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# Race, Cultural Capital, and the Educational Effects of Participation in Sports 

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The relationship between participation in sports and academic achievement is examined by exploring both the factors that predict participation in different sports and the influence that participation in specific sports has on academic achievement. While previous studies analyzed the effects of participation in sports on achievement, little research has explored whether students who have fewer academic resources are more likely to play sports. Using data from the National Educational Longitudinal Survey, this study considers whether cultural capital, household educational resources, family structure, and race are related to participation in football, basketball, or other sports and whether the effects of participation on several measures of academic achievement differ by race and sport. The findings suggest that cultural disadvantage contributes to an increased interest in and perhaps dependence on basketball and football as a means of social capital. In addition, playing particular sports may not have the achievement returns for either black or white students that some have previously suggested.

0nderstanding the effect of extracurricular activities on students' achievement has been a focus of sociological inquiry for the past three decades. The inspiration for this research was Coleman's (1961) seminal work, The Adolescent Society, in which Coleman argued that adolescent society emphasizes acceptance by peers, with academic achievement one possible avenue toward acceptance. Interpretations of Coleman's work have indicated that extracurricular activities, including participation in sports, pose additional paths to peers'
acceptance that may divert energies away from academics (Marsh 1993). The popularity of sports among high school students is not debated and is demonstrative of the fundamental role that sports participation plays as a vehicle to achieve status that Coleman wrote about. Ironically, according to Coleman, schools play a fundamental role in structuring and promoting sports among adolescents that ultimately undermines the objective of maximizing learning (see also Heckman and Neal 1996).

Other scholars, however, have challenged the notion that participation in
sports detracts from the educational mission. For instance, Snyder and Spreitzer (1990) suggested several reasons that sports may promote academic achievement, including increased interest in school, the need to maintain good grades to stay eligible, boosts to one's self-concept, increased attention from adults like teachers and coaches, membership with others who are academically oriented, and expectations to play college sports. Hanks and Eckland (1976) observed that students' participation in extracurricular programs like sports serves two important functions for schools: (1) the generation and reinforcement of educational goals via exposure to a network of social relations, serving to attach the student to the school and its norms, and (2) the facilitation of achieving such goals by empowering students with personal resources, such as interpersonal skills and self-confidence. Hence, a polemic exists regarding the association between participation in high school sports and academic outcomes: whether sports participation serves to increase or decrease students' academic achievement.

Unfortunately, research to date has not been able to resolve this question satisfactorily. For example, a third possibility, that participation in high school sports has no significant effect on students' achievement, is frequently raised ad hoc but rarely tested empirically. Because of the research design of many of the previous studies, one cannot easily adjudicate on the matter of whether any finding of an association between playing sports and students' achievement represents a causal effect or whether such findings are simply an artifact of preexisting differences (Marsh 1993; Otto 1982). Although more recent inquiries have included some controls that have traditionally been demonstrated to correlate with students' achievement, such as family socioeconomic status (SES) and family structure, little is known about the relationship between other family-centered resources and their association with a child's participation in high school sports. Given the established importance of such influences as cultural capital and household educational resources for students' academic performance (Downey 1995b; Roscigno and

Ainsworth-Darnell 1999), a more comprehensive examination of the role of such factors in predicting participation in high school sports is needed to gain a better understanding of the nature of the association between playing sports and subsequent educational outcomes.

Furthermore, many of the prior studies of the educational consequences of sports participation failed to consider the possibility that the purported association between sports and academics may differ for different social groups-that participation in sports may have positive educational consequences for some and adverse (or no) effects for others. However, there is a debate over which groups benefit, which groups may suffer by participating in sports, or whether or not such social characteristics are salient. For instance, early research suggested that participation in sports produces increased educational aspirations for blacks (Braddock 1981; Wells and Picou 1980), although evidence of an effect of participation on grades or achievement scores is sparse (Melnick, Sabo, and Vanfossen 1992). Others (Hanks 1979; Sabo, Melnick, and Vanfossen 1993) found that while sports participation was positively associated with various educational outcomes for white students, no such effect was present for black students.

It is not surprising that different explanations have emerged to explain such variation. On the one hand, Edwards (1986) contended that the overemphasis on sports among blacks, coupled with obstacles for social mobility for blacks, leads many young black men on a "treadmill to oblivion" that offers faint hopes of high-paying professional jobs for a select few. This drive toward professional athletics comes at a cost, according to Edwards-participation in sports diverts energies away from efforts to excel academically. On the other hand, social reproduction theory, the notion that institutions, such as schools, serve to reproduce social relationships and attitudes that characterize stratified societies like the United States (Bowles and Gintis 1976) has also been extended to explain the association between participation in high school sports and race-based differences in educational outcomes (Sage 1990). Sabo et al. (1993) suggested that sports participation promotes such stratification in two
ways: (1) the institutional matrix of high school sports helps those who are already advantaged more than it helps the disadvantaged (the reinforcement hypothesis) and/or (2) the advantages afforded by sports participation are more effectively taken advantage of by those who are already advantaged (the cumulative advantage hypothesis).

If the social reproduction argument has validity, one would expect that such family factors as cultural capital and household educational resources would be associated with both participation in sports and the subsequent advantages sports would offer the participant. While the notion of the "treadmill to oblivion" produces no definitive hypothesis, findings that differences in cultural capital and household educational resources are predictive of both sports participation and subsequent academic achievement is reconcilable with its basic sentiment. That is, even among disadvantaged black youths, those who have (relatively) few household resources to support educational pursuits may be more likely to perceive of sports as a primary vehicle for social mobility, creating a vicious cycle of sorts, in which the resource deficient place more emphasis on sports, leading to a de-emphasis on academics. This thesis is particularly poignant in light of established racial differences in educational performance and achievement.

Finally, virtually all the prior studies that have examined the association between sports participation and educational outcomes have treated such participation as a monolithic entity-all sports produce (or fail to produce) the same effect on academic outcomes. There are valid reasons to question this assumption. Foremost, if participation in sports is (partially, at least) a product of selfselection, it is plausible that students from different backgrounds will be more inclined or less inclined to play particular types of sports. There is some evidence to support such group-based differences in the orientation toward particular sports. For example, Phillips (1993) argued that there is a sports opportunity structure that funnels blacks into those sports in which facilities, coaching, and competition are available to them. The two sports that stand out in this regard are basketball
and football. Consistent with the "treadmill to oblivion" thesis, blacks represent a much higher percentage of professional football players (65 percent) and basketball players (77 percent) than does the other of the "big three" American sports, baseball (18 percent) (Eitzen and Sage 1997:264). Thus, it is plausible that the race-specific effects of playing basketball and/or football on educational outcomes is distinct from the effects of playing other sports in high school because of the perceived importance of such sports as an opportunity for social mobility. Fully understanding the relationship between participation in sports and academic achievement means examining both the factors that predict participation in different sports and the influence (if any) that participation in specific sports has on students' subsequent achievement.

The purpose of this article is to examine the family factors and resources that predict participation in high school sports for select sports and their consequent influence on academic achievement. Specifically, we seek to determine if (1) there is a connection between a male adolescent's cultural capital and household educational resources and the likelihood that he will participate in specific sports; (2) whether participation in specific sports is positively or negatively associated with academic achievement, independent of such resources; and (3) whether the influence of such capital on sports participation and subsequent academic achievement differ by race. By examining whether family educational resources are associated with participation in high school sports in addition to examining the consequences of participation, we hope to illuminate further the relationship between sports and student outcomes.

## BACKGROUND

Most of the studies of the effects of extracurricular activities on student outcomes have examined the role of sports on such outcomes as dropout decisions, educational aspirations, grades, achievement scores, teachers' and parents' aspirations for the student, performance in college, earnings in adulthood,
self-esteem, and delinquency (e.g., Hanks 1981; Hanks and Eckland 1976; Landers and Landers 1978; McNeal 1995; Otto and Alwin 1977; Spady 1970). The results of these investigations have not been unequivocal. While earlier studies of the effects of sports participation on students' achievement largely found that athletics served as a positive force, rather than an energy drain, on achievement, Marsh (1993) aptly reported that these examinations suffered from several methodological limitations, including the failure to consider the relationship between sports and achievement for any group other than white males and the use of small convenience samples and cross-sectional data.

