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# Are Adolescents' Friends Really Bad Influences?: The Influence of Peer Context on European American and African American Adolescents' School Adjustment

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Abstract

The present study examined: (a) the relation between peer context (perceived positive peer characteristics, perceived negative peer characteristics, and negative peer orientation) and academic motivation and behaviors for African American and European American early adolescents and (b) the interactive effects of perceived peer characteristics and negative peer orientation on these school outcomes. 623 African Americans and 331 European Americans completed self-administered and face-to-face interviews at 2 time points. The results showed that positive peer characteristics and negative peer orientation were more strongly related to African Americans and European Americans' motivation than negative peer characteristics; European Americans' achievement was more strongly related to negative peer characteristics and African American adolescents' performance was more dependent upon their negative peer orientation; and truancy was related to both negative characteristics and negative peer orientation. There were also significant interactive effects of positive peer characteristics and negative peer orientation in the analyses of motivation and achievement.

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# Are Adolescents' Friends Really Bad Influences?: The Influence of Peer Context on European American and African American Adolescents' School Adjustment

The present study investigates the relation of the adolescent peer context to European American and African American adolescents' academic attitudes and behaviors. We examined the extent that adolescents' friends' positive and negative characteristics and their own willingness to conform to their peers in negative situations relate to adolescents' intrinsic motivation, perceptions of the importance of school, educational expectations, truancy from classes and school achievement. In addition, we looked at whether the relations varied depending on adolescents' own orientation to conforming to negative peer pressure.

Because of numerous concerns regarding the methods and assumptions evident in previous research on adolescents of different ethnicities (c.f. Graham, 1992; Spencer & Dornbusch, 1990; McLoyd, 1991), we want to outline our framework before reviewing the relevant literatures. Until quite recently much of the research on adolescents of different ethnicities was based on the assumption that adolescents have similar experiences and that these experiences impact their development in similar ways (c.f. Graham, 1992; Spencer & Dornbusch, 1990; McLoyd, 1991). More recent studies show that findings from, and theoretical models based, on samples of European American adolescents do not necessarily apply very well to adolescents of other ethnicities (e.g. Steinberg, Dornbusch, & Brown, 1992; Cooper, 1990). For example, although the majority of research on parenting styles link greater use of the authoritative parenting style to better psychological functioning among European American adolescents, recent research with Asian American, Hispanic, and African American adolescents indicate that this may not be true for Asian American and African American adolescents (Steinberg, Dornbusch, & Brown, 1992). In Steinberg et al.'s study (1992), the extent and relative

importance of peers' and parents' influence on academic achievement also varied across students of different ethnicities. Finally, studies on African American and European Americans' peer groups have often involved only one of these ethnic groups. Studies with predominantly European American adolescents also usually differ from studies of African American adolescents in terms of both theoretical focus and instrumentation (Slaughter-Defoe, Nakagawa, Takanishi, & Johnson, 1990). Consequently, at this time, it is unclear whether the effects of peer influences on adolescent development are similar across different ethnicities. In light of these concerns, we review existing work separately for each ethnic group.

## Prior Research on European American Adolescents' Peer Context

Despite the prevalent belief that peers are a negative influence on adolescents in many studies of European American youths, peers have neither a pervasive nor a monolithically negative influence (Brown, 1982; Clasen & Brown, 1985; Brown, Clasen, & Eicher, 1986; Brown, Lohr, & McClenahan, 1986). In both retrospective and prospective cross-sectional studies, European American adolescents report that their friends both encourage and discourage (1) antisocial behaviors (e.g. using drugs and alcohol), (2) conformity to peer social norms (e.g. dress and grooming styles and going to parties), and (3) school- related attitudes and performance (e.g. achievement motivation and school performance; Brown, 1982; Clasen & Brown, 1985; Brown, Clasen, & Eicher, 1986; Brown, Lohr, & McClenahan, 1986). European American adolescents also report that the degree of peer pressure varies by domain with greater pressure on dress and grooming norms than on smoking cigarettes or using alcohol (Brown, 1982; Clasen & Brown, 1985; Brown, Clasen, & Eicher, 1986; Brown, Lohr, & McClenahan, 1986). But when friends are seen as encouraging more than discouraging misconduct behaviors and following negative peer norms, European American adolescents are more likely to report engaging in antisocial behaviors and conforming to the social norms of their friends (Brown, Lohr, & McClenahan, 1986; Brown, Clasen, & Eicher, 1986).

This tendency, however, varies by age and gender: Both boys (versus girls) and early adolescents (versus prepubescent youngsters and late adolescents) report being more vulnerable to peer influences, especially in antisocial situations (Berndt, 1979; Steinberg & Silverberg, 1986; Brown, Clasen, & Eicher, 1986). Furthermore, European American adolescents' susceptibility to conformity in negative situations is significantly associated with adolescents' report of their involvement in delinquent activities; in contrast, their susceptibility to conform in neutral peer conformity situations is not related to their reports of conformity to peer social norms (Brown, Clasen, & Eicher, 1986). Finally, although some studies of European American adolescents' peer orientation have looked at their willingness to conform to their friends in prosocial situations such as doing charitable work, the findings are inconclusive due to unreliable measures (Cronbach's $\alpha < .60$); moreover, this research generally has not investigated the relation between peer orientation and prosocial attitudes and behaviors related to school (Berndt, 1979; Brown, Clasen, & Eicher, 1986).

Although most studies with European American youths have looked at perceived peer influences and conformity dispositions independently, according to the person-environment perspective, the effects of adolescents' peer context on adolescents' attitudes and behaviors should depend on their conformity dispositions (Lewin, 1935). Adolescents who are higher in peer orientation should be more negatively affected by a negative peer context than those with lower negative conformity dispositions (Fuligni & Eccles, 1993). Similarly, adolescents with high conformity disposition should be more positively affected by their friends' prosocial influences than those who are less oriented to pleasing their peers. Although Brown, Clasen, and Eicher (1986) found a significant Perceived Peer Pressure by Conformity Disposition interaction in predicting European American adolescents' antisocial behaviors, we could find no reliable and conclusive evidence regarding adolescents' positive school-related attitudes and behaviors.

## Previous Research on African American Adolescents' Peer Context

Although research on European American adolescent peer groups has progressed beyond a monolithically negative perspective on peer influence, studies of African American adolescent peer groups still tend to examine only the possible negative influences of friends on adolescents' attitudes and behaviors; few researchers have investigated either potential prosocial effects of African Americans' peers or more complex interactive hypotheses. For example, we know that both the number of friends engaging in antisocial activities and the frequency with which they engage in antisocial behaviors, such as smoking, alcohol use, and delinquency, is related to African-American adolescents' own involvement in these activities (e.g., Epstein, Botvin, Diaz, Schinke, 1995; Dawkins, 1986). Similarly, studies have tried to document the negative effect of African American adolescents' peer group on their school motivation and behaviors. For example, Fordham and Ogbu (1986) found that African Americans adolescents were discouraged by their peers from doing things such as studying or doing well in school (perceived as "acting White). In contrast, very little is known about how African American adolescents' peer group either influence more neutral normative behaviors, such as dress and grooming behaviors, or encourage more positive behaviors, such as school achievement and involvement in prosocial activities.

Individual differences in peer orientation have rarely been examined adequately in any studies of the African American adolescents peer context. There is some evidence that gifted African American adolescents who were doing well in school have a lower level of peer orientation than their gifted counterparts who were performing poorly in school (Ford, 1993). But we could find no studies examining the possible moderating effects of peer orientation on the relation between peer characteristics and African American adolescents' attitudes and behaviors.

## Previous Research on Both European American and African American Adolescents' Peer Contexts

For the most part, studies of both European American and African American adolescents' peer contexts have looked only at peer influences, omitting peer orientation as either a main

effect or a moderator. Several studies have found group differences in the relation between perceived peer influence and engagement in antisocial behaviors: In a cross-sectional study with 1634 Asian American, African American, Hispanic and European American 7th- to 9th-grade students, Newcomb and Bentler (1986) found that African American adolescents (versus adolescents of the other three ethnic groups) were influenced least by their peers to use beer, wine, hard liquor, marijuana, and pills. Similarly, Ladrine, Richardson, Klonoff, and Flay's (1994) found smoking among peers was the best predictor (of 18 risk predictors) of smoking for European American adolescents but it was not even a significant predictor of African American adolescents' frequency of cigarette smoking. In contrast, Feigelman and Lee (1995) found that perceived peer modeling of cigarette use was significantly related to both African American and European American adolescents' initiation of smoking.

There is also some evidence that there may be ethnic differences in the relative influence of peers versus parents have on African American and European American adolescents' school achievement (Steinberg, Dornbusch, & Brown, 1992). Steinberg et al.'s cross-sectional study suggests that African American adolescents' school success may be more influenced by their peers' academic encouragement than by their parents' school support; in contrast, exactly the opposite was the case for European American high school students. None of these studies, however, investigated whether individual differences in susceptibility to either positive or negative peer influence were linked to peer orientation in either ethnic group.

## The Present Study

In the present paper, we focus on the following gaps in our knowledge: (1) the relations between perceived positive and negative peer characteristics and school motivation and behavior, (2) the association between peer orientation and school motivation and behavior, (3) the moderating effects of peer orientation on the relations between perceived peer characteristics and school motivation and behavior for African American and European American adolescents. In light of our concerns about conducting research with adolescents of different ethnicities, and

given that there is some evidence that the magnitude in the relation between peer influences and adolescent behavior may be different for African American and European American adolescents, we looked at these relations separately for African American and European American adolescents.

We focus on looking at school outcomes in the present study for several reasons. The two domains of adolescent life that peers have the most profound impact are delinquency and school success (e.g. Steinberg, Dornbusch, & Brown, 1992; Brown, Clasen, & Eicher, 1986; Esptein, Botvin, Diaz, Schinke, 1995; Dawkins, 1986). In general, more studies have looked at the complexities of the relation between peer influence and antisocial behaviors than the link between peer influence and prosocial behaviors. As a result, we know quite a bit about perceived positive and negative peer influences, individuals' conformity disposition, and their interactive effects on adolescents' initiation of delinquent activities, their level of involvement in antisocial behaviors, and their lack of misbehaviors. In contrast, there is much less comparable information about the complexities of peer influence on school attitudes and behaviors. To obtain a more balanced and multidimensional picture of peer influences on school success, we need to study the possible positive aspects of peer influence and the moderating effects of individual differences in susceptibility to peer influences, especially for African American adolescents.

In the present study, we use measures of perceived positive and negative peer characteristics to assess the relations among peer influences and school motivation and achievement. Previous research has revealed that the characteristics of adolescents' friends are related to adolescents' own attitudes and behaviors and their peer influence . However, because most of this research has relied on cross-sectional correlation designs, it is not clear as to whether this relation is due to selection or socialization. To address this issue, we conducted two sets of regression analyses on our school outcome variables: A set of analyses of the synchronous relations among the peer variables and outcome variables, and a parallel set of longitudinal analyses in which we control for prior motivation, truancy, and achievement, as measured at

Wave 1, to examine the relations of Wave 2 peer variables to "change" in school outcomes (Cohen & Cohen, 1983).

