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Article in *Social Forces* · September 2002

DOI: 10.1353/sof.2002.0038

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Why Does It Take a Village? The Mediation of Neighborhood Effects on Educational Achievement*

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Abstract

The urban and educational literature has recently begun to focus on the increase of concentrated poverty in inner-city neighborhoods and the educational failure of youth often associated with living in these neighborhoods. The current study examines this issue by identifying which neighborhood characteristics influence educational achievement and what mechanisms mediate these associations. Using the National Educational Longitudinal Study of 1988 linked to 1990 census information at the neighborhood level, the current study finds not only that neighborhood characteristics predict educational outcomes but also that the strength of the predictions often rivals that associated with more commonly cited family- and school-related factors. When considering how neighborhood characteristics influence educational outcomes, theorists have proposed several mediating processes, including collective socialization, social control, social capital, perception of opportunity, and institutional characteristics. The current study reveals that these mediators account for about 40% of the neighborhood effect on educational achievement, with collective socialization having the strongest influence. Also discussed are the theoretical and policy implications of this study and directions for future research.

Increasing concentration of poverty in urban areas over the last thirty years has renewed interest in the effects of neighborhood-level conditions on the well-being of residents (Massey & Denton 1993; Massey, Gross & Eggers 1991; Wilson 1987,

** The author wishes to acknowledge Richard Adams, Kim Darnell, Douglas Downey, Charles Jaret, Lauren Krivo, Donald Reitzes, Vincent Roscigno, and Eric Stewart for helpful comments. This research has been supported by a grant from the American Educational Research Association, which receives funds for its "AERA Grants Program" from the National Center for Educational Statistics and the Office of Education Research and Improvement (U.S. Department of Education) and from the National Science Foundation under NSF Grant #RED-9452861. Opinions reflect those of the author and do not necessarily reflect those of the granting agencies. Direct all correspondence to James W. Ainsworth, Department of Sociology, Georgia State University, University Plaza, General Classrooms 1063, Atlanta, GA 30303. E-mail: socjwa@panther.gsu.edu.*

1996). One dramatic way in which neighborhoods may affect social mobility and quality of life is through their influence on educational outcomes of young residents. Previous research has found that dropout rates in severely distressed neighborhoods are more than three times as higher as those in nonpoverty neighborhoods and that the jobless rates for young high school dropouts in distressed urban neighborhoods are often over 80% (Kasarda 1993). Clearly, knowing the degree to which neighborhood characteristics influence educational outcomes is important to our understanding the processes that reproduce social inequality. To this end, the current study focuses on examining which neighborhood characteristics influence educational behavior and achievement and what mechanisms mediate these associations.

Although numerous researchers have detailed the causes of concentrated urban poverty and explored its association with behavioral outcomes (e.g., Fainstein 1986-87; Farley 1988; Hughes 1989; Jargowsky & Bane 1991; Massey & Denton 1993; Wilson 1987, 1996), empirical research has generally neglected the processes through which neighborhood disadvantage influences individual and group behavior (Sampson 1991; for recent notable exceptions, see Catsambis & Beveridge 2001; South & Baumer; South, Baumer & Lutz 2001). However, several studies have suggested the need for such research (Connell & Halpern-Felsher 1997; Datcher 1982; Duncan 1994; Ensminger, Lamkin & Jacobson 1996; Garner & Raudenbush 1991). Connell and Halpern-Felsher (1997) argue that their findings point to an “enormous gap in our empirical representation of processes mediating neighborhood effects on adolescent outcomes” (197). Because little is known about such processes, the question of how neighborhood context influences individual outcome is the most important unanswered question in neighborhood research. Because of this void, even the most influential theories concerning the way urban poverty affects individuals have yet to be fully empirically examined (e.g., Wilson’s social isolation/disorganization theory). The current study identifies and investigates several factors, derived from prominent theories, that may mediate the relationships between neighborhood characteristics and educational outcomes.

Neighborhood Contextual Effects on Educational Outcomes

Wilson (1987, 1996) argues that the social isolation and disorganization experienced by inner-city residents result in several major social problems, including a prevalence of delinquent subcultures, the weakening of basic institutions, and the lack of social control — all of which contribute to the high rate of educational failure in inner-city neighborhoods. Wilson and others have described five interrelated mechanisms through which neighborhood characteristics affect educational achievement: collective socialization, social control, social capital, differential occupational opportunity, and institutional (i.e., school) characteristics.