More recent research, which has used larger, nationally representative samples and longitudinal research designs, has not found a clear and consistent positive relationship between participation in sports and students' achievement, especially when racial and class differences have been considered. For instance, some studies have found that the effects of sports participation on selected student outcomes generalize across racial and ethnic lines (Fejgin 1994; Marsh 1993; McNeal 1995), while others have discovered that the effects of sports participation on students' achievement vary, depending on the racial and class characteristics of the participant (Melnick et al. 1992; Melnick, Vanfossen, and Sabo 1988; Messner 1990; Sabo et al. 1993). These latter studies suggested that sports participation may positively contribute to the achievement of some groups (e.g., whites and middle-class males) but may not have any significant influence on the educational outcomes of other groups (e.g., lower-socioeconomic strata youths and minorities).

Some previous inquiries (e.g., Otto 1982) into the link between sports participation and students' achievement have questioned whether findings that involvement in sports predicts students' academic success are simply due to self-selection. Unfortunately, little research, using longitudinal designs and representative samples, has been conducted on how family factors predict involvement in sports, which could serve to illuminate this issue. Research that has explored the question
of why youths participate in sports has found that the family is the primary agent responsible for stimulating a young person's interest (Loy, McPherson, and Kenyon 1978; Messner 1990). Research has also indicated that black families place more emphasis on sports than do white families and that they reward participation in sports more than other activities (Carrington 1986; Edwards 1986; Oliver 1980). However, additional research has suggested that other agents in a student's environment, like teachers and coaches, may be more consequential to participation and the intensity of commitment to sports than are parents (Carrington 1986; Harris 1994; Oliver 1980). More recently, McNeal (1999) found that school contextual factors, such as school size, pupil-teacher ratio, and mean SES of the student body, affect participation in athletics. But there has been no research on the influence of family educational resources on participation in sports.

There is, however, no shortage of research on how family factors influence academic performance. Such studies have already demonstrated that family characteristics, such as SES and family structure, influence students' achievement in myriad ways, including the characteristics and quality of the school that the child attends (Bowles and Levin 1968; Coleman et al. 1966; Roscigno 1998), academic track placement (Dauber, Alexander, and Entwisle 1996; Oakes 1985) and teachers' expectations (Alexander, Entwisle, and Thompson 1987). Even within socioeconomic strata, however, there is important variation in the family's contribution to the child's academic achievement. Central among these influential factors is cultural capital.

The concept of cultural capital, introduced by Bourdieu (1977) and extended by DiMaggio (1982), has been used to explain how social inequality is reproduced through such institutions as schools. According to Lamont and Lareau (1988), cultural capital can be defined as high-status cultural signals, such as attitudes, behaviors, preferences, and credentials, that are commonly used for social and cultural inclusion and exclusion. Hence, cultural capital comprises those aspects of the middle-class lifestyle that serve to separate
their members from working- and lower-class individuals. Bourdieu argued that children who display these cultural attributes are more likely to fare well in middle-class institutions (including school) because these institutions value and reward these attributes. Lower- and working-class children are more likely to lack these cultural attributes and therefore are at an academic disadvantage in school. Lareau and Horvat (1999) extended this argument by illustrating that although possession of cultural capital is important, groups may differ in their ability or opportunity to activate these resources in different settings.

Sociologists have typically measured cultural capital by examining elite cultural practices like cultural trips (trips to museums and art galleries) and taking extracurricular classes in "high" culture areas (dance, art, and music) (DeGraaf 1986; DiMaggio 1982; Roscigno and Ainsworth-Darnell 1999). While the practice of these "high" cultural activities is associated with family SES (DiMaggio and Ostrower 1990), there is still variation in the practice of these activities within any given SES stratum.

Another way of measuring capital advantage has been to examine the level of household educational resources available to the student. It has been argued that household educational resources (books, computers, magazines, encyclopedias) shape the academic orientation of a child (Lareau 1989; Mercy and Steelman 1982; Teachman 1987), although the impact of these resources has been found to vary according to the number of siblings who share the resources in the household (the resource-dilution effect) (Downey 1995b; Steelman and Powell 1989, 1991; Roscigno and Ainsworth-Darnell 1999).

Consistent with prior research on the effects of cultural capital and household educational resources on academic orientation and achievement, we assume that black and lower-SES teenagers have relatively fewer educational resources and less cultural capital overall than do their white and middle-class counterparts. In addition, Lareau and Horvat (1999) suggested that race has an independent affect on social interactions within schools and between parents and schools. They contended that although the presence
of cultural capital is important, the activation and acceptance of that capital in educational settings may differ by race. In other words, the return to cultural capital and other educational resources (perhaps even participation in sports) may be different for white students than it is for black students.

Why would there be a relationship between family educational resources and involvement in sports? At least two possible explanations exist. First and specifically for blacks, children with low family educational resources may be more vulnerable to social forces that encourage an overemphasis on sports, regardless of the source of that message: parents, overzealous coaches or teachers, or the generic reinforcements of the media and its glorification of professional athletes (Lederman 1990; Messner 1990; Siegel 1994). Second, all children who lack academic resources may be attracted to sports because of the benefits that one can acquire by participation, either short term (such as popularity, attention from adults, and enhanced self-esteem) or long term (a future in professional sports). These overlapping explanations point to the importance of examining how differences in family academic support influence participation in sports and subsequent academic achievement.

The association between family educational resources and involvement in sports may differ by the type of sport being examined. While the aforementioned explanations may account for lower-SES students' interest in playing popular sports, such as football or basketball, students from advantaged backgrounds may find other sports more appealing, partially because they are reflective of their advantaged backgrounds. Sports like swimming or golf may not even be available to students who attend schools in poor communities. To the extent that more advantaged students may be more attracted to elite sports, however, their experiences in such sports can contribute to a social reproduction of status differences, in that they are likely to be playing with other advantaged students. Although the question of peer "effects" on educational achievement has been thoroughly debated in the literature (see Heckman and Neal 1996), the failure to consider education-
al resources in the family may serve to produce illusory findings that may be due to such sorting.

Because of the issues surrounding the possible associations between family educational resources, race, participation in sports, and academic achievement, we believe an examination of these relationships is warranted. The following questions guided our research:

1. Are young black males more likely to participate in basketball and football than are young white males, after opportunity to participate in the sport in high school (there are opportunity differences, such as the number of potential competitors for limited spots on sports teams) are controlled? Edwards (1986) and others suggested that there are important racial differences in the types of sports that black males are attracted to; hence, we partitioned those sports from others to evaluate the linkages between the variables of interest more closely.
2. Are male students with few cultural capital resources more likely to participate in football and basketball than are those with more cultural capital resources?
3. Do the effects of cultural capital on participation in the various sports differ by race?
4. Are there any academic benefits and/or costs of sports participation for students once cultural capital resources are considered?
Given previous scholarship, we make the following predictions:
5. Black male students are more likely to play basketball or football than are white male students.
6. Students with fewer cultural capital resources are more likely to participate in football or basketball (regardless of race).
7. The benefits of sports participation are positive for white males once cultural capital resources are considered (Melnick et al. 1992).
8. For black males, playing football or basketball has little influence on academic achievement, after cultural capital resources are considered.
Our predictions are guided by the extension of social reproduction theory. In summary, we believe that race, cultural capital, and educa-
tional resources are critical factors that need to be incorporated into analyses of the linkages between participation in sports and academic achievement.

## DATA AND METHODS

## Sample

We used data from the first two waves of the National Education Longitudinal Survey (NELS), conducted by the National Center for Education Statistics (NCES), a nationally representative study that collected information from students, parents, teachers, and administrators. The first wave of the survey was conducted in 1988 and drew random samples of approximately 25 eighth graders in each of approximately 1,000 randomly selected middle schools. The students were then administered further surveys and tests in 1990 during the second wave of the longitudinal study (see NCES 1992).

The longitudinal design of NELS allowed us to minimize questions of causal ordering in the analyses by using variables measured at the first wave (1988), when students were in the eighth grade, to predict sports participation in 1990 and academic achievement at the end of that academic year (NCES 1992). We limited our analyses to male black and white public school students who are still in school in 1990. We explored potential differences between black and white male students in the effects of family factors on their participation in football, basketball, and other sports and of participation on academic outcomes. 1

We used a sample weight that was computed by the NCES that adjusts for differences in racial representation and sample attrition (dropout losses). The resulting sample consisted of 5,018 students for the sports participation models. However, since we also used two measures of academic achievement in 1990 (test scores and self-reported grades) for which some student's scores/answers were missing, the resulting samples for analyses were 4,930 and 4,951 , respectively. We imputed values for the missing data on the independent variables. ${ }^{2}$ Analyses conducted
using casewise deletion revealed no significant differences from the models using the imputed values.