## Method

### Sample

The sample includes 623 African American (335 males and 288 females) and 331 European American (155 males and 176 females) early adolescents and their families. The adolescents attended 23 schools in an ethnically diverse county in the Mid-Atlantic region of the United States. Unlike many studies with African Americans, the African American adolescents in this study were drawn from families across the full range of SES. The median annual income in 1993 of European American adolescents' families was $50,000-54,999. The median range for the African American adolescents' families was $45,000-$49,999. The primary caregivers' average levels of education were the same in the two groups: fifty-four percent having a high school degree and forty percent having obtained a college degree. Thus, both the European American and African American samples represented populations of comparable socioeconomic diversity.

The participants in the study are part of a large ongoing longitudinal study of adolescent development.[1] This larger study was designed to examine the influences of the social contexts related to peers, family, school and neighborhood on African American and European American adolescents' development.

### Measures

The first wave of data was collected from the families at home when the adolescent was in seventh-grade (1991). The target youth and primary caregiver were interviewed (approximately 1 hour each) and completed a 45-minute self-administered questionnaire. If there was a consenting secondary caregiver and an older sibling in the household, they also completed a 45-minute questionnaire. The second wave of data was collected at the end of adolescents' eighth-grade (1993). Similar data collection instruments were used at both waves. In addition, academic marks (grades for both the seventh and eighth grades) and standardized achievement

test scores (including third-grade and fifth-grade California Achievement Test scores) were collected from the schools. The following subset of measures were used in the present study: (1) primary caregivers' reports of family sociodemographic characteristics, (2) youths' self-report of the perceived positive and negative characteristics of their friends, (3) youths' self-report of their own negative peer orientation, (4) youths' self-report of their own academic motivation, (5) youths' self-report of their own truancy from class and (5) academic marks from the school records.

Sociodemographic and Background Characteristics. The sociodemographic and background variables included the adolescents' gender and elementary school academic competence and an indicator of their family's socioeconomic status. Socioeconomic status was created by using the information provided by the primary caregivers regarding the family's annual income, the higher educational level, and higher occupational status of either the primary or secondary caregiver. The indicator of the adolescent's prior academic competence was an average of their third- and fifth-grade California Achievement Test scores.

Perceived Peer Characteristics. Perceived positive and negative peer characteristics were measured with seven 5-point Likert items from Eccles' Michigan Study of Adolescent Life Transitions (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, & Mac Iver, 1993; See Appendix A). The adolescents reported on the number of their close friends who espoused particular beliefs or engaged in specific behaviors. This information was collected on the Wave 2 self-administered questionnaires.

Principal-components factor analysis, followed by oblique rotation, yielded two distinct factors among these 7 items. The two scales were created by averaging the unit weighted responses for the items in each of the scales. Adequate Cronbach's alphas were obtained for both scales for both populations (perceived negative peer characteristics---African Americans $\alpha = .67$, European Americans $\alpha = .70$; perceived positive peer characteristics---African Americans $\alpha = .70$ and European Americans $\alpha = .74$).

Negative Peer Orientation. We used 4 items from Eccles' Michigan Study of Adolescent Life Transitions to tap adolescents' negative peer orientation (Fuligni & Eccles, 1993). Two 4-point Likert items and two 7-point Likert items assessed the adolescents' propensity to engage in negative actions in order to be with their friends (See Appendix A). All of the items were also collected on youth's Wave 2 self-administered questionnaire. The scale was constructed by taking the mean of the unit weighted responses to each item; this scale was reliable for both the African American ($\alpha$ = .68) and European American adolescents ($\alpha$ = .64).

Academic Motivation. We assessed achievement motivation in three different ways: All measures of academic motivation were assessed at both Wave 1 and 2. One measure tapped adolescents' intrinsic motivation and another measure assessed adolescents' perceived importance of school and the third was a single-item indicator of adolescents' educational expectations (See Appendix B). All of these motivation indicators are drawn from the work of Eccles and her colleagues (Eccles, 1983).

A principal components factor analysis with oblique rotation on the first two sets of items yielded the two specified dimensions of achievement motivation. We created both scales by taking the mean of the unit weighted responses to each item. Cronbach analyses of reliability yielded adequate reliability for African American adolescents' intrinsic motivation (Wave 1 $\alpha$ = .60; Wave 2 $\alpha$ = .60) and perceived importance of school (Wave 1 $\alpha$ = .80; Wave 2 $\alpha$ = .81) as well as of European American adolescents' intrinsic motivation (Wave 1 $\alpha$ = .61; Wave 2 $\alpha$ = .70) and perceived importance of school (Wave 1 $\alpha$ = .84; Wave 2 $\alpha$ = .82 ).

Truancy from Classes. At Wave 1 and Wave 2, the adolescents reported how often they skipped classes; because the measure of skipping class was skewed at both waves (Less than 10% of the adolescent had ever skipped classes at Wave 1 and less than 40% of them had skipped classes at Wave 2), we created a dichotomous variable, in which those who had reported any skipping were given a score of 1 and those who said they had never skipped school were coded 0.

Grades. Adolescents' seventh- and eighth-grade academic subjects grade point averages were obtained from school records.

## Results

### Plan of Analyses

We conducted two sets of hierarchical regression analyses for each ethnic group: In the first set we used only the Wave 2 outcomes; and in the second set we included a control for the Wave 1 measure of the Wave 2 outcome. In the first step of both sets of analyses, the sociodemographic and background variables (gender, SES of the adolescent's family, and prior academic competence of the youth) were entered. We also entered the Wave 1 measure of the outcome for those analyses tapping change in school motivation and achievement at step one for the longitudinal analyses. In the second step, we entered the 3 peer-related predictors (perceived positive peer characteristics, perceived negative peer characteristics, and negative peer orientation). In the last step, we entered the 2 predicted interaction terms (i.e., the cross-product term of perceived positive peer characteristics and negative peer orientation and the cross-product term of perceived negative peer characteristics and negative peer orientation). Following a similar sequence of steps, we conducted logistic regression on the dichotomous skipping class variable.

As suggested by McClelland and Judd (1993), a criterion of $p < .10$ was used to determine the statistical significance testing of the interaction terms. This suggestion reflects the difficulties in detecting true moderator effects in field studies: Measurement error, collinearity among the predictors and their resulting cross-product term, and smaller residual variance of the cross-product term make a Type II error for continuous moderator effects much more likely in field studies than in experiments.

After conducting both the synchronous and longitudinal regression analyses for each ethnic group, we then tested for ethnic differences in the magnitude of: (a) the relation between perceived peer characteristics and achievement motivation and behavior, (b) the relation between negative peer orientation and school motivation and behavior, and (c) the moderating effects of

negative peer orientation on the relation between perceived peer characteristics and these school outcomes. A t-test statistic was used to assess the difference between each of the predicted sets of independent regression coefficients (Pedhazer, 1982).

Descriptive, Correlational, Collinearity Analyses for African Americans and European Americans

Descriptive information about the African American and European American adolescents are presented in Table 1. With regard to the sociodemographic and background variables, European American adolescents' standardized test scores were higher than the African Americans' test scores, and European American youths' families were of higher socioeconomic status than African American adolescents' families. In addition, the European American adolescents reported a higher negative peer orientation than did the African American youths, but there were no ethnic group differences in their report of their friends' positive and negative characteristics pertaining to school. At both Waves 1 and 2, the African American adolescents reported greater intrinsic school motivation and stronger perceptions that school was important than European American youths did but there were no ethnic group differences in their educational expectations or in truancy at either Wave 1 or Wave 2. European Americans had higher academic marks than did the African Americans.

Separate correlation analyses were conducted for each ethnic group (See Table 2). The bivariate correlations showed that each of the peer variables were related to each of the outcomes and there were some differences in the magnitude of these associations. Perceived positive peer characteristics were more strongly related to the African American and European American adolescents' intrinsic motivation (Wave 2), perceptions of the importance of school (Wave 2), and educational expectations (Wave 2) than either perceived negative peer characteristics or negative peer orientation. For the European American adolescents, both perceived positive peer characteristics and perceived negative peer characteristics were more strongly related to their achievement at Wave 2 than was negative peer orientation. In contrast, for African American youths, negative peer orientation was more strongly related to achievement at Wave 2 than were

perceptions of their friends' positive and negative characteristics. Finally, perceived negative peer characteristics and negative peer orientation were more strongly correlated to African American and European American adolescents' truancy from classes than were perceived positive peer characteristics.

Analyses revealed no collinearity problems among our predictors, specifically for both African American and European American youths, the bivariate correlations (1) between perceived positive peer characteristics and perceived negative peer orientation , (2) between perceived positive peer characteristics and negative peer orientation, and (3) between perceived negative peer characteristics did not reveal high bivariate collinearity problems among the predictors, i.e., $r < .80$ (Lewis-Beck, ). In addition, we inspected the variance inflation factor (VIF)---a statistic indicating that the regression coefficients may be unstable because of high multicollinearity among the predictors if it exceeds 10 (Howell, 1992). The variance inflation factors (VIF) for all of our regression analyses were less than 2.00.

Hierarchical Regression Results for European American Adolescents

Intrinsic School Motivation. The results for the hierarchical regression analyses on European American adolescents' intrinsic motivation at Wave 2 are shown in Table 3. The demographic variables entered in the first step accounted for 2% of the variance in their intrinsic motivation at Wave 2: Only gender was a significant predictor ($\beta = .14$, $p < .05$); European American females were more intrinsically motivated than European American males. We then added the perceived peer characteristics variables and the negative peer orientation variable. These predictors accounted for an additional 15% of the variance in European Americans' intrinsic motivation. Perceived positive peer characteristics was positively related to adolescents' intrinsic motivation ($\beta = .32$, $p < .001$) and negative peer orientation was negatively related to their intrinsic motivation ($\beta = -.22$, $p < .001$). Having a higher proportion of friends with positive academic characteristics was associated with being more intrinsically motivated. In addition, having a more negative peer orientation was correlated with being less intrinsically motivated

about school. In the third step, we added each of the interaction terms, neither of which was significant.

In our next analyses, we looked at relation between the peer variables and European Americans' change in intrinsic motivation. In the first step, the adolescents' intrinsic motivation at Wave 1 was significantly related to their intrinsic motivation at Wave 2 (See Table 3). When the peer variables were entered into the analyses, they accounted for an additional 9% of the variance in students' intrinsic motivation at Wave 2, even after controlling for Wave 1 intrinsic motivation and both sociodemographic and background variables. Perceived positive peer characteristics was positively related to European American adolescents' increase in motivation ($\beta = .27$, $p < .001$) and negative peer orientation predicted decreases in it ($\beta = -.19$, $p < .01$). It is interesting to note that perceived positive peer characteristics and negative peer orientation each made an additive contribution to explaining intrinsic motivation even with prior intrinsic motivation controlled (Wave 1). These results are similar to the synchronous analyses.

There were also significant interactions of both perceived positive peer characteristics by negative peer orientation ($\beta = -.09$, $p < .10$) and perceived negative peer characteristics by negative peer orientation ($\beta = .10$, $p < .10$) on change in students' intrinsic motivation. Using the strategy suggested by Jaccard, Turrisi, and Wan (1990) for plotting interactions between two continuous variables on a continuous outcome, the graphs of the interactions are shown in Figures 1 and 2. Several characteristics of the graph of the interaction between perceived positive peer characteristics by negative peer orientation on the change in intrinsic motivation should be noted (See Figure 1). Figure 1 depicts both the main effects of perceived positive peer characteristics and negative peer orientation. In addition, it shows that adolescents who have the most friends with positive school characteristics and lowest orientation to conform to peers in negative situations have the strongest intrinsic motivation; adolescents with the highest negative peer orientation and the fewest numbers of friends who are positive about school have the lowest intrinsic motivation. Figure 2 shows the interaction between perceived negative peer influence by negative peer orientation on adolescents' change in intrinsic motivation. Adolescents who have

the fewest number of friends who are negative about school and who also report the lowest negative peer orientation have the strongest intrinsic motivation. An interesting note is that for adolescents who report the highest negative peer orientation, the relation between perceived negative peer characteristics and intrinsic motivation is positive: Having more friends who are negative about school increases the enjoyment of school for adolescents who are highly oriented to their peers in negative situations.