Most prominent in the neighborhood literature has been collective socialization theory.

COLLECTIVE SOCIALIZATION

According to Wilson (1996), neighborhood characteristics influence collective socialization processes by shaping the type of role models youth are exposed to outside the home. He claims that neighborhoods where most adults have steady jobs foster behaviors and attitudes that are conducive to success in both school and work. Therefore, children in such advantaged neighborhoods are more likely to value education, adhere to school norms, and work hard because that is what they see modeled for them by neighborhood adults.

In neighborhoods in which many adults do not work, Wilson (1991) argues that life can become “incoherent” for youth because of the lack of structuring norms modeled by working adults. The school-related behaviors and attitudes of youth in disadvantaged neighborhoods are likely to be conflicted because of the competing influence of mainstream ideological imperatives and structural constraints resulting from a lack of opportunity that prevents youth from reaching their goals (Anderson 1999). For example, Wilson (1996) argues that the typical inner-city “ghetto” culture includes many elements of mainstream culture, including an achievement ideology, which suggests that if one works hard in school it will pay off in terms of a good job. This contention is consistent with several ethnographic studies that suggest ghetto residents adhere to the basic values of American society (Anderson 1978, 1999; Hannerz 1969; Liebow 1967; Rainwater 1970). What sets ghetto residents apart from other Americans is their inability to realize such ideals through legitimate means because of restricted opportunities and other social constraints (Massey & Denton 1993; Massey & Fong 1990; Wilson 1996; also see Merton’s 1938 discussion of strain theory).¹ Thus, while some “ghetto” residents may gain status by adhering to the mainstream ideology and by putting down their neighbors who do not (Wacquant 1996), others are likely to scorn conventional American values altogether (Anderson 1990). As Massey and Denton (1993) state:

In response to the harsh and isolated conditions of ghetto life, a segment of the urban black population has evolved a set of behaviors, attitudes, and values that are increasingly at variance with those held in the wider society. . . . As a result, an alternative status system has evolved within America’s ghettos that is defined *in opposition* to the basic ideals and values of American society. (165-67, emphasis in original)

Therefore, the accidental or emergent cultural transmission of structurally adaptive behaviors and attitudes that discourage success in school may take place in disadvantaged neighborhoods (Hannerz 1969; Swidler 1986; Wilson 1996). Specifically, with fewer positive role models in their neighborhood, children may be less likely to learn important behaviors and attitudes that lead to success in school

(e.g., high educational expectations or effort), both because of a lack of exposure to them and because they have no direct evidence that these attitudes and behaviors are useful or desirable.²

OTHER POTENTIAL MEDIATORS OF NEIGHBORHOOD EFFECTS

In addition to collective socialization processes, neighborhood levels of social control — or the monitoring and sanctioning of deviant behavior — may also influence the educational performance of neighborhood youth. Neighborhoods with fewer adults or adults with limited time to influence the lives of youth also are likely to have fewer people involved in organizing community activities (Anderson 1990; see also Stewart, Simons & Conger n.d.). Children in such communities have fewer choices about how to spend their time in constructive ways and therefore are more likely to take part in deviant activities (Wacquant 1996). With limited adult supervision, peer-group influences may become stronger relative to parental influence. If this is the case, subcultures that resist mainstream (adult) culture — including school norms — are more likely to develop. That is, students who are monitored less, given fewer activity options, and subject to more influential peer subcultures may be more likely to develop antischool attitudes and behaviors. This situation may increase the number of youth in a neighborhood who choose to drop out of high school.