## MEASURES

Family and Individual Characteristics Family characteristics include a composite measure of family SES (computed by NCES from family income, parental education, and parental occupation). ${ }^{3}$ Two dummy-coded measures (single-parent household and stepparent household) provided information on family structure, which has been found to affect academic orientation and achievement (Downey 1995a)-two-parent household is the default category. We borrowed from other studies (DiMaggio 1982; Roscigno and Ainsworth-Darnell 1999; Teachman 1987) in operationalizing cultural capital and household educational resources. We used two measures of students' participation in cultural trips (art, science, or history museums) and extracurricular "high"-culture classes (art, music, and dance classes) to represent cultural capital. To measure household educational resources, we used a series of questions asking whether the respondent's family had eight specific resources, such as study space available, a computer, and 50 or more books at home. By combining the scores from these eight questionnaire items (see Downey 1995a; Roscigno and Ainsworth-Darnell 1999; Teachman 1987), we created a measure with a composite score ( 0 to 8 ) that reflects the extent of academic resources available to the child in the household. The variables measuring family characteristics, cultural capital, and household educational resources were all drawn from the first wave of NELS. In addition, we used two measures of prior academic achievement to predict the dependent variables: the standardized composite of math and reading achievement test scores in the 8th grade (see NCES 1992) and the student's general grades in the 8th grade.

Control Variables Since we are interested in explaining participation in high school sports, we considered prior sports participation as a
control factor. This is an important control measure that has been neglected in previous relevant studies. It is measured using two vari-ables-participation in 8th-grade interscholastic sports and participation in 8thgrade intramural sports-drawn from the first wave of NELS. School variables were included as proxies for the opportunity to participate in sports. School size was examined as a proxy for the relative chance of participating in sports, described as the "overmanning" effect in prior studies (Barker and Gump 1964; Lindsay 1984; McNeal 1999). ${ }^{4}$ We also included a school-level measure of the percentage of nonwhite students enrolled as a measure of racial composition. If a greater emphasis is placed on sports participation in the black community, as previous studies (Carrington 1986; Edwards 1986; Oliver 1980) suggested, inclusion of a measure of the racial composition of the school is necessary to capture the greater competition for limited opportunities to play. School-level measures were drawn from the second wave of NELS.

Sports Participation We considered three categories of sports participation in our analysis: varsity and junior varsity-level participation in basketball, football, and other sports. We explored basketball and football specifically because of the perception that young black males are more likely to gravitate toward the professional sports for which there is the greatest perceived opportunity for social mobility and because high school students are the most familiar with and have the greatest access to these sports, regardless of social class. We also examined whether the variables of interest predict participation in other sports, to determine if the proposed relationships are distinctive of the select sports of football and basketball or also apply to other sports. We recognize that the inclusion of a category representing "other sports" ignores potentially important variation that may occur within this category as it relates to other variables. However, in separate analyses (not reported), we found few differences of note between the patterns revealed in the reported analyses and those uncovered when other sports were further disaggregated.

Academic Outcomes To measure academic achievement as objectively as possible, we used scores from the standardized composite of math and reading achievement tests taken at the end of the 10th grade. We also used an indicator of grades earned in the 10th grade as an alternative measure of academic performance. This indicator is comprised of measures of self-reported grades for math, science, English, and history. There are major concerns about using grades as a single indicator of academic performance, particularly when considering student athletes. Snyder and Spreitzer (1990) raised three such concerns. First, because of requirements that athletes maintain minimum grade point averages to be eligible to play, grade inflation may occur to keep marginal athletes eligible. Second, grades often do not consider tracking or curriculum choices; therefore, they may mask important differences in learning. Third, athletes may choose (or be steered toward) teachers and courses that have reputations for being less demanding, again possibly for eligibility concerns. Including the mathematics-reading composite offers a measure of achievement that, unlike grades, is standardized across schools. Table 1 presents the descriptions and summary statistics of the major variables used in our analyses.

## Analytic Strategy

The analyses proceed in sequential steps. First, we examine the differences between black and white students on selected factors. Next, we explore the extent to which interscholastic participation in football, basketball, and other sports is a function of family SES and structure, cultural capital and educational resources, and prior achievement (controlling for other factors) and whether there are racial differences in the effects of these factors on participation in sports. Two logistic regression analyses are conducted for each of the sports. The first model introduces the factors to be explored and focuses on the direct effects of these factors on sports participation. The second model introduces race interactions to explore if racial differences exist in the effects of family characteristics, cultural capital, educational resources, and prior
achievement on participation in sports. The significance of interaction terms for basketball, but not for football or other sports, suggests that racial differences do exist but not for all sports. Next we explore the consequences of sports participation for academic achievement. We estimate the direct effects of participation in football, basketball, and other sports on mathematics-reading achievement and self-reported grades using ordinary least squares (OLS) regression. This analytic strategy allows us to explore whether the return on participation differs by sport. We follow it by introducing race-sport interactions into the analyses to see whether the effects of participation in football, basketball, and other sports differ by race. We control for prior achievement to assess the contemporary importance of sports participation.

## RESULTS

## Family Resources, Race, and Sports Participation

Table 2 presents summary statistics by race for selected variables and includes difference of means or proportions tests for black versus white students. The Wald-statistic included in Table 2 indicates whether the statistical estimates for black male students are significantly different from the estimates for white male students.

There are racial differences in participation in football, basketball, and other sports. Black males are 1.6 times as likely as white males to participate in interscholastic football in high school and 2.5 times as likely to participate in interscholastic basketball. On the other hand, white males are 1.3 times more likely than black males to participate in other interscholastic sports (baseball, soccer, swimming, track, and so forth). These differences exist in spite of no meaningful racial differences in 8th-grade sports participation. The failure to find meaningful racial differences in 8thgrade sports participation is likely due to the use of a global measure of playing sports instead of measures of participation in specific sports (as was the case in assessing sports participation in the 10th grade).

Table 1. Variables, Descriptions, and Standard Errors for Weighted Mean Estimates: 1990 Black and White Male 8th Graders in 1988 (Unweighted $N=5,018$ )

\begin{tabular}{|c|c|c|c|}
\hline Variable \& Description \& Metric pr \& Mean or proportion (SE) \\
\hline \multicolumn{4}{|l|}{1990 Sports Participation} \\
\hline Basketball \& Student's report of whether or not he participated in varsity or junior varsity basketball in 1990. \& \begin{tabular}{l}
\(0=\) did not participate \\
\(1=\) did participate
\end{tabular} \& \[
\begin{gathered}
.16 \\
(.01)
\end{gathered}
\] \\
\hline Football \& Student's report of whether or not he participated in varsity or junior varsity football in 1990. \& \[
\begin{aligned}
\& 0=\text { did not participate } \\
\& 1=\text { did participate }
\end{aligned}
\] \& \[
\begin{gathered}
.24 \\
(.01)
\end{gathered}
\] \\
\hline Other sports \& Student's report of whether or not he participated in any varsity or junior varsity sport other than football or basketball in 1990. \& \[
\begin{aligned}
\& 0=\text { did not participate } \\
\& 1=\text { did participate }
\end{aligned}
\] \& \[
\begin{gathered}
.39 \\
(.01)
\end{gathered}
\] \\
\hline \multicolumn{4}{|l|}{1990 Academic} \\
\hline \multicolumn{4}{|l|}{Achievement} \\
\hline Mathematics-reading test composite \& Standardized composite of math and reading test scores (1990). \& \[
\begin{aligned}
\& 30.68=\text { lowest score } \\
\& 71.82 \text { = highest score }
\end{aligned}
\] \& \[
\begin{array}{r}
50.45^{a} \\
(.25)
\end{array}
\] \\
\hline Grades composite \& Student's reported grade composite using English, mathematics, science, and social studies grades (1990). \& \[
\begin{aligned}
\& .5=\text { mostly less than Ds } \\
\& 4.0=\text { all As }
\end{aligned}
\] \& \[
\begin{gathered}
2.73^{b} \\
(.02)
\end{gathered}
\] \\
\hline \multicolumn{4}{|l|}{8th-Grade Sports} \\
\hline \multicolumn{4}{|l|}{Participation} \\
\hline Interscholastic sports \& Student's report of whether or not he participated in interscholastic sports in the 8th grade (1988). \& \begin{tabular}{l}
0 = did not participate \\
1 = did participate
\end{tabular} \& \[
\begin{gathered}
.52 \\
(.01)
\end{gathered}
\] \\
\hline Intramural sports \& Student's report of whether or not he participated in intramural sports in the 8th grade (1988). \& \[
\begin{aligned}
\& 0=\text { did not participate } \\
\& 1=\text { did participate }
\end{aligned}
\] \& \[
\begin{gathered}
.45 \\
(.01)
\end{gathered}
\] \\
\hline \multicolumn{4}{|l|}{Family Characteristics/ Structure} \\
\hline Family SES \& Standardized composite of father's educational level, mother's educational level, father's occupation, mother's occupation, and family income (1988). \& \begin{tabular}{l}
-2.23 = lowest score \\
2.56 = highest score
\end{tabular} \& \[
\begin{aligned}
\& -.03 \\
\& (.02)
\end{aligned}
\] \\
\hline Single-parent household \& Student lives in a single-parent household (1988). \& \(0=\) not in a single-parent household, \(1=\) in a single-parent household \& .20