Perceived Importance of School. In our analyses of European American adolescents' perceptions of the importance of school at Wave 2, we found that the sociodemographic and background variables did not account for a significant amount of the variance in students' perceptions of the importance of school (See Table 4). Entering the perceived peer characteristics and negative peer orientation variables accounted for 14% of the variance in adolescents' perceived importance of school. Similar to the results on intrinsic motivation, perceived positive peer characteristics was positively related to adolescents' perceptions of the importance of school ($\beta = .20$, $p < .001$) and negative peer orientation was negatively related to these perceptions ($\beta = -.24$, $p < .001$). Neither of the interaction terms was significant.

The results for the regression analyses on European American students' change in their perceptions of the importance of school are similar to the regression on European American students' perceptions of the importance of school in the eighth grade (See Table 4). The sociodemographic and background variables accounted for 9% of the variance in perceived importance of school. Adolescents' prior perception of the importance of school at Wave 1 was related to their later perceptions ($\beta = .27$, $p < .001$). Again, perceived positive peer characteristics was positively associated with the outcome variable ($\beta = .17$, $p < .01$), and negative peer orientation was negatively correlated to the change in their perceptions of the importance of school ($\beta = -.21$, $p < .01$). Both perceived positive peer characteristics and negative peer orientation had a comparable effect on the outcome as prior perceived importance of school. The interaction terms were both not significant.

Educational Expectations. The results for our final motivational outcome are presented in Table 5. The sociodemographic and background variables accounted for 16% of the variance in European American adolescents' educational expectations. Females (versus males), adolescents from families of higher socioeconomic status (versus those from lower SES), and adolescents of higher academic competence (versus youth of lower academic competence) had higher educational expectations. Entering the peer variables accounted for an additional 6% of the variance in academic expectations. Perceived positive peer characteristics was positively related to educational expectations ($\beta = .19$, $p < .01$) and negative peer orientation was negatively correlated to their academic expectations ($\beta = -.16$, $p < .01$). Neither of the interaction terms was significant.

In our next regression analysis, we included adolescents' educational expectations at Wave 1 to look at the relation between the peer variables and adolescents' change in educational expectations. Table 5 indicates that the sociodemographic and background variables accounted for 29% of the variance in educational expectations. Prior academic competence and educational expectations at Wave 1 were related to European American adolescents' educational expectations at Wave 2. The second step of the hierarchical regression analysis revealed that the only significant peer predictor was adolescents' report of their friends' positive characteristics ($\beta = .16$, $p < .01$). Neither of the interaction terms was significant.

Achievement (G.P.A.) Table 6 shows the results for the hierarchical regression analyses on European American students' achievement in the 8th grade. The background variables contributed to 29% of the variance in their 8th-grade achievement. Gender ($\beta = .23$, $p < .001$), socioeconomic status ($\beta = .18$, $p < .01$), and ability ($\beta = .40$, $p < .001$) were significantly related to European American students' grade point average. Being female, coming from a family with higher SES, and having higher ability were linked to greater achievement. Adding the peer variables accounted for an additional 5% of the variance in European American adolescents' G.P.A. For European American adolescents, perceived negative peer characteristics was negatively associated with their achievement in school ($\beta = -.22$, $p < .01$). Having more friends

who were negative about school negatively affected their achievement. Neither interaction terms was significant.

The results of the relation between the peer variables and students' achievement after controlling for prior achievement, i.e. change in achievement, are shown in Table 6. Adolescents' sociodemographic and background variables accounted for 60% of the variance in their achievement. Adolescents' academic competence and prior achievement at Wave 1 were positively related to their achievement at Wave 2. The results of including the peer variables showed that students' perceptions of their peers' negative characteristics was negatively correlated to students' change in achievement ($\beta = -.11$, $p < .05$). Unlike the synchronous analyses on the adolescents' eighth-grade achievement, we discovered that there was an interaction between perceived positive peer characteristics and negative peer orientation on their change in achievement ($\beta = -.10$, $p < .05$). Figure 3 depicts this interaction. As European American adolescents have a greater negative peer orientation, the relation between perceived positive peer characteristics and change in achievement becomes attenuated.

Truancy from Classes. Because the truancy from classes outcome measure was a dichotomous variable, we conducted a hierarchical logistic regression analysis. In the first step of our one-time point analysis, we entered the sociodemographic and background variables, which were all not related to whether the adolescent had ever skipped classes at Wave 2 (See Table 7). Adding the peer variables significantly contributed to predicting whether the youth skipped classes at Wave 2. Both perceived negative peer characteristics ($B = 1.10$, $p < .001$) and negative peer orientation ($B = .99$, $p < .001$) were positively related to whether the youth skipped classes at Wave 2. Neither of the interaction term was significant.

In the longitudinal logistic regression analysis, we included the Wave 1 truancy from class variable. Whether the adolescent skipped classes at Wave 1 was the only significant background predictor in the first step ($B = 1.28$, $p < .01$). In the second step, both perceived negative peer characteristics ($B = 1.1$, $p < .001$) and negative peer orientation ($B = .98$, $p < .001$) were positively related to European American adolescents' change in truancy status. Having

more friends who were negative about school and having a greater negative peer orientation was related to adolescents' greater likelihood to skip classes.

African American Adolescents

Intrinsic Motivation. We conducted the same analyses using the data for African American adolescents. In the regression equation predicting African American intrinsic motivation at Wave 2, the first step of the hierarchical regression revealed that the sociodemographic and background variables were not significant predictors (See Table 3). The next step of the hierarchical regression analyses revealed that the peer variables accounted for 14% of the variance in African American students' intrinsic motivation. After controlling for background variables and perceptions of peers' negative school characteristics, African American students' perceptions of their friends' positive academic characteristics was positively related to intrinsic motivation ($\beta = .32$, $p < .001$) and their own negative peer orientation were significantly related to their intrinsic motivation ($\beta = -.09$, $p < .05$). There was also a significant perceived positive peer characteristics by negative peer orientation interaction in the analysis of their intrinsic motivation ($\beta = -.15$, $p < .001$). Figure 4 depicts that having friends with few positive peer characteristics was associated with lower intrinsic motivation, regardless of their negative peer orientation. Figure 4 also revealed that the more positive African American adolescents perceived their peers and the less negatively oriented they were to their peers, the greater their intrinsic motivation. The perceived negative peer characteristics by negative peer orientation interaction was not significant.

When we examined the regression analyses for African Americans' change in intrinsic motivation between Wave 1 and Wave 2, we found similar results. The sociodemographic and background variables accounted for 19% of the variance in intrinsic motivation at Wave 2 (See Table 3). After controlling for sociodemographic and background variables, the peer variables contributed for 7% of the variance in the change in adolescents' intrinsic motivation. Both perceived positive peer characteristics ($\beta = .24$, $p < .001$) and negative peer orientation ($\beta = -.09$, $p < .05$) were significantly associated to the change in African Americans' intrinsic motivation.

Perceived positive peer characteristics and Wave 1 intrinsic motivation had comparable effects on intrinsic motivation at Wave 2. More positive perceptions of their peers' school characteristics were related to more positive changes in their intrinsic motivation while greater negative peer orientation was negatively correlated to changes in their intrinsic motivation. Only the perceived positive peer characteristics X negative peer orientation interaction was significantly related to their change in motivation ($\beta = -.11$, $p < .01$). The interaction (See Figure 5) is similar to the previous (See Figure 4). Having friends African American adolescents perceived as endorsing school positively is linked to an increase in intrinsic motivation, regardless of their differences in negative peer orientation, however, this increase is greatest for those with low negative peer orientation.

Perceived Importance of School. Next, we examined the independent variable of African Americans' perceptions of the importance of school. The results indicated that gender, SES, and ability were not significant predictors of African American students' perceptions of the importance of school (See Table 4). After controlling for the peer variables, gender was significantly related to perceived importance of school, thereby indicating a suppressor effect; after controlling for other background and the peer variables, African American females perceived school as more important than African American males ($\beta = -.11$, $p < .05$). Similar to the results for intrinsic motivation, both perceived positive peer characteristics ($\beta = .21$, $p < .001$) and negative peer orientation ($\beta = -.22$, $p < .001$) were significantly associated with their perceptions of the importance of school. Both the interaction term of perceived positive peer characteristics by negative peer orientation ($\beta = -.07$, $p < .10$) and the interaction term of perceived negative characteristics by negative peer orientation ($\beta = .12$, $p < .10$) were significant in the analyses of perceptions of the importance of school. The perceived positive peer characteristics by negative peer orientation interaction is shown in Figure 6, which demonstrates that the lower the youth's negative peer orientation and the more friends they had with positive school characteristics, the more important the adolescent perceived school. The perceived negative peer characteristics by negative peer orientation interaction is shown in Figure 7, which

indicates that adolescents who were the most likely to conform to their peers in negative situations and who had the most friends who were negative about school perceived school as the least important.

The results for the hierarchical regression analyses predicting African American change' in their perceptions of the importance of school are shown in Table 4. The only significant demographic variable was the students' perceptions of the importance of school at Wave 1 ($\beta$ = .26, $p < .001$). Both positive peer characteristics ($\beta$ = .18, $p < .001$) and the adolescents' negative peer orientation ($\beta$ = -.19, $p < .001$) were significant predictors of the change in students' perceptions of the importance of school while perceived negative peer characteristics was not significantly associated to the outcome variable, after accounting for all other predictor variables. These peer-related predictors accounted for 11% of the variance in perceptions of the importance of school. Both the perceived positive peer characteristics by negative peer orientation ($\beta$ = -.09, $p < .05$) and the perceived negative peer characteristics ($\beta$ = .13, $p < .01$) by negative peer orientation interactions were significant. Figure 8 reveals that lower the youth's negative peer orientation and the more friends they had with positive school characteristics, the greater the increase in their perceptions of the importance of school; and Figure 9 shows that adolesecent who are the least oriented toward their peers in negative situations and who have the fewest friends who are negative about school have the most positive change in their perceptions of the importance of school.

Educational Expectations. The results for our last motivational outcome are presented in Table 5. The sociodemographic and background variables accounted for 16% of the variance in African American adolescents' educational expectations. Females (versus males), adolescents from families of higher socioeconomic status (versus those from lower SES), and adolescents of higher academic competence (versus youth of lower academic competence) had higher educational expectations. Entering the peer variables accounted for an additional 5% of the variance in academic expectations. Perceived positive peer characteristics was positively related to educational expectations ($\beta$ = .18, $p < .001$). Neither of the interaction terms was significant.

In our next regression analysis, we included adolescents' educational expectations at Wave 1 to look at the relation between the peer variables and adolescents' change in educational expectations. Table 5 indicates that the sociodemographic and background variables accounted for 26% of the variance in educational expectations. All of these variables, except for gender, were related to European American adolescents' educational expectations at Wave 2. The second step of the hierarchical regression analysis revealed that the only significant peer predictor was adolescents' report of their friends' positive characteristics ($\beta = .15$, $p < .001$). Neither of the interaction terms was significant.

