study most closely resembled the tough/popular-antisocial behavioral configurations that have been identified in research with African-American males (Luthar & McMahon, 1996; Rodkin et al., 2000). Overrepresentation of Mexican-American males in this subtype is troubling, given that these youth tend to follow a developmental trajectory portending risk for later adjustment difficulties (Schwartz & Gorman, 2011).

Limitations and Strengths

Before we move to our conclusions, some potential limitations of this project should be recognized. Foremost, we assessed achievement and social functioning concurrently. Longitudinal designs could paint a fuller picture of how achievement and social functioning cyclically influence each other over time. Additionally, how youth interpret ethnicity may differ by the school's ethnic composition (Fuller-Rowell & Doan, 2010). Another limitation is the SES differences between Vietnamese-American and Mexican-American youth in our sample. To offset this limitation, we were careful to measure SES, as well as other potential confounders. Our findings actually showed that SES did not predict academic outcomes above and beyond ethnicity, GPA, and other covariates. However, we did select our ethnic groups partly because of their similarity in socioeconomic background. Being recruited from the same school, the two groups are also matched on neighborhood and school factors that may be related to SES in other samples.

A number of potential strengths of this project should also be considered. The inclusion of Vietnamese-American and Mexican-American youth from the same school afforded us a degree of control over confounding school and neighborhood factors. We also moved beyond self-report data with more intensive, multifaceted assessment of social and academic functioning. Peer nominations are demanding but offer a well-validated perspective on peer relationships (see Jiang & Cillessen, 2005). Similarly, grades from school records allow some control over biases of self-reported achievement (Shaw & Mattern, 2009). Finally, our broad assessment of variables often confounded with ethnicity contributes to internal validity of our results.

Implications

Our findings suggest that students of different ethnicities tend to segregate socially, that Vietnamese-American youth value achievement more strongly, and may be more likely to respond to peers' achievement positively, compared to Mexican-American students. Taken together, this body of research suggests that achievement occurs in a social context, and educators and policy makers would be remiss to ignore the social impact on achievement. For example, programs that congregate academically "at-risk" students hazard iatrogenic effects, as students may socialize each other to disengage from school. Similar risks may be inherent in educational practices that group students by performance, such as academic tracking. Instead, the social dynamics of the classroom can be utilized to facilitate engagement and optimize learning for every student. Facilitating friendship between academically disengaged and more competent youth may be an effective strategy (Berndt, 1999; Feldman, Caplinger, & Wodarski, 1983). Another promising direction includes interventions that aim to change how individuals interface with their peers. For example, correction of misperception of norms is a common component in college drinking interventions (e.g., Agostinelli, Brown, & Miller, 1995). Assisting teens to map and make modifications to their social network is a component of a promising substance use intervention (Mason, Pate, Drapkin, & Sozinho, 2011). Development and testing of similar components for academic achievement interventions may add to the efficacy of existing programs.

Directions for Future Research

Results of this investigation suggest that peers play a role in ethnic and gender differences in achievement. Two directions for future research will be especially informative. First, information is needed about the transmission of messages regarding achievement and ethnicity. Do children of Hispanic backgrounds receive less social reinforcement for their academic efforts and achievement, when compared to Asian-American students? Social network analysis is another useful direction for research, as it allows the processes of peer

selection and peer influence to be disentangled. Social network analysis has been used to study a range of behaviors, including risky sexual practices (e.g., Latkin et al., 2009) and college drinking (Reifman, Watson, & McCourt, 2006). Application of similar techniques to academic outcomes, particularly using longitudinal designs, will help to pinpoint processes of peer influence and inform targets for intervention.

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Table 1
Means (Standard Deviations) for Confounding, Social Functioning, and Academic Variables Across Gender and Ethnic Groups