$(.01)$ <br>
\hline Stepparent household \& Student lives in a stepparent household (1988). \& $0=$ not in a stepparent household 1=in a stepparent household \& .17
$(.01)$ <br>
\hline \multicolumn{4}{|l|}{Family Cultural Capital and Resources} <br>

\hline Cultural trips \& | Student goes to (1) art museums, |
| :--- |
| (2) science museums, |
| (3) history museums (1988). | \& | $0=$ none of these |
| :--- |
| museums |
| 3 = all these museums | \& 1.45

(.03) <br>
\hline
\end{tabular}

Table 1. Continued

| Variable | Description | Metric | Mean or proportion (SE) |
| :---: | :---: | :---: | :---: |
| Cultural classes | Student attends classes outside his or her regular school to study: (1) art, (2) music, (3) dance (1988). | $0=$ none of these classes $3=$ all these classes | $\begin{gathered} .34 \\ (.01) \end{gathered}$ |
| Household educational resources | Which of the following does the student have in his or her home? <br> (1) daily newspaper, <br> (2) regularly received magazine, <br> (3) an encyclopedia, <br> (4) an atlas, (5) a dictionary, <br> (6) a computer, (7) more than 50 books, <br> (8) a pocket calculator in the 8th grade (1988). | $0=$ none of these items $8=$ all of these items | $\begin{aligned} & 6.30 \\ & (.04) \end{aligned}$ |
| Racial Group Identification |  |  |  |
| Race | Student's racial identification | $\begin{aligned} & 0=\text { white non-Hispanic } \\ & 1=\text { black } \end{aligned}$ | $\begin{gathered} .14 \\ (.01) \end{gathered}$ |
| Prior Achievement |  |  |  |
| Student math-reading composite | Standardized composite of math and reading test scores (1988). | $\begin{aligned} & 31.81=\text { lowest score } \\ & 75.81=\text { highest score } \end{aligned}$ | $\begin{gathered} 50.74 \\ (.24) \end{gathered}$ |
| Student grade composite | Student's reported grade composite using English, mathematics, science, and social studies grades (1988). | $\begin{aligned} & .5=\text { mostly less than Ds } \\ & 4.0=\text { all As } \end{aligned}$ | $\begin{aligned} & 2.85 \\ & (.02) \end{aligned}$ |

> a $N=4,930$.
> b $N=4,951$.

As expected, black male students come from families with significantly lower SES; have fewer household resources; take fewer trips to museums; and are less likely to attend art, music, or dance classes than white male students. In addition, 68 percent of the white male 8th graders were living in two-parent families; in contrast, only 40 percent of the black male 8th graders were living in two-parent families, and another 40 percent were living in households with stepparents.

The results of the logistic regression analyses examining the effects of family characteristics and cultural capital, prior educational achievement, and race on participation in football, basketball, and other sports are presented in Table 3. Previous studies suggested that family SES is positively associated with overall participation in high school sports. Our models indicate that SES does not have a
consistent affect on participation in particular sports. The relationship between family SES and participation in basketball and other sports is positive, but SES has no affect on participation in football. Likewise, unlike studies of the influence of family characteristics on measures of academic outcomes, household structure in this study, measured as a two-parent, single-parent, or stepparent family, was not found to be a direct predictor of sports participation. ${ }^{5}$

The central independent variables, cultural capital measures and household educational resources, provide consistent support for the notion that culturally disadvantaged males are more likely to turn to football and basketball than are other high school students. As predicted, participation in other sports is not significantly related to the measures of cultural capital and household educational resources.

Table 2. Weighted Mean Estimates and Standard Errors: Differences in 1990 Black and White Male 8th Graders in 1988 (Unweighted $N=611$ for black students and $N=4,407$ for white students)

| Variable | Black Students: Mean or Proportion (SE) | Wald Statistic (F-test) | White Students: Mean or Proportion (SE) |
| :---: | :---: | :---: | :---: |
| 1990 Sports Participation |  |  |  |
| Interscholastic football | . 36 (.04) | 10.58** | . 22 (.01) |
| Interscholastic basketball | . 33 (.04) | 20.72*** | . 13 (.01) |
| Interscholastic sport (other than football or basketball) | . 31 (.04) | 5.38* | . 41 (.01) |
| 1990 Academic Achievement |  |  |  |
| Math-reading test composite ${ }^{\text {a }}$ | 43.92 (.57) | 154.03*** | 51.54 (.25) |
| Grades composite ${ }^{\text {b }}$ | 2.64 (.05) | 2.90 | 2.74 (.02) |
| Prior Sports Participation |  |  |  |
| 8th-grade interscholastic sports | . 50 (.04) | . 20 | . 52 (.01) |
| 8th-grade intramural sports | . 42 (.04) | . 72 | . 45 (.01) |
| Family Characteristics/Structure |  |  |  |
| Family SES | -. 45 (.04) | 141.43*** | . 04 (.02) |
| Single-parent household | . 20 (.01) | . 86 | . 16 (.01) |
| Stepparent household | . 40 (.04) | 38.52*** | . 16 (.01) |
| Two-parent household | . 40 (.03) | 61.43*** | . 68 (.01) |
| Family Cultural Capital and Resources |  |  |  |
| Cultural trips | 1.20 (.10) | 7.30** | 1.49 (.03) |
| Cultural classes | . 24 (.03) | 11.34*** | . 35 (.01) |
| Household educational resources | 5.26 (.18) | 45.60*** | 6.47 (.03) |
| Educational Achievement |  |  |  |
| 8th-grade math-reading test composite | 44.25 (.45) | 225.80*** | 51.83 (.24) |
| 8th-grade grade composite | 2.68 (.05) | 13.80*** | 2.88 (.02) |

a $N=595$ black students and $N=4,335$ white students.
b $N=595$ black students and $N=4,356$ white students.

* $p<.05,{ }^{* *} p<.01,{ }^{* * *} p<.001$.

Taking cultural trips has a small but significant affect on participation in basketball, but not in football. Students who have participated in cultural trips are less likely to participate in basketball (.88). For example, this finding means that each additional type of cultural trip increases the odds of not playing high school basketball by a factor of 1.1.6 The effect of participation in cultural classes was also found to be a significant predictor of participation in football and basketball. Each additional cultural class makes the odds of not playing high school football or basketball 1.3 times greater. Clearly, some measures of cultural capital are predictive of whether a male participates in basketball or football at the interscholastic level. On the other hand, the effect of the measure of household educational resources was only significant in the football participation model, and even there, it was negligible in terms of substantive importance.

Prior academic achievement, as measured
by test scores, has the predicted association with participation in football and basketball. A 10-percentage point decrease in the mathe-matics-reading composite increases the odds of participating in football by a factor of 1.11 and in basketball by a factor of 1.35.7 This finding supports the notion that males with fewer academic resources are more likely to participate in some sports. On the other hand, the measure of prior grades is positively associated with participation in basketball and other sports. A one-letter increase in a student's grade composite increases the odds of participating in basketball by 1.59 times and the odds of participating in other sports by 1.45 times. Although seemingly inconsistent, the effects of these two measures of prior achievement are not surprising, given the earlier insights about grade inflation, curriculum selection, and teacher selection that can mask true associations between academic learning and sports participation (Snyder and Spreitzer