Achievement (G.P.A.) As shown in Table 6, gender, SES, and ability accounted for 27% of the variance in the students' 8th-grade achievement ($R^2 = .27$, $p < .001$). Parallel to previous research, gender ($\beta = .26$, $p < .001$), SES ($\beta = .18$, $p < .001$), and prior ability ($\beta = .34$, $p < .001$) were significantly related to African American adolescents' achievement in school. In the second step of the hierarchical regression, we found that after entering all 3 of the peer context variables, only adolescents' negative peer orientation ($\beta = -.23$, $p < .001$) remained significantly associated with their achievement, after controlling for all other predictors. The perceived peer characteristics and the negative peer orientation variables accounted for 5% additional variance in students' Wave 2 grade point average ($R^2 = .05$, $p < .001$). The results of the hierarchical regression also indicated that there was a significant perceived positive peer characteristics by negative peer orientation interaction ($\beta = .08$, $p < .05$). The interaction is depicted in Figure 10. The graph indicates that for most of the African American youths, their perceptions of their peers' positive characteristics is not related to their school performance, but their school achievement is influenced by their own negative peer orientation. However, for those African Americans who hold a high negative peer orientation, there is a positive relation between their perceptions of their friends as positive school influences and their school performance.

We also looked at the relation of these peer variables to African American adolescents' change in achievement Wave 1 to Wave 2. As shown in Table 6, the background variables accounted for 62% of the variance in African American adolescents' achievement at Wave 2. In

the following step when we entered the peer variables in the regression analyses, we found that the only significant peer predictor associated with their change in achievement was African American adolescents' negative peer orientation ($\beta = -.11$, $p < .01$). Having a negative peer orientation was negatively correlated to their change in achievement. The perceived positive peer characteristics by negative peer orientation interaction was significant (See Figure 11). Figure 11 shows that for most African American adolescents, their peers' positive peer characteristics did not influence their change in achievement; but for those with high negative peer orientation, there was a positive relation between perceived positive peer characteristics and change in achievement.

Truancy from Classes. In the first step of our one-time point logistic regression analysis, we entered the sociodemographic and background variables, which were all not related to whether the adolescent had ever skipped classes at Wave 2 (See Table 7). Adding the peer variables significantly contributed to predicting whether the youth skipped classes at Wave 2. Both perceived negative peer characteristics ($B = 1.10$, $p < .001$) and negative peer orientation ($B = .99$, $p < .001$) were positively related to whether the youth skipped classes at Wave 2. Neither of the interaction term were significant.

In the longitudinal logistic regression analysis, we included the Wave 1 truancy from class variable. Whether the adolescent skipped classes at Wave 1 was the only significant background predictor in the first step ($B = 1.28$, $p < .01$). In the second step, both perceived negative peer characteristics ($B = 1.0$, $p < .001$) and negative peer orientation ($B = .98$, $p < .001$) were positively related to African American adolescents' change in truancy status. Both interaction terms were not significant.

Differences Between African Adolescents and European Americans

After examining how the relations among the peer variables contributed to explaining within group differences for students within each ethnic group, we then calculated the t-statistic to determine whether the unstandardized coefficients for each variable of interest was significantly different between the two groups. For all analyses, the relations among the peer

variables and motivational variables as well as the relations among the peer variables and the truancy outcome did not differ between ethnic groups. There were 3 significant between-group differences in the regression analyses on achievement. There was a significant group difference for the relation between perceptions of negative peer characteristics and students' achievement ($t = 2.86$, $p < .05$). Although African American students' achievement were not affected by perceived negative peer characteristics, there was a negative relation between perceived negative peer characteristics and European American adolescents' grades (See Figure 12). Another significant group difference pertained to the association between negative peer orientation and students' grades in the eighth grade ($t = 3.39$, $p < .01$). As shown in Figure 13, European American adolescents' negative peer orientation was not related to their achievement but for African American adolescents, there was a negative relation between negative peer orientation and their school performance. There was also an Ethnicity X Perceived Positive Peer Characteristics X Negative Peer Orientation interaction ($t = 2.03$, $p < .05$). As indicated in Table 8, there was no interaction between perceived positive peer characteristics and negative peer orientation on European American adolescents' achievement at Wave 2. As shown in Table 9 and Figure 10, there was a significant interaction between perceived positive peer influence and negative peer orientation on African American adolescents' 8th-grade achievement.

The same group differences held for the analyses on students' change in achievement. European American and African American students' change in achievement were differently affected by perceived negative peer characteristics ($t = 2.07$, $p < .05$) and negative peer orientation ($t = 2.00$, $p < .05$). There was a negative relation between perceived negative peer characteristics and change in achievement for European American adolescents but African American adolescents' changes in school performance were not affected by perceived negative peer characteristics. African Americans' changes in achievement were negatively related to their negative peer orientation but there was no relation between negative peer orientation and change in achievement for European American adolescents. There was also a significant Ethnicity X Perceived Positive Peer Characteristics X Negative Peer Orientation ($t = 3.35$, $p < .01$) on

students' change in achievement. Although with each ethnic group there was a Perceived Positive Peer Characteristics X Negative Peer Orientation interaction effect on change in achievement (See Tables 8 and 9), the patterns of the interaction are different as shown in Figures 3 and Figures 11.

## Discussion

We began this article by looking at the relation among peer context and adolescent academic motivation and behavior separately for youths of different ethnic groups because there was not sufficient evidence that the conclusions of previous research could be generalize across European American and African American adolescents. The present study provides some support that the relations between peer context and academic motivation and between peer context and academic misbehaviors are similar for European American and African American adolescents; however, the data also suggest that the relation between peer context and adolescents' achievement may be different. Regardless of the outcome variables, the results for the cross-sectional analyses were similar to the longitudinal analyses. In light of these findings, our discussion will first focus on the implications of the present data in terms of whether peer influence is due to selection or socialization effects. Then our discussion of the relations among peer influence and achievement motivation and truancy will be presented across ethnic groups. We follow with a discussion of the results pertaining to school performance for each ethnic group as well as looking at the between-group differences, and we conclude with a description of the limitations of the present study and suggestions for future research.

### Peer Influence: Is It Selection or Socialization?

The findings indicate that peer influence may be the result of both self-selection and peer socialization. First, the zero-order correlations (See Table 2) demonstrate that adolescents' perceived peer characteristics were related to their prior motivation, misbehavior, and achievement at Wave 1: The significant relations among the peer variables and adolescents school attitudes and behaviors at Wave 1 suggest that adolescents select friends who are like them in terms of their orientation towards school. Additional evidence of self-selection is shown

in the graphs depicting the interaction effect of perceived positive peer characteristics and negative peer orientation on motivation (See Figures 4 and 6). In each of these interaction graphs, adolescents who reported the lowest motivation associated with peers who were not very positive about school, regardless of their own negative peer orientation: Adolescents who were the least motivated about school had the fewest friends who were positive about school, and this was not dependent on whether they had a high or low negative peer orientation. In general, adolescents who had more friends who were positive about school were more academically motivated than those with few friends who endorsed school positively.

On the other hand, there is also some support that peer influence is due to peer socialization effects. Whereas most previous research on adolescent peer groups used synchronous data or have focused on negative peer influences (e.g. Brown, Clasen, & Eicher; Fordham & Ogbu, 1986), the present study used longitudinal data to show that even after controlling for Wave 1 motivation or behavior, the relations among the peer variables and the Wave 2 motivation and behavior are the same as the synchronous analyses. These longitudinal analyses suggest that these peer variables are related to their change in motivation, misbehavior, and achievement: For example, associating with positive peers is related to European American and African American adolescents' increases in intrinsic motivation, increases in perceived importance of school, and increases in educational expectations; in contrast, associating with many friends who are negative about school is related to both European American and African American youth's increased likelihood of skipping classes. These relations indicate that over time, the motivation of adolescents who have many friends who are positive about school are enhanced while the motivation of those adolescents who have fewer friends who are positive about school report is undermined. Likewise, those adolescents who have more friends who are negative about school indicate that they are more likely to skip school over the course of their junior high school years. Furthermore, the interaction graphs (See Figures 1-2, 5, and 8) also depict these peer socialization effects, where those who have many friends who are positive

about school have greater increase in motivation than those youths who report fewer friends who endorse school positively.

These findings are consistent with the conclusions of previous research: For those adolescents whose friends had similar levels of school adjustment as themselves, their friends reinforced their own attitudes and behaviors over the course of a year; In contrast, for youth who had different levels of school adjustment from their friends, these adolescents' satisfaction with school and school performance changed in the direction of their peers' beliefs and behaviors (Davies & Kandel, 1981; Epstein, 1983; Mounts & Steinberg, 1995). Similarly, other research indicates that for males, their level of internalized distress is affected by the socialization effect of their peer group, in which they become more psychologically distressed over time (Hogue & Steinberg, 1996).

The Relation between Peers and Achievement Motivation and the Relation between Peers and Truancy for European American and African American Adolescents

In general, the bivariate correlations (See Table 2) and the regression analyses (See Tables 3-5) showed that for both European American and African American adolescents, the magnitude of the relation between perceived negative peer characteristics and academic motivation was smaller than the size of the relations between perceived positive peer characteristics and motivation and the relation between negative peer orientation and motivation. In contrast, the magnitude of the relation between perceived positive peer characteristics and truancy was smaller than the size of the relation between perceived negative peer characteristics and truancy and the relation between negative peer orientation and truancy (See Tables 3 and 7).

These findings show that adolescents' peers have both a positive and negative impact on adolescents' attitudes and behaviors: Adolescents' perceptions of their peers' positive school characteristics support their own intrinsic motivation, their beliefs that school is important, and their educational expectations while these perceived negative characteristics of their peer group influence adolescents to engage in undesirable behaviors, like skipping school. This is consistent with previous research with European American adolescents showing that on average, positive

dimensions of the peer group are related to adolescents' positive orientation towards school and negative facets of adolescents' peer group are related to their engagement in delinquent activities (Brown, Eicher, & Clasen, 1986). But more importantly, the results in the present study also substantiated these findings for African American adolescents. Previous research on African Americans implicate that their peers are responsible for encouraging negative attitudes towards school, but the findings in our study present a different perspective---these African Americans' peers had a positive influence on their orientation towards school (Fordham & Ogbu, 1986).

Furthermore, adolescents' negative peer orientation is an important factor in looking at the relations between perceived peer characteristics and adolescents' academic motivation and truancy from classes. In general, adolescents' susceptibility to conform to their peers in negative situations had a main and interactive effect on perceived positive peer characteristics on adolescents' academic motivation, and similarly, their negative peer orientation had a main effect on adolescents' likelihood to skip school. These results suggest that adolescents are not all affected by peer influences; the extent that peers influence adolescents can depend on individual differences in their own orientation to their peers. Again, these findings were true for both the European American and African American adolescents. Most studies about African American peer groups have neglected to look at individual differences in susceptibility to conform to their peer in negative situations; our study show that negative peer orientation influence the degree that their peers influence them.

Thus, the data in the present study illustrate that peer influence is multidimensional in that peers have both positive and negative influences and peer influence depends on adolescents' own negative peer orientation. In addition, the present study's multidimensional perspective demonstrates that previous research on African American peers, which have focused primarily on negative peer influence, have shown an incomplete, and perhaps biased, picture of African American peer socialization (Fordham & Ogbu, 1986; Slaughter-Defoe, Nakagawa, Takanishi, & Johnson, 1990).