Variable	Total	M-A Males	M-A Females	V-A Males	V-A Females	Gender <i>F</i>	Ethnicity <i>F</i>	Gender x Ethnicity <i>F</i>
<i>Confounders</i>								
Generational status	1.79 (0.48)	1.89 (0.55)	1.87 (0.48)	1.74 (0.48)	1.76 (0.43)	0.30	8.10*	0.17
SES	31.45 (14.67)	27.18 (14.50)	23.53 (11.69)	36.34	33.01 (14.17)	6.03	39.77**	0.01
Home language	3.15 (0.81)	3.24 (0.99)	3.15 (0.80)	3.17 (0.81)	3.09 (0.71)	1.44	0.80	0.00
Living with mother	0.97 (0.18)	0.96 (0.20)	0.94 (0.23)	0.97 (0.17)	0.98 (0.15)	0.00	1.75	0.38
Living with father	0.90 (0.30)	0.84 (0.37)	0.89 (0.31)	0.91 (0.29)	0.92 (0.27)	1.04	3.30	0.47
Ethnic identity	4.80 (1.18)	4.74 (1.16)	5.17 (1.06)	4.63 (1.21)	4.76 (1.19)	4.84	6.78*	2.00
<i>Social Functioning Variables</i>								
Popularity	-0.05 (0.93)	0.17 (0.88)	-0.16 (0.79)	-0.22 (0.80)	0.10 (1.29)	1.44	0.09	14.39**
Unpopularity	-0.01 (0.94)	-0.49 (0.65)	-0.07 (0.88)	0.18 (0.94)	0.06 (0.98)	0.59	18.36**	9.65**
Social acceptance	-0.03 (0.98)	0.03 (0.96)	-0.14 (0.92)	-0.14 (0.92)	0.12 (1.07)	1.70	0.71	5.84
Social rejection	-0.05 (0.97)	0.24 (0.96)	0.14 (1.06)	0.08 (0.97)	-0.28 (0.84)	3.73	18.33**	0.34
Number of friends	2.42 (1.88)	1.97 (1.51)	2.72 (2.00)	2.00 (1.64)	2.81 (2.04)	21.44**	0.06	0.01
<i>Academic Variables</i>								
Achievement values	3.22 (0.57)	2.77 (0.52)	2.82 (0.61)	3.38 (0.42)	3.49 (0.41)	2.38	163.51**	0.27
Friends' GPA	3.16 (0.67)	2.44 (0.60)	2.65 (0.57)	3.40 (0.47)	3.59 (0.38)	16.50**	365.16**	0.03
GPA	3.07 (0.83)	2.30 (0.78)	2.56 (0.83)	3.27 (0.66)	3.53 (0.56)	18.29**	235.31**	0.00

Note. M-A = Mexican-American; V-A = Vietnamese-American.

* $p < .05$

** $p < .001$.

Summary of Interaction Terms in Hierarchical Regression Analyses with Ethnicity, Gender, and GPA Predicting Social Functioning

Table 2

Step	Effects in the Model	Popularity		Unpopularity		Social Acceptance		Social Rejection		Number of Friends	
		β	sr^2	β	sr^2	β	sr^2	β	sr^2	β	sr^2
1	Generational Status	.11	.01	-.09	.01	.15**	.02**	-.01	.00	.04	.00
	Socioeconomic Status	.10*	.01*	.00	.00	.08	.01	.05	.00	-.07	.00
	Ethnic Identity	.02	.00	-.04	.00	.14**	.02**	-.02	.00	.14**	.02**
	Ethnicity ⁺	-.04	.00	.29	.05*	-.05	.00	-.01	.00	-.06	.00
	Gender ⁺⁺	-.09	.01	-.02	.00	-.06	.00	.07	.00	-.23***	.05***
2	GPA	-.03	.00	-.11	.01	.17**	.02**	-.26***	.04***	-.24***	.04***
	Ethnicity × Gender	-.11	.01	.03	.00	-.06	.00	-.00	.00	.04	.00
	Ethnicity × GPA	-.13*	.01*	-.13*	.01*	-.11*	.01*	-.02	.00	-.13	.01
	Gender × GPA	-.05	.00	-.10	.01	-.12*	.01*	-.04	.00	-.16	.02**
3	Ethnicity × Gender × GPA	-.01	.00	-.14*	.01*	-.04	.00	-.14*	.01*	-.00	.00

Note. $N = 389$.

sr^2 = squared semipartial correlation representing the proportion of variance explained uniquely by each predictor.

⁺ Ethnicity is coded as Mexican-American = 0 and Vietnamese-American = 1.

⁺⁺ Gender is coded as girls = 0 and boys = 1.

* $p < .05$

*** $p < .001$.

Table 3

Hierarchical Regression Analyses with Gender and Ethnicity Predicting Achievement Values

Step	Effects in the Model	β	sr^2
1	Generational Status	-.01	.00
	Socioeconomic Status	-.04	.00
	Ethnic Identity	.03	.00
	GPA	.17**	.02**
	Ethnicity ⁺	.45***	.12***
	Gender ⁺⁺	-.04	.00
2	Ethnicity $\times$ Gender	-.15	.00

Note. $N = 335$.

sr^2 = squared semipartial correlation representing the proportion of variance explained uniquely by each predictor.

⁺ Ethnicity is coded as Mexican-American = 0 and Vietnamese-American = 1.

⁺⁺ Gender is coded as girls = 0 and boys = 1.

**
 $p < .01$

 $p < .001$.

Table 4

Hierarchical Regression Analyses with Gender and Ethnicity Predicting Friends' GPA

Step	Effects in the Model	β	sr^2
1	Generational Status	.10**	.01***
	Socioeconomic Status	.06	.00
	Ethnic Identity	-.02	.00
	GPA	.25***	.04***
	Ethnicity ⁺	.53***	.17***
	Gender ⁺⁺	-.10**	.01**
2	Ethnicity $\times$ Gender	.02	.00

Note. $N = 325$.

sr^2 = squared semipartial correlation representing the proportion of variance explained uniquely by each predictor.

⁺ Ethnicity is coded as Mexican-American = 0 and Vietnamese-American = 1.

⁺⁺ Gender is coded as girls = 0 and boys = 1.

**
 $p < .01$

 $p < .001$.