Table 3. Logistic Coefficient Estimates for Regression of Football, Basketball, and Other Sports Participation on Race and Background Characteristics: 1990 Black and White Male 8th Graders in 1990. ${ }^{\text {a }}$ (Unweighted $N=5,018$ )

| Variable | Football Participation Model 1 |  | Basketball Participation Model 1 |  | Other Sports Participation Model 1 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $b$ | $\operatorname{Exp}(b)$ | $b$ | $\operatorname{Exp}(b)$ | $b$ | $\operatorname{Exp}(b)$ |
| Family Characteristics/Structure |  |  |  |  |  |  |
| Family SES | $\begin{gathered} .11 \\ (.10) \end{gathered}$ | 1.12 | $\begin{aligned} & .33^{* *} \\ & (.12) \end{aligned}$ | 1.39 | $\begin{aligned} & .43^{* * *} \\ & (.12) \end{aligned}$ | 1.53 |
| Single-parent household | $\begin{aligned} & -.03 \\ & (.17) \end{aligned}$ | . 97 | $\begin{aligned} & .004 \\ & (.20) \end{aligned}$ | 1.00 | $\begin{aligned} & .12 \\ & (.17) \end{aligned}$ | 1.13 |
| Stepparent household | $\begin{gathered} .02 \\ (.15) \end{gathered}$ | 1.02 | $\begin{aligned} & -.23 \\ & (.19) \end{aligned}$ | . 79 | $\begin{aligned} & -.13 \\ & (.15) \end{aligned}$ | . 88 |
| Family Cultural Capital and Resources |  |  |  |  |  |  |
| Cultural trips | $\begin{aligned} & -.05 \\ & (.05) \end{aligned}$ | . 95 | $\begin{aligned} & -.13^{*} \\ & (.07) \end{aligned}$ | . 88 | $\begin{aligned} & -.03 \\ & (.04) \end{aligned}$ | . 97 |
| Cultural classes | $\begin{aligned} & -.25^{\star *} \\ & (.09) \end{aligned}$ | . 78 | $\begin{aligned} & -.22^{*} \\ & (.10) \end{aligned}$ | . 80 | $\begin{aligned} & -.08 \\ & (.09) \end{aligned}$ | . 92 |
| Household educational resources | $\begin{aligned} & -.10^{*} \\ & (.05) \end{aligned}$ | . 91 | $\begin{aligned} & -.09 \\ & (.06) \end{aligned}$ | . 91 | $\begin{gathered} .05 \\ (.04) \end{gathered}$ | 1.06 |
| Race (black = 1) | $\begin{aligned} & .93^{* * *} \\ & (.21) \end{aligned}$ | 2.54 | $\begin{aligned} & 1.74^{* * *} \\ & (.24) \end{aligned}$ | 5.68 | $\begin{aligned} & -.11 \\ & (.19) \end{aligned}$ | . 90 |
| Educational Achievement |  |  |  |  |  |  |
| Centered math-reading composite | $\begin{aligned} & -.01^{*} \\ & (.01) \end{aligned}$ | . 99 | $\begin{aligned} & -.03^{* * *} \\ & (.01) \end{aligned}$ | . 97 | $\begin{aligned} & .001 \\ & (.01) \end{aligned}$ | 1.00 |
| Centered grade composite | $\begin{aligned} & -.01 \\ & (.09) \end{aligned}$ | . 99 | $\begin{aligned} & .46^{* * *} \\ & (.10) \end{aligned}$ | 1.59 | $\begin{aligned} & .37^{* * *} \\ & (.09) \end{aligned}$ | 1.45 |
| Controls |  |  |  |  |  |  |
| 8th-grade interscholastic sports | $\begin{aligned} & .95^{\star * *} \\ & (.12) \end{aligned}$ | 2.59 | $\begin{aligned} & .99 * * * \\ & (.15) \end{aligned}$ | 2.69 | $\begin{aligned} & .58^{* * *} \\ & (.10) \end{aligned}$ | 1.79 |
| 8th-grade intramural sports | $\begin{aligned} & .24^{\star \star} \\ & (.10) \end{aligned}$ | 1.27 | $\begin{aligned} & .41^{* * *} \\ & (.12) \end{aligned}$ | 1.51 | $\begin{aligned} & .36^{* * *} \\ & (.10) \end{aligned}$ | 1.43 |
| Student in the 10th grade (versus in school but not in the 10th grade) | $\begin{aligned} & .54^{*} \\ & (.25) \end{aligned}$ | 1.72 | $\begin{aligned} & .76^{*} \\ & (.35) \end{aligned}$ | 2.15 | $\begin{aligned} & .90^{* * *} \\ & (.25) \end{aligned}$ | 2.47 |
| 10 to 49 percent minority enrollment in the 10th grade | $\begin{aligned} & -.07 \\ & (.12) \end{aligned}$ | . 93 | $\begin{aligned} & -.39^{* *} \\ & (.15) \end{aligned}$ | . 68 | $\begin{gathered} .09 \\ (.11) \end{gathered}$ | 1.09 |
| 50 to 100 percent minority enrollment the 10th grade | $\begin{aligned} & -.56^{* *} \\ & (.22) \end{aligned}$ | . 57 | $\begin{aligned} & -.63^{* *} \\ & (.26) \end{aligned}$ | . 53 | $\begin{aligned} & .18 \\ & (.18) \end{aligned}$ | 1.20 |
| 800-1,599 students enrolled in the 10th grade | $\begin{aligned} & -.25^{*} \\ & (.13) \end{aligned}$ | . 78 | $\begin{aligned} & -.66^{* * *} \\ & (.15) \end{aligned}$ | . 52 | $\begin{aligned} & -.13 \\ & (.12) \end{aligned}$ | . 88 |
| 1,600 or more students enrolled in the 10th grade | $\begin{aligned} & -.40^{* *} \\ & (.17) \end{aligned}$ | . 67 | $\begin{gathered} -1.26^{* * *} \\ (.19) \end{gathered}$ | . 28 | $\begin{aligned} & -.49^{* * *} \\ & (.15) \end{aligned}$ | . 62 |
| Intercept | -1.41 |  | -2.00 |  | -1.94 |  |
| F-test, Model 1 | 11.51 |  | 19.17 |  | 16.94 |  |

[^0]1990). Furthermore, because students often must maintain some minimal grade point average to try out for or participate in interscholastic athletics in junior high school and high school, there may be some threshold that selects out some athletically oriented students and excludes them from participation.

Perhaps the most important and compelling finding is the effect of race on sports participation. Controlling for the other factors, the odds that a black male will participate in interscholastic football or basketball are 2.54 times greater and 5.68 times greater, respectively, than the odds of participation for a white male. However, no such relationship exists between race and participation in other sports. This finding is supportive of the importance of participation in football and basketball, rather than other sports, for black males relative to whites.

There are also some interesting effects associated with the control for school minority enrollment. ${ }^{8}$ Enrollment at a school that has a 50 percent to 100 percent minority enrollment vis-à-vis a school that has less than a 10 percent minority enrollment substantially decreases the odds of participating in football and basketball. Similarly attending a school that has a 10 percent to 49 percent minority enrollment vis-à-vis a school that has less than a 10 percent minority enrollment decreases the odds of participating in basketball. This effect provides some support for the notion that participation in football and basketball is important in the black communitythe more minorities in a school, the more competition for limited opportunities to play football and basketball.

Although these models provide basic support for the idea that cultural disadvantage increases the likelihood of participating in the popular sports of football and basketball, the models do not investigate differences in the relationships between the independent variables of interest and sports participation for black versus white males. Table 4 presents the results of the logistic regression analyses using interaction terms to examine whether the effects of the measures of family characteristics and structure, cultural capital and resources, or prior educational achievement on sports participation differ by race.

The most important finding illustrated in Table 4 is that race interactions are significant only in the basketball participation model. ${ }^{9}$ We found support for the idea that there are racial differences in the effects of some of the measures of family characteristics, family cultural capital and educational resources, and prior academic achievement on participation in basketball but not in football or other sports. A significant difference was found between black and white males regarding the influence of living in a stepparent household on basketball participation. For white males, living in a stepparent versus a two-parent (non-stepparent) family increases the odds of not playing basketball by a factor of 1.79. For black students, there is no significant relationship between family structure and participation.

With regard to family cultural capital, the effect that differs by race is the influence of taking cultural classes on basketball participation. For white males, participating in cultural classes has no significant affect on the odds of participating in high school basketball. For black males, it decreases the odds of participating in high school basketball by a factor of .47. In other words, for each additional cultural class that a black student takes part in, the odds of not participating in basketball increase by a factor of 2.13. The effect of household educational resources on basketball participation is similar. Each additional household resource increases the odds of not participating in basketball by a factor of 1.22 for black males. Household resources have no significant impact on basketball participation for white males.