Relation between Peer Context and Achievement

The findings pertaining to peer influence on adolescents' academic achievement is less straightforward than the results pertaining to the motivational and truancy outcome measure. Specifically, peer characteristics and negative peer orientation have different effects on African American and European American adolescents' achievement, unlike the results for the motivation and truancy outcomes which were similar across the two groups.

European American Adolescents. Both the zero-order correlations (See Table 3) and the regression analyses (See Table 8) indicated that for European American adolescents perceived negative peer characteristics was the strongest predictor among the 3 peer variables in the analyses of achievement and change in achievement. European American adolescents with lower achievement tend to have more friends who are negative about school than their European American counterparts who are doing better in school. This may indicate that European American adolescents who are doing poorly in school associate with peers who do not value school even if they are doing OK. Associating with friends who are negative about school is also related to decrease in their school achievement over time. This is consistent with past evidence with European Americans' and their peer networks being similar in terms of school performance due to selection and socialization (Epstein, 1983; Davies & Kandel, 1978; Steinberg, 1996).

Interestingly, there was only a significant interaction effect of perceived positive peer characteristics and negative peer orientation on European Americans' change in achievement but not on the synchronous analyses of achievement. The most positive change in achievement was for those adolescents who held the lowest negative peer orientation and who had the most friends with positive school characteristics: Having multiple protective factors enhanced these adolescents' school performance (Jessor, Van Den Bos, Vanderryn, Costa, & Turbine, 1995).

African American Adolescents. The bivariate correlations (See Table 2) revealed that negative peer orientation was more strongly related to African American adolescents' school performance and change in achievement than perceived peer characteristics; in fact, both positive and negative peer characteristics were not even related to African American youths' change in performance: After controlling for other variables, negative peer orientation was the only

significant peer predictor of African American adolescents' achievement and change in achievement (See Table 9). These findings on a socioeconomically diverse sample of African Americans contradict past research which has suggested that African American adolescents' friends' negative influences are responsible for their lower academic achievement (Fordham & Ogbu, 1986); our study suggests that it is not this monolithic negative peer influence that is responsible for African Americans' decreased performance. These contradictory findings may reflect the fact that previous research focused only on the negative influences of peers and our study looks at the context of peers in a multidimensional manner: As a result, these different perspectives create dissimilar pictures of the relation between peer influence and achievement for African American youths. To ascertain additional evidence of this, we conducted a regression analysis on achievement without the perceived positive characteristics and negative peer orientation, and we found that perceived negative peer characteristics was indeed negatively associated with achievement when we omitted the other peer context variables.

As mentioned already, the most predictive peer-related variable for African Americans is their negative peer orientation, which had both a main and interactive effect on achievement. Although very little research has been conducted on the interactive effects of peer influence and peer orientation on African American adolescents' achievement, the findings shown in Figures 10 and 11 show that peers can have a buffering effect on their achievement and change in achievement: The grades of African Americans who had a high negative peer orientation and had many friends who were positive about school were better than their counterparts who had high negative peer orientation and few friends who endorsed school positively. We need to conduct further research in order to understand the complex interplay among peer influences, negative peer orientation, and African American adolescents' achievement. Furthermore, in light of the significance of negative peer orientation for African American adolescents, we need to learn more about what makes some more susceptible to conformity in negative situations than others; previous research have documented that European American adolescents' alienation from their families or school is responsible for their higher negative peer orientation, and further

investigation is needed to determine if these same variables explain African American adolescents' negative peer orientation (Fuligni & Eccles, 1993).

Ethnic Differences in the Relation between Peer Context and Achievement The present study show some evidence that assumptions of homogeneous models for looking at the relation between peer context and achievement outcomes may not hold. The most important peer predictor for European Americans was negative peer characteristics and the most important peer variable for African Americans was negative peer orientation (See Tables 8-9 and Figures 12-15), and there were significant between-group differences in these predictors' effects on achievement. In addition, the types of interactive effect between positive peer influence and negative peer orientation was different across ethnic groups (See Figures 3 and 10-11). These findings are consistent with previous evidence that there are ethnic differences in the relations among peer influence and achievement (Steinberg, Dornbusch, & Brown, 1992). However, while Steinberg et al. found that African American youths' achievement were more negatively influenced by their peers than were European American adolescents', the results of our study indicate that European American adolescents' achievement were more influenced by their peers' negative school characteristics than were African American adolescents'. This may be because previous research on ethnic group differences in peer influence have not accounted for individual differences in susceptibility to conformity and our study included both peer characteristics and negative peer orientation. Furthermore, our study provides further evidence that findings and theoretical models based on samples of European American adolescents may not generalize to adolescents of other ethnicities (Spencer & Dornbusch, 1990).

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Appendix A

Items Used to Measure Perceived Positive and Negative Peer Characteristics

| Measure/Item | Factor Loading for All Students | Factor Loading for African Americans | Factor Loading for European Americans |
|---|---|---|---|
| Perceived Negative Peer Characteristics | | | |
| How many of the friends that you spend most of your time think working hard to get good grades is a waste of time? (1=none of them to 5=all of them) | .74 | .73 | .77 |
| How many of the friends that you spend most of your time with skip school without an excuse? (1=none of them to 5=all of them) | .74 | .69 | .81 |
| How many of the friends that you spend most of your time with cheat on school tests? (1=none of them to 5=all of them) | .75 | .77 | .71 |
| Perceived Positive Peer Characteristics | | | |
| How many of the friends that you spend most of your time with do well in school? (1=none of them to 5=all of them) | .72 | .69 | .72 |
| How many of the friends that you spend most of your time with plan to go to college? (1=none of them to 5=all of them) | .68 | .67 | .74 |
| How many of the friends that you spend most of your time with like to discuss schoolwork or other things with you? (1=none of them to 5=all of them) | .76 | .76 | .77 |
| How many of the friends that you spend most of your time with think it is important to work hard on schoolwork? (1=none of them to 5=all of them) | .64 | .65 | .64 |

Items Used to Measure Negative Peer Orientation

| Measure/Item | Factor Loading for All Students | Factor Loading for African Americans | Factor Loading for European Americans |
|---|---|---|---|
| Negative Peer Orientation | | | |

| | | | |
|---|---|---|---|
| Do you agree or disagree that you would act dumber or less talented than you really are in order to make someone like you? (1=strongly disagree to 4=strongly agree) | .73 | .75 | .67 |
| Do you agree or disagree that it is O.K. to let your schoolwork slip and get a lower grade in order to be popular with friends? (1=strongly disagree to 4=strongly agree) | .78 | .80 | .74 |
| How much does the amount of time you spend with your friends keep you away from doing things you ought to do? (1=not at all to 7=a lot) | .65 | .61 | .67 |
| How often is it O.K. to break some of your parents' rules in order to keep your friends? (1=not at all to 7=a lot) | .75 | .74 | .77 |

Appendix B

Items Used to Measure Intrinsic Motivation, Perceived Importance of School, and Educational Expectations

| Measure/Item | Factor Loading for All Students | | Factor Loading for African Americans | | Factor Loading for European Americans | |
|---|---|---|---|---|---|---|
| | 7th grade | 8th grade | 7th grade | 8th grade | 7th grade | 8th grade |
| Intrinsic Motivation | | | | | | |
| I go to school because I enjoy my classes. (1 = not an important reason to 7 = a very important reason) | .78 | .90 | .78 | .90 | .76 | .91 |
| In general I like school a lot. (1 = strongly agree to 5 = strongly disagree; reverse-coded) | .90 | .80 | .90 | .74 | .91 | .83 |
| Perceived Importance of School | | | | | | |
| Compared to other kids your age, how important is math to you? (1 = much less important to me than to other kids to 7 = much more important to me than to other kids) | .91 | .92 | .92 | .95 | .94 | .93 |
| Compared to other kids your age, how important are other school subjects to you? (1 = much less important to me than to other kids to 7 = much more important to me than to other kids) | .90 | .91 | .90 | .87 | .90 | .90 |

Educational Expectations

We can't always do what we most want to do. How far do you think you actually will go in school?
1=8th grade or less 2=9th-11th grade 3=graduate from high school 4=post high school vocational or technical training 5=some college 6=graduate from a business college or a two-year college with associate degree 7=graduate from a 4-year college 8=get a masters degree or a teaching credential 9=get a law degree, a Ph. D., or a medical doctor's degree

Appendix C

Items Used to Measure Truancy from Classes at Wave 1 and 2

Truancy from Classes (Wave 1):

How often, if ever, do you skip school or cut classes?
1=never 2=hardly ever 3=sometimes 4=often

Truancy from Classes (Wave 2):

In the 8th-grade, how often, did you skip school or cut classes?
1=never 2=once or twice a semester 3=a few times a month 4=about once a month 5=more than once a month

## Footnotes

[1]The Maryland Adolescent Growth in Context Study is being conducted by Jacquelynne Eccles and Arnold Sameroff.

Table 1

Descriptive Statistics for All Variables

| Variables | African Americans (N = 623) | European Americans (N = 331) | t-value |
|---|---|---|---|
| Percentage of Females | 46.00% | 52.00% | ------ |
| Socioeconomic status | | | |
| M | -.16 | .22 | |
| SD | .82 | .78 | 8.22*** |
| California Achievement Test (3rd Grade) | | | |
| M | 399.81 | 423.58 | |
| SD | 38.80 | 39.08 | 8.52*** |
| California Achievement Test (5th Grade) | | | |
| M | 481.04 | 514.67 | |
| SD | 48.62 | 53.59 | 10.05*** |
| Perceived Positive Peer Characteristics | | | |
| M | 3.37 | 3.38 | |
| SD | .69 | .70 | .19 |
| Perceived Negative Peer Characteristics | | | |
| M | 1.80 | 1.87 | |
| SD | .74 | .73 | .45 |
| Negative Peer Orientation | | | |
| M | 1.84 | 2.00 | |
| SD | .71 | .67 | 3.46*** |

| | | | |
|---|---|---|---|
| Intrinsic School Motivation (Wave 1) | | | |
| M | 3.49 | 3.26 | |
| SD | 1.05 | 1.06 | 3.81*** |
| Perceived Importance of School (Wave 1) | | | |
| M | 5.60 | 4.88 | |
| SD | 1.27 | 1.30 | 4.60*** |
| Educational Expectations (Wave 1) | | | |
| M | 6.78 | 6.89 | |
| SD | 1.77 | 1.53 | 1.08 |
| Grade Point Average (Wave 1) | | | |
| M | 3.45 | 3.90 | |
| SD | .87 | .86 | 9.01*** |
| Percentage of Adolescents Who Have Skipped | | | |
| Classes (Wave 1) | 9.60% | 9.80% | ------ |
| Intrinsic Motivation (Wave 2) | | | |
| M | 3.72 | 3.49 | |
| SD | 1.18 | 1.23 | 2.91** |
| Perceptions of Importance of School (Wave 2) | | | |
| M | 5.27 | 4.88 | |
| SD | 1.28 | 1.30 | 4.48*** |
| Educational Expectations (Wave 2) | | | |
| M | 7.00 | 7.13 | |
| SD | 1.64 | 1.37 | .83 |
| Grade Point Average (Wave 2) | | | |
| M | 3.44 | 3.98 | |
| SD | .86 | .76 | 10.45*** |

| | | | |
|---|---|---|---|
| Percentage of Adolescents Who Have Skipped | | | |
| Classes (Wave 2) | 38.10% | 35.40% | ------ |

Note:

*p = .05, **p = .01, ***p = .001.