A third mechanism through which neighborhood context can influence educational outcomes is the amount and quality of social capital (or social networks) that exist in a given community (Wilson 1996). Sampson and Groves (1989) and Wilson (1996) argue that children who live in advantaged neighborhoods are more likely to be exposed to helpful social networks or adults who can provide positive resources, information, and opportunities that may be educationally beneficial (e.g., access to the use of personal computers, job opportunities, or help with a science fair project). Alternatively, individuals in impoverished neighborhoods may be disadvantaged not only by smaller social networks (Wacquant & Wilson 1989) but also by networks that are less beneficial than those in more advantaged neighborhoods as a result of the social position of partners, parents, siblings, and friends (Sampson & Groves 1989). Under these conditions, ties to groups or individuals with few resources could prove to be negative, because those ties represent obligations rather than the ability to draw upon each other's useful information and resources (Portes 1998; Van Haitsma 1989).³ The importance of neighborhood context is further supported by Wilson's (1996) argument that in impoverished neighborhoods "children are disadvantaged because the social interaction among neighbors tends to be confined to those whose skills, styles, orientations, and habits are not as conducive to promoting positive social outcomes as are those in more stable neighborhoods" (63).

Wilson (1996) also emphasizes the importance of occupational opportunity in structuring the lives of neighborhood youth. Several researchers have argued

that perceptions of occupational opportunity positively affect educational outcomes (Ainsworth-Darnell & Downey 1998; MacLeod 1995; Ogbu 1978; Willis 1976). While most students, regardless of their neighborhood type, are taught that anyone can be successful if they work hard enough, the degree to which this ideology is supported by the concrete experience of adolescents may vary by neighborhood context (Massey, Gross & Eggers 1991; Turner, Fix & Struyk 1991; C. Wilson 1992; W. Wilson 1987). If students are motivated to succeed in school because they believe that education will pay off the form of a good job, then experiencing such discrimination may call into question the association between academic success and job opportunities and may affect their academic effort. Moreover, if youth living in disadvantaged neighborhoods perceive no difference in the occupational prospects of their older peers who completed high school and those who dropped out, they are likely to become discouraged and stop demonstrating academic effort.

A fifth mechanism through which neighborhood context can influence educational outcomes is the neighborhood's effect on institutional characteristics, such as the schools students attend. While school quality varies from one school district to another, quality also varies with neighborhood context. For example, neighborhoods may affect school quality through the inability of inner-city neighborhood schools to recruit and retain good educators (Jencks & Mayer 1990). Resulting strains could deteriorate school atmosphere and the school's ability to control student behavior. Wacquant (1996) argues that students from disadvantaged neighborhoods are more likely to attend inferior schools that spend less time on teaching and learning. In support of this claim, Wilson (1996) states that inner-city residents are more likely to complain about uncaring and unqualified teachers and the lack of school resources. Similarly, Simcha-Fagan and Schwartz (1986) argue that neighborhood effects on an individual's association with delinquent peers are primarily indirect and mediated through weak attachment to school. Although such institutional mediation of neighborhood effects seems likely, it has received relatively little theoretical consideration in the neighborhood literature.

It is with the above theoretical processes in mind that the current study addresses the mediation of neighborhood effects on educational outcomes.

Data

A major stumbling block faced by researchers attempting to examine how neighborhood context influences educational outcomes has been the lack of generalizable data containing a wide variety of information at several levels. Ideally, one needs data that contain a wide range of neighborhood characteristics as well as detailed information about students, their families and peers, and the schools they attend. To facilitate broad generalizability, the data should also include individuals from a wide variety of neighborhood types. Respondents must also be followed over time to address issues of residential mobility and exposure to neighborhood

context. The National Education Longitudinal Study (NELS) of 1988 matched to 1990 U.S. census data at the ZIP code level uniquely fits all these criteria.

The NELS is a large nationally representative data set. In 1988 the National Center for Educational Statistics drew random samples of approximately 25 eighth-graders in each of about 1,000 randomly selected middle schools. Students were then traced to high school in 1990 and 1992, with high follow-up response rates (see National Center for Educational Statistics 1992). What is unique about this data set is that the data have been linked to census information for the ZIP code in which the student lived at all three time points (1988-92). Together, the data provide an unusual combination of indicators of family background, school characteristics, neighborhood characteristics, student measures, and educational outcomes. This study takes advantage of the longitudinal nature of the NELS data by performing analyses on those students who have persisted in the same neighborhood over time (from 1988 to 1992). This will ensure that the students have been exposed to the same neighborhood context for a number of years. An additional screening process excluded those students without standardized test scores, for a final sample of 13,196 tenth graders in 1990.