One measure of prior academic achievement also varies by race. Prior mathematicsreading composite scores are negatively associated with participation in basketball for both black and white males. For white males, a 10-percentage point (approximately one standard deviation) increase in the mathe-matics-reading composite score increases the odds of not participating in basketball by a factor of 1.26 . For black males, a 10 -percentage point increase increases the odds of not participating in basketball by a factor of 2.78 . This finding supports the general idea that males who are not doing well academically

Table 4. Logistic Coefficient Estimates for Regression of Football, Basketball, and Other Sports Participation on Race and Background Characteristics with Race Interactions: 1990 Black and White Male 8th Graders in 1988 (Unweighted $N=5,018$ )

| Variable | Football Participation Model 2 |  | Basketball Participation Model 2 |  | Other Sports Participation Model 2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $b$ | Exp (b) | $b$ | Exp (b) | $b$ | Exp (b) |
| Family Characteristics/Structure |  |  |  |  |  |  |
| Family SES | $\begin{gathered} .09 \\ (.09) \end{gathered}$ | 1.09 | $\begin{aligned} & .22^{* *} \\ & (.09) \end{aligned}$ | 1.25 | $\begin{gathered} .41^{* * *} \\ (.13) \end{gathered}$ | 1.51 |
| Single-parent household | $\begin{aligned} & -.12 \\ & (.16) \end{aligned}$ | . 89 | $\begin{aligned} & -.03 \\ & (.18) \end{aligned}$ | . 97 | $\begin{gathered} .06 \\ (.19) \end{gathered}$ | 1.06 |
| Stepparent household | $\begin{aligned} & -.09 \\ & (.15) \end{aligned}$ | . 92 | $\begin{aligned} & -.58^{* *} \\ & (.19) \end{aligned}$ | . 56 | $\begin{aligned} & -.18 \\ & (.17) \end{aligned}$ | . 83 |
| Family Cultural Capital and Resources |  |  |  |  |  |  |
| Cultural trips | $\begin{aligned} & -.08^{*} \\ & (.04) \end{aligned}$ | . 92 | $\begin{aligned} & -.18^{* * *} \\ & (.05) \end{aligned}$ | . 83 | $\begin{aligned} & -.01 \\ & (.04) \end{aligned}$ | . 99 |
| Cultural classes | $\begin{aligned} & -.21^{*} \\ & (.10) \end{aligned}$ | . 81 | $\begin{aligned} & -.14 \\ & (.10) \end{aligned}$ | . 87 | $\begin{aligned} & -.07 \\ & (.09) \end{aligned}$ | . 93 |
| Household educational resources | $\begin{aligned} & -.07^{*} \\ & (.04) \end{aligned}$ | . 94 | $\begin{gathered} .02 \\ (.05) \end{gathered}$ | 1.02 | $\begin{gathered} .06 \\ (.04) \end{gathered}$ | 1.06 |
| Race (black $=1$ ) | $\begin{aligned} & 1.64^{*} \\ & (.95) \end{aligned}$ | 2.27 | $\begin{aligned} & 2.11^{* *} \\ & (.92) \end{aligned}$ | 8.26 | $\begin{aligned} & -.30 \\ & (.78) \end{aligned}$ | . 74 |
| Educational Achievement |  |  |  |  |  |  |
| Centered grade composite | $\begin{gathered} .03 \\ (.09) \end{gathered}$ | 1.03 | $\begin{gathered} .53^{* * *} \\ (.10) \end{gathered}$ | 1.71 | $\begin{aligned} & .41^{* * *} \\ & (.09) \end{aligned}$ | 1.51 |
| Centered math-reading composite | $\begin{aligned} & -.01 \\ & (.01) \end{aligned}$ | . 99 | $\begin{aligned} & -.02 * * * \\ & (.01) \end{aligned}$ | . 98 | $\begin{gathered} .00 \\ (.01) \end{gathered}$ | 1.00 |
| Controls |  |  |  |  |  |  |
| 8th-grade interscholastic sports | $\begin{aligned} & .96 * * * \\ & (.11) \end{aligned}$ | 2.60 | $\begin{aligned} & 1.03^{* * *} \\ & (.13) \end{aligned}$ | 2.81 | $\begin{gathered} .58^{\star * *} \\ (.10) \end{gathered}$ | 1.79 |
| 8th-grade intramural sports | $\begin{aligned} & .25^{* *} \\ & (.10) \end{aligned}$ | 1.29 | $\begin{aligned} & .45^{* * *} \\ & (.12) \end{aligned}$ | 1.57 | $\begin{aligned} & .37^{* * *} \\ & (.10) \end{aligned}$ | 1.44 |
| Student in the 10th grade (versus in school but not in the 10th grade) | $\begin{gathered} .61 \\ (.27) \end{gathered}$ | 1.83 | $\begin{aligned} & .94^{* *} \\ & (.39) \end{aligned}$ | 2.56 | $\begin{aligned} & .97 * * * \\ & (.25) \end{aligned}$ | 2.63 |
| 10 to 49 percent minority enrollment in the 10th grade | $\begin{aligned} & -.05 \\ & (.12) \end{aligned}$ | . 95 | $\begin{aligned} & -.35 \\ & (.14) \end{aligned}$ | . 70 | $\begin{gathered} .09 \\ (.11) \end{gathered}$ | 1.10 |
| 50 to 100 percent minority enrollment in the 10th grade | $\begin{aligned} & -.54^{* *} \\ & (.19) \end{aligned}$ | . 59 | $\begin{aligned} & -.59^{* *} \\ & (.21) \end{aligned}$ | . 56 | $\begin{aligned} & .17 \\ & (.18) \end{aligned}$ | 1.18 |
| 800 to 1,599 students enrolled in the 10th grade | $\begin{aligned} & -.23^{*} \\ & (.12) \end{aligned}$ | . 79 | $\begin{aligned} & -.62^{* *} \\ & (.13) \end{aligned}$ | . 54 | $\begin{aligned} & -.13 \\ & (.12) \end{aligned}$ | . 88 |
| 1,600 or more students enrolled in the 10th grade | $\begin{aligned} & -.39^{* *} \\ & (.16) \end{aligned}$ | . 68 | $\begin{gathered} -1.25 * * * \\ (.18) \end{gathered}$ | . 29 | $\begin{aligned} & -.48 \\ & (.15) \end{aligned}$ | . 62 |
| Race Interactions |  |  |  |  |  |  |
| Family SES | $.07$ | 1.08 | $\begin{gathered} .32 \\ (.33) \end{gathered}$ | 1.37 | $\begin{gathered} .08 \\ (.31) \end{gathered}$ | 1.09 |
| Single-parent household | $\begin{gathered} .54 \\ (.43) \end{gathered}$ | 1.71 | $\begin{gathered} .45 \\ (.46) \end{gathered}$ | 1.57 | $\begin{gathered} .41 \\ (.43) \end{gathered}$ | 1.51 |
| Stepparent household | $\begin{aligned} & .59 \\ & (.38) \end{aligned}$ | 1.80 | $\begin{aligned} & 1.13^{* *} \\ & (.41) \end{aligned}$ | 3.08 | $\begin{gathered} .49 \\ (.41) \end{gathered}$ | 1.63 |
| Cultural trips | $\begin{aligned} & .13 \\ & (.17) \end{aligned}$ | 1.14 | $\begin{array}{r} .13 \\ (.16) \end{array}$ | 1.14 | $\begin{aligned} & -.16 \\ & (.15) \end{aligned}$ | . 85 |
| Cultural classes | $\begin{aligned} & -.36 \\ & (.33) \end{aligned}$ | . 70 | $\begin{aligned} & -.62^{*} \\ & (.36) \end{aligned}$ | . 54 | $\begin{aligned} & -.17 \\ & (.29) \end{aligned}$ | . 84 |
| Household educational resources | $\begin{aligned} & -.08 \\ & (.12) \end{aligned}$ | . 92 | $\begin{aligned} & -.22^{*} \\ & (.12) \end{aligned}$ | . 81 | $\begin{gathered} .01 \\ (.11) \end{gathered}$ | 1.01 |
| Centered grade composite | $\begin{aligned} & -.28 \\ & (.26) \end{aligned}$ | . 75 | $\begin{aligned} & -.36 \\ & (.27) \end{aligned}$ | . 70 | $\begin{aligned} & -.38 \\ & (.25) \end{aligned}$ | . 68 |
| Centered math-reading composite | $\begin{aligned} & -.02 \\ & (.03) \end{aligned}$ | . 98 | $\begin{aligned} & -.08^{\prime * *} \\ & (.03) \end{aligned}$ | . 93 | $\begin{aligned} & -.02 \\ & (.03) \end{aligned}$ | . 98 |
| Intercept | -1.65 |  | -2.86 |  | -2.07 |  |
| $F$-test, Model 2 $F$-test for race interactions | 8.14 1.29 |  | 15.06 $3.69 * * *$ |  | $\begin{array}{r} 12.02 \\ 1.58 \end{array}$ |  |

${ }^{\text {a }}$ Metric coefficients (standard errors).
${ }^{*} p<.05,{ }^{* *} p<.01,{ }^{* * *} p<.001$ (one-tailed test).
are more likely to turn to sports and, more specifically, that black males in this situation are much more likely than white males to turn to sports.