Table 2

Correlations for All Variables for African American and European American Adolescents

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| 1. Gender | ----- | -.01 | .15*** | .20*** | -.04 | -.15 | .02 | -.01 |
| 2. SES | -.04 | ----- | .33*** | .02 | -.04 | -.04 | -.08* | -.06 |
| 3. Prior Academic Competence | .04 | .34*** | ----- | .15** | -.09* | -.11* | -.04 | -.03 |
| 4. Perceived Positive Peer Characteristics | .21*** | .17** | .19** | ----- | -.34*** | -.27*** | .24*** | .12** |
| 5. Perceived Negative Peer Characteristics | -.18** | -.09 | -.20** | -.45*** | ----- | .46*** | -.17*** | -.15*** |
| 6. Negative Peer Orientation | -.19*** | .00 | -.22*** | -.32*** | .54*** | ----- | -.12** | -.15*** |
| 7. Intrinsic Motivation (Wave 1) | .16** | -.05 | .02 | .29*** | -.17** | -.22*** | ----- | .39*** |
| 8. Perceived Importance of School (Wave 1) | .07 | -.01 | -.03 | .15** | -.17** | -.16** | .39*** | ----- |
| 9. Educational Expectations (Wave 1) | .09 | .31*** | .38*** | .19*** | -.09 | -.15** | .08 | .16** |
| 10. Achievement (Wave 1) | .26*** | .31*** | .46*** | .25*** | -.25*** | -.19** | .15** | .10* |
| 11. Truancy from Classes (Wave 1) | -.09 | -.05 | .02 | -.09 | .18** | .12* | -.23*** | -.12* |
| 12. Intrinsic Motivation (Wave 2) | .14* | -.07 | .09 | .34*** | -.24*** | -.29*** | .33*** | .20*** |
| 13. Perceived Importance of School (Wave 2) | -.02 | .05 | .13* | .29*** | -.24*** | -.30*** | .18** | .19*** |
| 14. Educational Expectations (Wave 2) | .20*** | .25*** | .34*** | .32*** | -.20*** | -.24*** | .20*** | .20*** |
| 15. Achievement (Wave 2) | .23*** | .36*** | .48*** | .28*** | -.30*** | -.20** | .17** | .09 |
| 16. Truancy from Classes (Wave 2) | -.11* | -.01 | -.05 | -.27*** | .43*** | .40*** | -.17** | -.19** |

| | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|
| 1. Gender | .08 | .33*** | -.01 | .03 | .02 | .15*** | .34*** | -.06 |
| 2. SES | .23*** | .32*** | -.08* | -.06 | -.01 | .29*** | .28*** | -.06 |
| 3. Prior Academic Competence | .21*** | .44*** | .01 | -.07 | .08 | .34*** | .44*** | -.09 |
| 4. Perceived Positive Peer Characteristics | .16*** | .15*** | -.12** | .37*** | .29*** | .25*** | .18*** | -.22*** |
| 5. Perceived Negative Peer Characteristics | -.10* | -.17*** | .20*** | -.23*** | -.25*** | -.15*** | -.15*** | .39*** |
| 6. Negative Peer Orientation | -.15*** | -.22*** | .11** | -.18*** | -.27*** | -.16*** | -.29*** | .29*** |
| 7. Intrinsic Motivation (Wave 1) | .11** | .14*** | -.14*** | .44*** | .25*** | .11** | .11** | -.11** |
| 8. Perceived Importance of School (Wave 1) | .08 | .14*** | -.07* | .26*** | .27*** | .04 | .08* | -.11** |
| 9. Educational Expectations (Wave 1) | ----- | .23*** | -.10** | .06 | .15*** | .45*** | .24*** | -.04 |
| 10. Achievement (Wave 1) | .28*** | ----- | -.13*** | .10* | .18*** | .32*** | .77*** | -.26*** |
| 11. Truancy from Classes (Wave 1) | -.05 | -.22*** | ----- | -.06 | -.01 | -.07 | -.09* | .21*** |
| 12. Intrinsic Motivation (Wave 2) | .09 | .10 | -.10 | ----- | .44*** | .12** | .09* | -.18*** |
| 13. Perceived Importance of School (Wave 2) | .12* | .16** | -.07 | .32*** | ----- | .17*** | .26*** | -.18*** |
| 14. Educational Expectations (Wave 2) | .53*** | .36*** | -.08 | .13* | .14** | ----- | .36*** | -.12** |
| 15. Achievement (Wave 2) | .28*** | .75*** | -.22*** | .10 | .28*** | .37*** | ----- | -.24*** |
| 16. Truancy from Classes (Wave 2) | -.03 | -.19** | .19*** | -.17** | -.24*** | -.08 | -.26*** | ----- |

Note. Correlations for European American adolescents are below diagonal and correlations for African American youth are above the diagonal.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3

Summary of Hierarchical Regression Analyses for Variables Predicting European American and African American Adolescents' Intrinsic Motivation and Change in Intrinsic Motivation

| | European Americans | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Intrinsic Motivation at W2---B(β) | | | | Change in Intrinsic Motivation---B(β) | | | |
| | Step 1 | Step 2 | Step 3A | Step 3B | Step 1 | Step 2 | Step 3A | Step 3B |
| Gender | .34( .14)* | .06( .03) | .06( .02) | .06( .03) | .22( .09) | .04( .01) | .03( .01) | .03( .01) |
| SES | -.12(-.08) | -.18(-.11) | -.20(-.13)* | -.19(-.12) | -.09(-.05) | -.15(-.09) | -.16(-.10) | -.15(-.10) |
| Academic Competence | .00( .11) | .00( .03) | .00( .03) | .00( .03) | .00( .10) | .00( .04) | .00( .04) | .00( .04) |
| Intrinsic Motivation (W1) | | | | | .37( .32)*** | .25( .21)*** | .25( .21)*** | .25( .21)*** |
| Positive Peer Characteristics | | .57( .32)*** | .57( .33)*** | .55( .31)*** | | .47( .27)*** | .47( .27)*** | .44( .25)*** |
| Negative Peer Characteristics | | .11( .06) | .10( .06) | .05( .03) | | .10( .06) | .09( .05) | .04( .02) |
| Negative Peer Orientation | | -.40(-.22)*** | -.42(-.23)*** | -.44(-.25)*** | | -.33(-.19)** | -.36(-.20)** | -.38(-.21)** |
| Positive Peer Characteristics X Negative Peer Orientation | | | -.22(-.09) | | | | -.24(-.09)† | |
| Negative Peer Characteristics X Negative Peer Orientation | | | | .19( .10) | | | | .20( .10)† |
| | Step 1: Δ in $R^2$ = .02* | | F (3, 274) = 3.22* | | Step 1: Δ in $R^2$ = .13*** | | F (4, 273) = 10.26*** | |
| | Step 2: Δ in $R^2$ = .15*** | | F (3, 271) = 16.15*** | | Step 2: Δ in $R^2$ = .09*** | | F (3, 270) = 10.21*** | |
| | Step 3A: Δ in $R^2$ = .00 | | F (1, 270) = 2.44 | | Step 3A: Δ in $R^2$ = .01† | | F (1, 269) = 2.85† | |
| | Step 3B: Δ in $R^2$ = .00 | | F (1, 270) = 2.69 | | Step 3B: Δ in $R^2$ = .01† | | F (1, 269 ) = 2.99† | |
| | Total Adj. $R^2$ = .16*** | | F (7, 270) = 8.92*** | | Total Adj. $R^2$ = .20*** | | F (8, 269) = 9.92*** | |

African Americans

| | Intrinsic Motivation at W2---B(β) | | | | Change in Intrinsic Motivation---B(β) | | | |
|---|---|---|---|---|---|---|---|---|
| | Step 1 | Step 2 | Step 3A | Step 3B | Step 1 | Step 2 | Step 3A | Step 3B |
| Gender | .02( .01) | -.14(-.06) | -.14(-.06) | -.14(-.06) | .02 (.01) | -.10(-.04) | -.11(-.05) | -.10(-.04) |
| SES | -.06(-.04) | -.07(-.05) | -.06(-.04) | -.06(-.04) | .00( .00) | -.02(-.01) | -.02(-.01) | -.02(-.01) |
| Academic Competence | .00(-.05) | .00(-.11)* | .00(-.10)* | .00(-.10)* | .00(-.04) | .00(-.08) | .00(-.08)* | .00(-.08) |
| Intrinsic Motivation (W1) | | | | | .48( .43)*** | .39( .35)*** | .38( .34)*** | .39( .35)*** |
| Positive Peer Characteristics | | .56( .32)*** | .55( .31)*** | .55( .31)*** | | .42( .24)*** | .41( .24)*** | .41( .24)*** |
| Negative Peer Characteristics | | -.09(-.06) | -.11(-.07) | -.11(-.07) | | -.04(-.02) | -.06(-.04) | -.04(-.03) |
| Negative Peer Orientation | | -.15(-.09)* | -.16(-.10)* | -.16(-.10)* | | -.15(-.09)* | -.15(-.09)* | -.15(-.09)* |
| Positive Peer Characteristics X Negative Peer Orientation | | | -.33(-.15)*** | | | | -.25(-.11)** | |
| Negative Peer Characteristics X Negative Peer Orientation | | | | .04( .02) | | | | .02( .01) |
| | Step 1: Δ in $R^2$ = .01 | | F (3, 493) = 1.00 | | Step 1: Δ in $R^2$ = .19*** | | F (4, 491) = 28.11*** | |
| | Step 2: Δ in $R^2$ = .14*** | | F (3, 490) = 26.58*** | | Step 2: Δ in $R^2$ = .07*** | | F (3, 488) = 15.93*** | |
| | Step 3A: Δ in $R^2$ = .02*** | | F (1, 489) = 12.51*** | | Step 3A: Δ in $R^2$ = .01** | | F (1, 487 ) = 7.97** | |
| | Step 3B: Δ in $R^2$ = .00 | | F (1, 489) = .24 | | Step 3B: Δ in $R^2$ = .00 | | F (1, 487) = .07 | |
| | Total Adj. $R^2$ = .16*** | | F (7, 489) = 13.95*** | | Total Adj. $R^2$ = .26*** | | F (8, 487) = 22.61*** | |

Note. All predictor variables were centered. † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 4