Measurement

Table 1 reports the descriptions, means, and standard deviations for key measures. Time spent on homework and educational achievement (student math/reading test scores) are the primary outcomes of interest for this study. Time spent on homework is treated as an outcome variable because of Wilson's (1987, 1996) theoretical emphasis on how neighborhood context likely influences students' effort. Although initial analysis predicts homework, it is also considered to be an important mediator of neighborhood characteristics on this study's ultimate dependent variable: standardized test scores. The math/reading composite score, derived from tests developed by the Educational Testing Service, offers this standardized measure of achievement. Despite limitations and biases related to examining test scores, there are good reasons for using such measures. First, achievement-test scores reflect an overall measure of success in school. Students' test scores are significantly related to educational outcomes, both positive (e.g., college attendance) and negative (e.g., student dropout status). Unlike other variables, test scores reflect variation across the entire range of student performance. Second, test scores are comparable across localities, thereby allowing for generalizable national analyses. Finally, given the increasing political emphasis on educational testing, evaluation devices similar to the one used here are ever more likely to be used as yardsticks for determining eligibility for promotion and graduation.

NEIGHBORHOOD VARIABLES

Neighborhood context is defined with a set of four theoretically and statistically distinct indicators, including high-status residents, residential stability, economic deprivation, and racial/ethnic heterogeneity.⁴ The first two neighborhood measures, high-status residents and residential stability, indicate neighborhood advantage. The measure of neighborhood high-status residents is a standardized composite of the proportion of college graduates among adults over 24 years old and the proportion of employed persons with professional or managerial occupations. This factor allows me to consider the spatial concentration of advantage in terms of the potential pool of positive role models in the student's neighborhood (Morenoff & Tienda 1997). Such indicators have proven to be quite influential in the neighborhood literature (e.g., Brooks-Gunn et al. 1993).

The residential stability measure indicates the proportion of householders who have lived in the same house for at least five years. This is an important neighborhood characteristic to consider because the assimilation of newcomers into a neighborhood is a temporal process, and therefore residential mobility acts as a barrier to the development of friendship networks (also see Weicher 1990). Residential stability, on the other hand, has a positive effect on social cohesion from increases in friendship networks and decreases in anonymity among neighbors. In fact, regardless of their own length of residence, residents of high-turnover neighborhoods have fewer opportunities to form friendships and organizational contacts, are less satisfied with their communities, and may be less motivated to form friendships (Sampson 1991). In short, we should expect residential stability to enhance processes related to collective socialization and social networks and in turn improve the educational outcomes of neighborhood youth.

In addition to these measures of neighborhood advantage, I include indicators of neighborhood economic deprivation and racial/ethnic diversity as measures of neighborhood disadvantage. The measure of economic deprivation is a standardized composite of the proportion of civilians over 16 years old who are unemployed or not in the labor force and the proportion of individuals with incomes below the poverty level. I include the jobless rate because Wilson (1996) has emphasized its role in the creation of "the new urban poverty." The poverty rate allows me to take into consideration another dimension of material deprivation that is present in the neighborhood. These two indicators both reflect weak attachment to the formal economy at the neighborhood level. To capture the neighborhood's level of racial and ethnic diversity, I subtracted from one the sum of the squared proportions of residents for each of the following, mutually exclusive, racial or ethnic groups: whites, African Americans, Asians, Native Americans, and others (see Bellair 1997; Sampson & Groves 1989; Warner & Rountree 1997). This measure theoretically ranges from 0 to .8, with high scores indicating a neighborhood that is racially and ethnically heterogeneous and low scores indicating a neighborhood that is racially and ethnically homogeneous. It is included because of the theoretical expectation

TABLE 1: Descriptions, Means, and Standard Deviations of Variables for High School Students Who Persisted in the Same Neighborhood from 1988 to 1992