To clarify the effects of the independent variables on the likelihood of participating in sports, we present the predicted probabilities that black and white males with selected characteristics will play basketball or football in high school. The predicted probabilities illustrate the striking effects of the factors being manipulated in Table 5 when other factors are at their mean or modal values. In particular, they highlight the impact that having cultural capital has on the probability that a male will participate in interscholastic basketball.

However, it is important to remember that the opportunity structures for basketball and football participation vary considerably, with the chance of playing football generally greater than the chance of playing basketball. Hence, it is somewhat difficult to make crosssports comparisons. With that caveat in mind, black males are much less likely to participate in basketball and football, but particularly basketball, if they are involved in cultural classes and trips. Given the characteristics of other factors noted in the table, black males who have high or even the mean level of cultural capital versus low cultural capital will be less likely to play these sports. For example, a black male who lives in a two-parent family has a 26 percent likelihood of playing basketball and a 52 percent likelihood of playing football if he has low cultural capital. But if a similarly situated black male has high exposure to cultural activities, the likelihood that he will play interscholastic basketball or football drops to 3 percent and 30 percent, respectively. Although the effect of cultural capital on football participation is of the same magnitude for black and white male students, this is not the case for basketball participation. A decrease in the level of cultural capital results in a greater change in the probability of playing basketball for black males than for white males.

The effect of changes in the measure of household educational resources on the likelihood that black and white males will participate in basketball or football are similar to the
effect of changes in the measures of cultural capital. The exception is that household educational resources have no impact on basketball participation for white males. On the other hand, a black male who lives in a twoparent family and attends no cultural classes has a 31 percent likelihood of participating in basketball if his level of household educational resources is one standard deviation below the mean. If the same student has the mean level or one standard deviation above the mean level of household educational resources, his likelihood of participating in basketball drops to 25 percent and 20 percent, respectively.

The probabilities associated with changes in prior achievement, as measured by mathe-matics-reading composite scores, also illustrate the racial differences in the impact of prior mathematics-reading composite scores on participation in basketball. A black male from a two-parent family who attends no cultural classes has a 47 percent likelihood of participating in basketball if his prior test scores were one standard deviation below the mean score, while a similarly situated white male has a 14 percent likelihood of participation. The likelihood of participation decreases to 11 percent for the black male and to 10 percent for the white male if his prior test scores were one standard deviation above the mean score. This finding is particularly compelling, since it demonstrates that among the academically gifted, race has no bearing on the likelihood of playing basketball-it is relatively low for both high-performing whites and blacks.

These findings of racial differences in the impact of cultural capital, household educational resources, and prior achievement on participation in basketball (but not in football or other sports) are consistent with a number of observations about the relative importance of basketball among many in the black community. Basketball at the professional level is the sport in which the highest percentage of blacks participate. Hoberman (1997:6), who argued that a sports fixation in the black community has exacted a toll on black intellectual development, called basketball "the black sport par excellence." Thus, the finding that black males who lack cultural capital (rel-
Table 5. Predicted Probabilities of Participating in Interscholastic Basketball and Football for Male Students with Selected Characteristicsa

| Characteristics of Students | Basketball: White Students | Basketball: Black Students | Football: White Students | Football: Black Students |
| :---: | :---: | :---: | :---: | :---: |
| Two-parent family | . 111 | N.A. | N.A. | N.A. |
| Stepfamily | . 065 | N.A. | N.A. | N.A. |
| Two-parent Family |  |  |  |  |
| Low cultural capital (0 cultural classes, 0 cultural trips) | . 146 | . 261 | . 295 | . 515 |
| Mean cultural capital (mean level of cultural classes and trips) | . 111 | . 203 | . 263 | . 476 |
| High cultural capital (3 cultural classes, 3 cultural trips) | . 061 | . 030 | . 144 | . 300 |
| Two-parent Family, No Cultural Classes |  |  |  |  |
| 1 standard deviation below the mean score on the math-reading composite | . 142 | . 467 | . 303 | . 525 |
| Mean score on the math-reading composite | . 116 | . 247 | . 280 | . 497 |
| 1 standard deviation above the mean score on the math-reading composite | . 094 | . 110 | . 257 | . 468 |
| 1 standard deviation below the mean level of household educational resources | N.A. | . 306 | . 310 | . 533 |
| Mean level of household educational resources | N.A. | . 247 | . 280 | . 497 |
| 1 standard deviation above the mean level of household educational resources | N.A. | . 197 | . 251 | . 460 |

[^1]ative to those who have cultural capital) are much more likely to play basketball supports the idea that black males participate in basketball if they do not have the cultural advantages that will help them succeed scholastically.

Involvement in cultural classes, access to more household educational resources, and higher mathematics-reading composite scores are all related to lower participation in football; that these relationships do not differ for black and white males is also compelling, especially since the relationships between these factors and participation in basketball differ by race. One explanation may simply be differences in the aforementioned opportunity structure for the respective sports. Another explanation is that for working-class white males, playing football has a somewhat loftier status (akin to basketball for black males) than do other sports, particularly given the level of physical violence in football relative to basketball. Although the opportunity for social advancement (a professional career) may not be the driving force for white males with low cultural capital, football may be seductive for satisfying more immediate needs, such as self-esteem, masculinity, a sense of belonging, or a legitimate social outlet for expressing frustration (Coakley 1990; Messner 1990).

So while we are unable to determine if sports are used as a means for social and economic mobility or merely as a way of fulfilling more immediate status needs and wants, it is clear that culturally disadvantaged black males are much more likely than both similarly situated whites and culturally advantaged black males to participate in football and basketball. Furthermore, this relationship is specific only to football and basketball, since participation in other sports was unrelated to cultural capital, household educational resources, or prior standardized test scores.

## Race, Sports Participation, and Achievement

The models presented in Table 6 are OLS regressions of two measures of academic achievement (mathematics-reading achievement and grades composite) on students'
race, family SES and structure, family cultural and educational resources, prior achievement, and sports participation. These models show results consistent with prior research on the effects of family SES, cultural capital, and household educational resources on mathe-matics-reading achievement, but the models offer new evidence to support the idea that the relationship between sports participation and mathematics-reading achievement depends on the sport and the race of the participant.

Model 1 and 2 predict change in the dependent variable (mathematics and reading achievement, relative to others) from 1988 to 1990. They illustrate that the effect of participation in sports on mathematicsreading achievement varies by sport even after controlling for two measures of prior achievement. This inclusion of prior grades and achievement scores should help disentangle earlier effects of sports from current effects. In Model 1, both football and basketball participation are negatively associated with mathematics-reading achievement, while participation in other sports is not associated with achievement. In Model 2, we find no racial differences in the impact of participation in football, basketball, or other sports on changes in achievement. Therefore, and somewhat contrary to our expectations, participation in football and basketball appears to cost students in their subsequent academic achievement, regardless of whether they are black or white. Although participation in other sports appears to enhance students' subsequent performance on these tests, playing football or basketball seems to drain resources away from academic achievement.

Models 3 and 4 include similar OLS regressions of self-reported grades (10th grade) on students' race, family SES and structure, family cultural and educational resources, and sports participation. It is not surprising that both prior test scores and prior grades are significant predictors of self-reported grades (Models 3 and 4). Many of the associations between family measures (family SES, cultural trips, and cultural classes) and self-reported grades appear to be mediated by prior measures of academic performance (test scores and prior self-reported grades). However, the

Table 6. OLS Coefficient Estimates for Regression of Student's Mathematics-Reading Test Composite Score and Grades Composite on Race, Background Characteristics, Sports Participation, and Prior Achievement: 1990 Black and White Male 8th Graders in 1988
$\left.\begin{array}{lccc}\hline & \begin{array}{c}\text { Mathematics- } \\ \text { Reading Test } \\ \text { Composite } \\ \text { Model } 1\end{array} & \begin{array}{c}\text { Mathematics- } \\ \text { Reading Test } \\ \text { Composite } \\ \text { Model } 2\end{array} & \begin{array}{c}\text { Grades } \\ \text { Composite } \\ \text { Model } 3\end{array}\end{array} \begin{array}{c}\text { Grades } \\ \text { Composite } \\ \text { Model } 4\end{array}\right]$

[^2]effect of being raised in a single-parent household still exerts a direct influence on such grades, with those living with one parent reporting relatively lower grades, all things being equal. The indicator of race is still a significant predictor of grades, controlling for prior test scores and grades.