Summary of Hierarchical Regression Analyses for Variables Predicting European American and African American Adolescents' Perceptions of the Importance of School and Change in Their Perceptions of the Importance of School

| | European Americans | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Perceived Importance of School at W2---B(β) | | | | Change in Perceived Importance of School---B(β) | | | |
| | Step 1 | Step 2 | Step 3A | Step 3B | Step 1 | Step 2 | Step 3A | Step 3B |
| Gender | .00( .00) | -.27(-.10) | -.27(-.10) | -.27(-.10) | -.01(-.00) | -.24(-.09) | -.24(-.09) | -.24(-.09) |
| SES | -.06(-.03) | -.10(-.06) | -.10(-.06) | -.11(-.07) | -.05(-.03) | -.09(-.06) | -.09(-.05) | -.10(-.06) |
| Academic Competence | .00( .14)* | .00( .06) | .00( .06) | .00( .06) | .00( .15)* | .00( .08) | .00( .07) | .00( .08) |
| Importance of School (W1) | | | | | .29( .27)*** | .21( .20)*** | .21( .20)*** | .21( .20)*** |
| Positive Peer Characteristics | | .36( .20)** | .36( .20)** | .34( .19)** | | .31( .17)** | .31( .17)** | .30( .16)* |
| Negative Peer Characteristics | | -.11(-.06) | -.11(-.06) | -.16(-.09) | | -.09(-.05) | -.09(-.05) | -.13(-.07) |
| Negative Peer Orientation | | -.46(-.24)*** | -.46(-.24)*** | -.49(-.26)*** | | -.41(-.21)** | -.40(-.21)** | -.44(-.23)** |
| Positive Peer Characteristics X Negative Peer Orientation | | | .05( .02) | | | | .05(.02) | |
| Negative Peer Characteristics X Negative Peer Orientation | | | | .14( .07) | | | | .14( .07) |
| | Step 1: Δ in $R^2$ = .01 | | F (3, 274) = 1.67 | | Step 1: Δ in $R^2$ = .09 | | F (4, 271) = 6.99*** | |
| | Step 2: Δ in $R^2$ = .14*** | | F (3, 271) = 14.54*** | | Step 2: Δ in $R^2$ = .09*** | | F (3, 268) = 10.62*** | |
| | Step 3A: Δ in $R^2$ = .00 | | F (1, 270) = .10 | | Step 3A: Δ in $R^2$ = .00 | | F (1, 267) = .10 | |
| | Step 3B: Δ in $R^2$ = .00 | | F (1, 270) = 1.29 | | Step 3B: Δ in $R^2$ = .00 | | F (1, 267) = 1.26 | |
| | Total Adj. $R^2$ = .15*** | | F (7, 270) = 5.81*** | | Total Adj. $R^2$ = .17*** | | F (8, 267) = 8.01*** | |

| | African Americans | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Perceived Importance of School at W2---B(β) | | | | Change in Perceived Importance of School---B(β) | | | |
| | Step 1 | Step 2 | Step 3A | Step 3B | Step 1 | Step 2 | Step 3A | Step 3B |
| Gender | -.10(-.04) | -.28(-.11)* | -.28(-.11)* | -.26(-.10)* | -.10(-.04) | -.24(-.10)* | -.25(-.10)* | -.22(-.09)* |
| SES | -.02(-.02) | -.04(-.03) | -.04(-.02) | -.03(-.02) | .02( .01) | -.01(-.01) | -.01( .00) | .00(.00) |
| Academic Competence | .00( .09) | .00( .04) | .00( .04) | .00( .04) | .00( .08) | .00( .04) | .00( .04) | .00(.04) |
| Importance of School (W1) | | | | | .25( .26)*** | .18( .19)*** | .18( .19)*** | .19( .20)*** |
| Positive Peer Characteristics | | .40( .21)*** | .39( .21)*** | .37( .20)*** | | .33( .18)*** | .32( .17)*** | .31( .16)*** |
| Negative Peer Characteristics | | -.14(-.09) | -.16(-.09) | -.20(-.12)* | | -.13(-.08) | -.14(-.09) | -.18(-.11)* |
| Negative Peer Orientation | | -.39(-.22)*** | -.39(-.22)*** | -.45(-.26)*** | | -.33(-.19)*** | -.34(-.19)*** | -.40(-.23)*** |
| Positive Peer Characteristics X Negative Peer Orientation | | | -.17(-.07)† | | | | -.23(-.09)* | |
| Negative Peer Characteristics X Negative Peer Orientation | | | | .21( .12)* | | | | .23( .13)** |
| | Step 1: Δ in $R^2$ = .01 | | F (3, 491) = 1.37 | | Step 1: Δ in $R^2$ = .07*** | | F (4, 483) = 9.49*** | |
| | Step 2: Δ in $R^2$ = .15*** | | F (3, 488) = 28.83*** | | Step 2: Δ in $R^2$ = .11*** | | F (3, 480) = 20.57 | |
| | Step 3A: Δ in $R^2$ = .01† | | F (1, 487) = 3.03† | | Step 3A: Δ in $R^2$ = .01* | | F (1, 479) = 4.98* | |
| | Step 3B: Δ in $R^2$ = .01* | | F (1, 487) = 6.55* | | Step 3B: Δ in $R^2$ = .01** | | F (1, 479) = 7.92** | |
| | Total Adj. $R^2$ = .15*** | | F (7, 487) = 14.13*** | | Total Adj. $R^2$ = .17*** | | F (8, 479) = 13.77*** | |

Note. All predictor variables were centered. † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 5

Summary of Hierarchical Regression Analyses for Variables Predicting European American and African American Adolescents' Academic Expectations and Change in Academic Expectations

| | European Americans | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Academic Expectations at W2---B(β) | | | | Change in Academic Expectations---B(β) | | | |
| | Step 1 | Step 2 | Step 3A | Step 3B | Step 1 | Step 2 | Step 3A | Step 3B |
| Gender | .49( .19)** | .31( .11)* | .31( .11)* | .31( .11)* | .37( .14)** | .22( .08) | .22( .08) | .22( .08) |
| SES | .26( .15)* | .23( .13)* | .23( .13)* | .23( .13)* | .13( .08) | .10( .06) | .10( .06) | .10( .06) |
| Academic Competence | .01( .27)*** | .00( .22)*** | .00( .22)*** | .01( .22)*** | .00( .16)** | .00( .13)* | .00( .13)* | .00( .13)* |
| Academic Expectations (W1) | | | | | .37( .40)*** | .35( .37)*** | .35( .37)*** | .35( .37)*** |
| Positive Peer Characteristics | | .37( .19)** | .37( .19)** | .37( .20)** | | .31( .16)** | .31( .16)** | .31( .16)** |
| Negative Peer Characteristics | | .09( .05) | .09( .05) | .11( .06) | | .00( .00) | .00( .00) | .01( .01) |
| Negative Peer Orientation | | -.31(-.16)* | -.31(-.16)* | -.30(-.15)* | | -.19(-.10) | -.19(-.10) | -.18(-.09) |
| Positive Peer Characteristics X Negative Peer Orientation | | | .02( .01) | | | | .00( .00 | |
| Negative Peer Characteristics X Negative Peer Orientation | | | | -.07(-.03) | | | | -.04(-.02) |
| | Step 1: Δ in $R^2$ = .16*** | F (3, 274) = 17.37*** | | | Step 1: Δ in $R^2$ = .29*** | F (4, 273) = 28.24*** | | |
| | Step 2: Δ in $R^2$ = .06*** | F (3, 271) = 6.76*** | | | Step 2: Δ in $R^2$ = .04** | F (3, 270) = 5.15** | | |
| | Step 3A: Δ in $R^2$ = .00 | F (1, 270) = .01 | | | Step 3A: Δ in $R^2$ = .00 | F (1, 269) = .00 | | |
| | Step 3B: Δ in $R^2$ = .00 | F (1, 228) = .29 | | | Step 3B: Δ in $R^2$ = .00 | F (1, 269) = .09 | | |
| | Total Adj. $R^2$ = .22*** | F (7, 228) = 10.82*** | | | Total Adj. $R^2$ = .31*** | F (8, 269) = 16.65*** | | |

African Americans

| | Academic Expectations at W2---B(β) | | | | Change in Academic Expectations---B(β) | | | |
|---|---|---|---|---|---|---|---|---|
| | Step 1 | Step 2 | Step 3A | Step 3B | Step 1 | Step 2 | Step 3A | Step 3B |
| Gender | .29( .09)* | .16( .05) | .16( .05) | .16( .05) | .24( .07) | .16( .05) | .16( .05) | .16( .05) |
| SES | .45( .22)*** | .44( .21)*** | .43( .21)*** | .44( .21)*** | .24( .12)** | .25( .12)** | .24( .12)** | .25( .12)** |
| Academic Competence | .01( .26)*** | .01( .22)*** | .01( .22)*** | .01( .22)*** | .01( .21)*** | .01( .19)*** | .00( .19)*** | .01( .18)*** |
| Academic Expectations (W1) | | | | | .34( .35)*** | .31( .32)*** | .31( .32)*** | .31( .32)*** |
| Positive Peer Characteristics | | .44( .18)*** | .44( .18)*** | .44( .18)*** | | .36( .15)*** | .36( .15)*** | .34( .14)** |
| Negative Peer Characteristics | | -.09(-.04) | -.09(-.04) | -.11(-.05) | | -.12 (-.05) | -.11(-.05)*** | -.15(-.07) |
| Negative Peer Orientation | | -.11(-.05) | -.11(-.05) | -.14(-.06) | | -.05(-.02) | -.05(-.02) | -.10(-.04) |
| Positive Peer Characteristics X Negative Peer Orientation | | | .07( .02) | | | | .06( .02) | |
| Negative Peer Characteristics X Negative Peer Orientation | | | | .07( .03) | | | | .14( .06) |
| | Step 1: Δ in $R^2$ = .16*** | | F (3, 492) = 31.66*** | | Step 1: Δ in $R^2$ = .26*** | | F (4, 489) = 43.52*** | |
| | Step 2: Δ in $R^2$ = .05*** | | F (3, 489) = 9.34*** | | Step 2: Δ in $R^2$ = .03*** | | F (3, 486) = 6.89*** | |
| | Step 3A: Δ in $R^2$ = .00 | | F (1, 488) = .34 | | Step 3A: Δ in $R^2$ = .00 | | F (3, 485) = .27 | |
| | Step 3B: Δ in $R^2$ = .00 | | F (1, 488) = .43 | | Step 3B: Δ in $R^2$ = .00 | | F (3, 485) = 1.95 | |
| | Total Adj. $R^2$ = .20*** | | F (7, 488) = 18.30*** | | Total Adj. $R^2$ = .28*** | | F (8, 485) = 25.43*** | |

Note. All predictor variables were centered. † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 7

Summary of Logistic Regression Analyses for Variables Predicting European American and African American Adolescents' Skipping Classes and Change in Skipping Classes

| | European Americans | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Truancy from Classes at W2---B (Wald Statistic) | | | | Change in Truancy from Classes---B (Wald Statistic) | | | |
| | Step 1 | Step 2 | Step 3A | Step 3B | Step 1 | Step 2 | Step 3A | Step 3B |
| Gender | -.47(3.31) | .05(.03) | .05(.03) | .05(.02) | -.47(3.29) | .00(.00) | .00( .00) | .00( .00) |
| SES | .05( .07) | .17(.69) | .15(.49) | .18(.71) | .09(.22) | .22(1.06) | .19( .82) | .23(1.07) |
| Academic Competence | .00( .47) | .00(1.09) | .00(1.0) | .00(1.1) | .00(.67) | .00(.88) | .00( .88) | .00( .88) |
| Truancy from Classes at W1 | | | | | 1.28(7.5)** | 1.07(4.1)* | 1.04(3.9)* | 1.07(4.1)* |
| Positive Peer Characteristics | | -.37(2.46) | -.34(2.1) | -.36(2.3) | | -.33( 2.3) | -.33(1.9) | -.35(2.3) |
| Negative Peer Characteristics | | 1.1(14.6)*** | 1.1(14.9)*** | 1.1(14.9)*** | | 1.1(13.5)*** | 1.1(13.8)*** | 1.1(13.3)*** |
| Negative Peer Orientation | | .99(4.7)*** | .95(13.4)*** | 1.0(14.3)*** | | .98(13.9)*** | .95(13.0)*** | 1.0(13.3)*** |
| Positive Peer Characteristics X Negative Peer Orientation | | | -.36(1.0) | | | | -.30( .70) | |
| Negative Peer Characteristics X Negative Peer Orientation | | | | -.13(.14) | | | | -.09( .07) |
| | Step 1: Improvement: $\chi^2$ (3) = 4.12 | | | | Step 1: Improvement: $\chi^2$ (4) = 12.29* | | | |
| | Step 2: Improvement: $\chi^2$ (3) = 71.96*** | | | | Step 2: Improvement: $\chi^2$ (3)= 66.43*** | | | |
| | Step 3A: Improvement: $\chi^2$ (1) = 1.02 | | | | Step 3A: Improvement: $\chi^2$ (1) = .72 | | | |
| | Step 3B: Improvement: $\chi^2$ (1) = .14 | | | | Step 3B: Improvement: $\chi^2$ (1) = .00 | | | |
| | Overall Goodness of Fit: $\chi^2$ (6) = 266.46*** | | | | Overall Goodness of Fit: $\chi^2$ (7) = 262.66*** | | | |