The patterns of association between participation in sports and self-reported grades, while somewhat distinct, are generally supportive of the overall findings that participation in different sports has differential consequences for academic achievement. First, the associations between playing football and basketball and grades fail to reach significance when prior grades and test scores are included in the analyses. However, participation in other sports appears to have benefits for grades, but only for whites. Indeed, the interaction coefficient between race and participation in other sports reveals that for black students, playing such sports actually has a significant negative effect on self-reported grades (see Model 4). This finding may help to account for the mixed results of prior research that sometimes supported a positive relationship (Braddock 1981; Otto 1982) and sometimes supported a negative relationship (Coleman 1961) between sports participation and achievement-participation in some sports may enhance academic achievement for some students, but participation may serve as a drain on academics for others. Again, while grades may be a less-than-perfect measure of actual learning, the findings reveal that what sport one plays and who is playing the sport are important considerations for understanding the link between sports and academic outcomes.

## DISCUSSION

Our findings suggest that the relationship between participation in sports and academics may be more complex than previous studies have acknowledged and that future studies that explore this relationship should incorporate an understanding of factors that contribute to participation in sports. Coupled with previous research that indicated that cultural
capital influences academic outcomes, our findings suggest that the link between sports and academics may differ, depending on the cultural resources that the student brings to school, as well as the particular sport or sports that the student plays. Considering Roscigno and Ainsworth-Darnell's (1999) finding that black and low-SES students receive less educational return for their level of cultural capital than do white and higher-SES students, we argue that it is vital to understand how the nexus between cultural resources, participation in sports, and educational outcomes may differ substantially according to a student's racial and class background.

Among our central findings were the following: (1) black males were more likely to be involved in sports generally than were whites, ceteris paribus; (2) differences in cultural capital (participation in cultural classes) were strong predictors of participation in basketball and football, but not in other sports; (3) the cultural capital measures did not make nearly as dramatic a difference in predicting the participation of white males as they did in predicting the participation of black males in basketball; (4) participation in basketball and football has a negative relationship with standardized achievement scores for its participants; (5) participation in basketball and football has neither benefits nor costs with regard to grades; and (6) playing other sports is associated with higher grades for whites but lower grades for blacks.

It was somewhat surprising that participation in football and basketball was found to be a drain on academic achievement (as measured by test performance), regardless of the race of the student. Although it is not clear if all these students are drawn to sports because of the hope of a professional career, as Edwards (1986) suggested is the case for black athletes, and/or because their participation satisfies more immediate social or personal needs, the implication of our research is that cultural disadvantage may contribute to an increased interest in and dependence on particular sports and that this dependence on sports may have additional adverse consequences for its participants in terms of academic achievement. Indeed, the temporal ordering of the relationship between involve-
ment in sports and academic achievement may be more complicated than some have previously assumed. Rather than sports serving simply as a drain on energies that could be spent in maximizing academic achievements, males may end up pursuing some sports because they lack the resources necessary to perform well academically, which only serves to disadvantage them further in achieving academic excellence.

Clearly, our models omit important factors that lead to participation in sports. We have no measures of parents' level of involvement in their sons' sports activities, parents' participation in sports, whether the parents play sports with their sons (or teach or coach their sons in sports), or even the extent of parents' interest in sports (e.g., parents' attendance at games). Furthermore, we have no measures of interpersonal support for involvement in sports from such key actors as friends, coaches, or other influential members in the community. However, our primary interest was to investigate whether differences in educational resources and cultural capital in black males would be related to involvement in particular sports and whether such involvement would have different academic implications for different participants, and we found support for these notions. Whether or not families intentionally push their sons toward participating in sports (at the expense of educational objectives), our analyses suggest that participation in cultural trips and classes may protect socioeconomically disadvantaged black and perhaps white males and provide benefits in terms of academic achievement.

Our analyses of academic outcomes were also limited by a lack of data on sport-specific sports participation in Wave 3 of NELS. 10 Future research should explore longer-term effects of sports participation, such as graduation, 12 th-grade achievement, and even college attendance. While our analyses included 8th-grade general participation in sports and 10th- grade participation in specific sports, measures of sport-specific participation in the 12th grade might have helped disentangle issues related to the effects of a short- versus long-term commitment to different sports. Finally, female and other racial and ethnic groups should also be studied.

In his analysis of the effects of school factors on participating in high school extracurricular activities (including sports), McNeal (1999) contended that involvement in extracurricular activities serves to increase levels of human (defined as one's level of skills, knowledge, and educational attainment), social (one's network of relationships established with other persons, such as peers, parents and teachers, and the intrinsic value of such bonds), and cultural capital. Our analysis could not directly address whether McNeal's assumptions are true for people across racial and SES categories and for every extracurricular activity. However, we offer the following conjecture based on our analysis. McNeal and others may be right that participation in such activities increases capital. If that is the case, it likely explains why people who lack such capital may be more drawn to participation in sports than are those who have significant levels of educational and cultural capital. Playing a sport may be a rational choice for a teenager with few resources to increase his or her level of overall capital. But the fact that participating in sports may increase one's social and human capital does not necessarily mean that it is a maximizing pathway for acquiring valuable capital in the future. As our analysis revealed, it may be particularly true only for the effects of certain sports (e.g., football and basketball) on academic achievement. Our analysis suggests that Edwards (1986) and others, on the one hand, and McNeal $(1995,1999)$ and others, on the other hand, can both be right-generally, participation in sports is positively associated with (or has little negative consequences for) desired student outcomes, but especially when the sport being played is football or basketball, it detracts from meaningful acquisitions of educationally related capital for blacks as well as for others who play such sports.

## NOTES

1. We included other sports as a comparison to examine whether the effects of factors that precipitate participation in sports when there are high-profile professional opportuni-
ties (especially for black males) will be different from factors that precipitate participation in other sports. We explored similar models for females, and these models suggest that the relationships differ by sport and by gender.
2. Imputed values were calculated using Stata's impute command, which replaces missing values with predicted values based on the best subset of otherwise available data (Statacorp 1997).
3. Models that included parental education and familial income as separate variables in the place of the family SES composite were analyzed but did not significantly alter the findings.
4. School enrollment may also be related to the quality of the educational environment for the child, as well as access to educational resources.
5. Family size was included in original models not reported here, but was found to have no direct effect on sports participation.
6. To calculate the effect of the independent variable on the odds of the student not participating in the sport, we calculated the inverse of the effect on the odds of the student participating in the sport.
7. While some collinearity exists between the two measures of prior achievement (the mathematics-reading composite and the grades composite), it does not substantially alter the results. When entered individually, each measure has a similar coefficient estimate and significance with the exception of the effect of math-reading achievement on participation in other sports. The effect of mathematics-reading achievement on participation in other sports is positive and significant when the measure of prior grades is excluded from the analysis.
8. We recognize that the inclusion of orga-nization-level measures of school characteristics violates the assumption of independent errors, since many of the students in the sample attended schools with other students in the sample. In response to this concern, wo reanalyzed all our models using a hierarchical linear model for continuous outcomes and a hierarchical generalized linear model for binary outcomes. We found little difference in the results of the logistic or OLS models versus
the hierarchical models (i.e., significance did not change and coefficients differed little in magnitude). In addition, reliability issues surfaced in the hierarchical models when we used only a subset of the students originally included in the NELS 88-92 panel (we included only black and white males), which resulted in a low number of students per school (see Carbonaro 1999). In fact, the modal number of students per high school in our sample was one student, with greater than 20 percent of the students in our sample in this situation. Hence, we report the results of our logistic and OLS regression analyses.
9. The $F$-test for the race interactions is reported in Table 4. This test indicates the significance of the inclusion of the race interactions as a group.
10. The third wave (second follow-up) NELS survey asked students a global question regarding sports participation, but did not ask which sports they played.

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[^0]:    a Metric coefficients (standard errors).

    * $p<.05$, ** $p<.01$, ${ }^{* * *} p<.001$ (one-tailed test).

[^1]:    a All the students reported here were in the 10th grade; participated in interscholastic but not intramural sports in the 8th grade; were in a school with 10-49 percent minority enrollment and 800-1,599 students; and were at the mean for SES, household educational resources, cultural courses, cultural trips, prior grades, and prior math-reading composite score unless otherwise noted.

[^2]:    ${ }^{\text {a }}$ Metric coefficients (standard errors).

    * $p<.05$, ** $p<.01,{ }^{* * *} p<.001$ (two-tailed test).