| | African Americans | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Truancy from Classes at W2---B (Wald Statistic) | | | | Change in Truancy from Classes---B (Wald Statistic) | | | |
| | Step 1 | Step 2 | Step 3A | Step 3B | Step 1 | Step 2 | Step 3A | Step 3B |
| Gender | -.46(3.3) | .05(.03) | .05(.03) | .05(.02) | -.47(3.3) | .00( .00) | .00(.00) | .00(.00) |
| SES | .05( .07) | .17(.69) | .15(.49) | .18(.71) | .09( .22) | .22( 1.1) | .19(.82) | .23(1.1) |
| Academic Competence | .00( .47) | .00(1.1) | .00(1.1) | .00(1.1) | .00( .67) | .00( .88) | .00(.88) | .00(.00) |
| Truancy from Classes (W1) | | | | | 1.28(7.5)** | 1.07(4.1)* | 1.04(3.9)* | 1.04(4.1)* |
| Positive Peer Characteristics | | -.37(2.5) | -.34(2.1) | -.36(2.3) | | -.36(2.3) | -.33(1.9) | -.35(2.2) |
| Negative Peer Characteristics | | 1.1(14.6)*** | 1.1(14.9)*** | 1.1(14.9)*** | | 1.0(13.5)*** | 1.1(13.8)*** | 1.0(13.7)*** |
| Negative Peer Orientation | | .99(14.7)*** | .95(13.4)*** | 1.0(14.3)*** | | .98(13.9)*** | .95(13.0)*** | 1.0(13.3)*** |
| Positive Peer Characteristics X Negative Peer Orientation | | | -.36(1.0) | | | | -.30(.70) | |
| Negative Peer Characteristics X Negative Peer Orientation | | | | -.13(.14) | | | | -.09(.07) |
| | Step 1: Improvement: $\chi^2$ (3) = 4.12 | | | | Step 1: Improvement: $\chi^2$ (4) = 12.29* | | | |
| | Step 2: Improvement: $\chi^2$ (3) = 71.96*** | | | | Step 2: Improvement: $\chi^2$ (3) = 66.43*** | | | |
| | Step 3A: Improvement: $\chi^2$ (1) = 1.02 | | | | Step 3A: Improvement: $\chi^2$ (1) = .72 | | | |
| | Step 3B: Improvement: $\chi^2$ (1) = .14 | | | | Step 3B: Improvement: $\chi^2$ (1) = .06 | | | |
| | Overall Goodness of Fit: $\chi^2$ (6) = 263.55*** | | | | Overall Goodness of Fit: $\chi^2$ (7) = 263.04*** | | | |

Note. All predictor variables were centered. † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 6

Summary of Hierarchical Regression Analyses for Variables Predicting European American and African American Adolescents' Achievement and Change in Achievement

| | European Americans | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Achievement at W2---B(β) | | | | Change in Achievement---B(β) | | | |
| | Step 1 | Step 2 | Step 3A | Step 3B | Step 1 | Step 2 | Step 3A | Step 3B |
| Gender | .35( .23)*** | .27( .18)** | .27( .18)** | .27( .18)** | .10( .06) | .05( .03) | .05( .03) | .06( .04) |
| SES | .18( .18)** | .13( .13)* | .12( .13)* | .13( .13)* | .07( .07) | .04 ( .05) | .03( .03) | .04( .04) |
| Academic Competence | .01( .40)*** | .01( .37)*** | .01( .37)*** | .01( .37)*** | .00( .14)** | .00( .13)** | .00( .12)* | .00( .13)** |
| Achievement (W1) | | | | | .62( .66)*** | .59( .63)*** | .60( .64)*** | .59( .63)*** |
| Positive Peer Characteristics | | .08( .07) | .08( .07) | .07( .07) | | .06( .05) | .06( .06) | .05( .05) |
| Negative Peer Characteristics | | -.24(-.22)** | -.25(-.22)** | -.26(-.23)** | | -.13(-.11)* | -.14(-.12)* | -.14(-.13)* |
| Negative Peer Orientation | | .05( .04) | .04( .04) | .03( .03) | | .00( .00) | -.01(-.01) | -.01(-.01) |
| Positive Peer Characteristics X Negative Peer Orientation | | | -.08(-.05) | | | | -.16(-.10)* | |
| Negative Peer Characteristics X Negative Peer Orientation | | | | .06( .05) | | | | .07( .06) |
| | Step 1: Δ in $R^2$ = .29*** | | F (3, 232) = 33.43*** | | Step 1: Δ in $R^2$ = .60*** | | F (4, 230) = 87.93*** | |
| | Step 2: Δ in $R^2$ = .05*** | | F (3, 229) = 5.79*** | | Step 2: Δ in $R^2$ = .02* | | F (3, 227) = 3.44* | |
| | Step 3A: Δ in $R^2$ = .00 | | F (1, 228) = .95 | | Step 3A: Δ in $R^2$ = .01* | | F (1, 226) = 5.71* | |
| | Step 3B: Δ in $R^2$ = .00 | | F (1, 228) = .67 | | Step 3B: Δ in $R^2$ = .00 | | F (1, 226) = 1.51 | |
| | Total Adj. $R^2$ = .33*** | | F (7, 228) = 17.77*** | | Total Adj. $R^2$ = .62*** | | F (8, 226) = 48.34*** | |

African Americans

| | Achievement at W2---B(β) | | | | Change in Achievement---B(β) | | | |
|---|---|---|---|---|---|---|---|---|
| | Step 1 | Step 2 | Step 3A | Step 3B | Step 1 | Step 2 | Step 3A | Step 3B |
| Gender | .44( .26)*** | .36( .21)*** | .36( .22)*** | .36(.21)*** | .20( .12)*** | .17( .10)** | .18( .11)*** | .17( .10)** |
| SES | .19( .18)*** | .19( .18)*** | .19( .18)*** | .19( .18)*** | .07( .07)* | .08( .07)* | .07( .07)* | .08( .07)* |
| Academic Competence | .01( .34)*** | .01( .31)*** | .01( .31)*** | .01( .32)*** | .00( .09)* | .00( .08)* | .00( .08)* | .00( .08)* |
| Achievement(W1) | | | | | .69( .69)*** | .67( .66)*** | .67( .66)*** | .67( .66)*** |
| Positive Peer Characteristics | | .04( .03) | .05( .04) | .05( .04) | | .01( .01) | .02( .01) | .01( .01) |
| Negative Peer Characteristics | | .02( .02) | .04 ( .03) | .05( .04) | | .02( .02) | .03( .03) | .02( .02) |
| Negative Peer Orientation | | -.27(-.23)*** | -.26(-.22)*** | -.24(-.21)*** | | -.13(-.11)** | -.13(-.11)** | -.13(-.11)** |
| Positive Peer Characteristics X Negative Peer Orientation | | | .13( .08)* | | | | .11( .07)* | |
| Negative Peer Characteristics X Negative Peer Orientation | | | | -.07(-.06) | | | | -.01(-.01) |
| | Step 1: Δ in $R^2$ = .27*** | | F (3, 423) = 52.87*** | | Step 1: Δ in $R^2$ = .62*** | | F (4, 422) = 171.83*** | |
| | Step 2: Δ in $R^2$ = .05*** | | F (3, 420) = 10.15*** | | Step 2: Δ in $R^2$ = .01 | | F (3, 419) = 3.98** | |
| | Step 3A: Δ in $R^2$ = .01* | | F (1, 419) = 4.30* | | Step 3A: Δ in $R^2$ = .01* | | F (1, 418) = 5.78* | |
| | Step 3B: Δ in $R^2$ = .00 | | F (1, 419) = 1.74 | | Step 3B: Δ in $R^2$ = .00 | | F (1, 418) = .05 | |
| | Total Adj. $R^2$ = .32*** | | F (7, 419) = 29.32*** | | Total Adj. $R^2$ = .63*** | | F (8, 418) = 90.97*** | |

Note. All predictor variables were centered. † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Figure Captions

Figure 1. Perceived positive peer characteristics by negative peer orientation on European Americans' change in intrinsic motivation.

Figure 2. Perceived negative peer characteristics by negative peer orientation on European Americans' change in intrinsic motivation.

Figure 3. Perceived positive peer characteristics by negative peer orientation on European Americans' change in achievement.

Figure 4. Perceived positive peer characteristics by negative peer orientation on African Americans' intrinsic motivation.

Figure 5. Perceived positive peer characteristics by negative peer orientation on African Americans' change in intrinsic motivation.

Figure 6. Perceived positive peer characteristics by negative peer orientation on African Americans' perceptions of the importance of school at wave 2.

Figure 7. Perceived negative peer characteristics by negative peer orientation on African Americans' perceptions of the importance of school at wave 2.

Figure 8. Perceived positive peer characteristics by negative peer orientation on African Americans' change in perceptions of the importance of school at wave 2.

Figure 9. Perceived negative peer characteristics by negative peer orientation on African Americans' change in perceptions of the importance of school at wave 2.

Figure 10. Perceived positive peer characteristics by negative peer orientation on African Americans' achievement at wave 2.

Figure 11. Perceived positive peer characteristics by negative peer orientation on African Americans' change in achievement.

Figure 12. Ethnicity by negative peer characteristics on achievement at wave 2.

Figure 13. Ethnicity by negative peer orientation on achievement at wave 2.

Figure 14. Ethnicity by negative peer characteristics on change in achievement.

Figure 15. Ethnicity by negative peer orientation on change in achievement.

# The Effects of Perceived Racial Discrimination on African American Students' Motivation and School Achievement

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Abstract

The present study investigates the different effects that different sources (students' perception of a glass ceiling, their reports of discrimination at school by their peers, their reports of discrimination by their teachers, their reports of discrimination at work, and their parents' reports of discrimination in the community) of discrimination may have on African American adolescents' achievement socialization. We hypothesized that these different sources of discrimination negatively affect adolescents' value of school, their self-concepts of ability, and their performance in school. We also predicted that students' value of school and their self-concepts of ability mediated the relationship between adolescents' experiences of discrimination and their achievement in school. The sample includes 623 (335 males and 288 females) and their primary caregivers. The data comes from a part of a larger, ongoing study. The results suggests that different sources of discrimination impacted students' value, self-concepts of ability, and achievement differently. Students' experiences of discrimination at school and in the community had a negative effect on their value and their self-concepts of ability. Students' perceptions of a glass ceiling and their parents' experiences of discrimination were positively related to their value of school and their self-concepts of ability. In addition, some evidence suggests that students' value of school and their self-concepts of ability may be mediating the relationships between different sources of discrimination and students' school achievement.