Variable	Description	Metric	Mean	S.D.
<i>Educational achievement</i>				
Student math/reading test score	Composite of math and reading standardized test scores in tenth grade	27.94 = lowest score 121.56 = highest score	74.49	22.37
<i>Neighborhood characteristics</i>				
Neighborhood high-status residents	Standardized composite of the following proportions for youth's neighborhood of residence: (1) proportion of college graduates among persons over 24 years of age; (2) proportion of employed persons with professional or managerial occupations	-1.97 = lowest score 3.99 = highest score	.00 (correlation = .95)	1.00
Neighborhood residential stability	Proportion of householders who have lived in the same house for five or more years in youth's neighborhood of residence	.00 = lowest proportion .99 = highest proportion	.53	.11
Neighborhood economic deprivation	Standardized composite of the following proportions for youth's neighborhood of residence: (1) proportion of unemployed persons among those over 16 years of age, (2) proportion of persons with incomes below the poverty level	-3.11 = lowest score 7.12 = highest score	.00 (correlation = .76)	1.00
Neighborhood racial/ethnic diversity	One minus the sum of the squared proportions of each of the following racial/ethnic groups in youth's neighborhood: whites, blacks, Asians, Native Americans, and others	0 = most homogeneous .74 = most heterogeneous	.21	.19

TABLE 1: Descriptions, Means, and Standard Deviations of Variables for High School Students Who Persisted in the Same Neighborhood from 1988 to 1992 (Continued)

Variable	Description	Metric	Mean	S.D.
<i>Mediating variables</i>				
Homework	Overall, about how much time does youth spend on homework out of school each week?	0 = 0 hours 16 = 15 or more hours	4.33	4.20
Educational expectations	How far in school does youth think he/she will get?	0 = less than HS graduate 5 = Ph.D., M.D.	2.92	1.18
Friends dropped out	Altogether, how many of youth's close friends have dropped out of school without graduating?	0 = none 3 = all	.25	.49
Intergenerational closure	Number of parents of youth's close friends whom youth's parent knows	0 = none 5 = five or more	2.64 (alpha = .79)	1.75
Occupational expectations	What type of job or occupation does youth expect or plan to have when he/she is 30 years old?	0 = not planning to work 4 = professional	2.49	1.27
School atmosphere	According to a school administrator, how much does each of the following characteristics describe the youth's school climate? (1) students place a high priority on learning; (2) teachers at this school press students to achieve academically; (3) students are expected to do homework; (4) teacher morale is high; (5) student morale is high; (6) counselors and teachers encourage students to enroll in academic classes; (7) teachers have a negative attitude about students; (8) teachers find it difficult to motivate students; (9) there is conflict between teachers and administrators	10 = negative school climate 36 = positive school climate	29.96 (alpha = .79)	4.01

(Continued on next page)

TABLE 1: Descriptions, Means, and Standard Deviations of Variables for High School Students Who Persisted in the Same Neighborhood from 1988 to 1992 (Continued)

Variable	Description	Metric	Mean	S.D.
<i>Family characteristics</i>				
Family socioeconomic status	Standardized composite of father's education level, mother's education level, father's occupation, mother's occupation, and family income	-2.97 = lowest score 2.56 = highest score	-.056 (alpha = .75)	.76
Single-parent household	Student lives in a single-parent household.	0 = not in single-parent household 1 = in single-parent household	.15	.36
Stepparent household	Student lives in a stepparent household.	0 = not in stepparent household 1 = in stepparent household	.11	.32
Number of siblings	Number of siblings the youth has	0 = none 6 = six or more	2.23	1.54
Discusses school with parents	In the first half of this school year, how often have you discussed the following with either or both of your parents or guardians? (1) selecting courses or programs at school; (2) school activities or events of particular interest to you; (3) things you've studied in class	0 = never to all three questions 6 = often to all three questions	3.16	1.49

TABLE 1: Descriptions, Means, and Standard Deviations of Variables for High School Students Who Persisted in the Same Neighborhood from 1988 to 1992 (Continued)

Variable	Description	Metric	Mean	S.D.
<i>Family characteristics (cont'd)</i>				
Parental involvement in school	In the first half of the school year, how often did either of your parents or guardians do any of the following? (1) attend a school meeting; (2) attend a school event in which you participated; (3) act as a volunteer at your school	0 = never to all three questions 6 = two or more times to all three questions	2.06	1.65
<i>School controls</i>				
Private school	Student attends a private school (in 1990).	0 = public school 1 = private school	.10	.31
Student/teacher ratio	The number of students per full-time regular teacher at youth's school (in 1990)	2.96 = lowest ratio 72.37 = highest ratio	29.53	39.46
Poor teacher quality	Percentage of the teachers in youth's school whom a school administrator considers to be poor teachers (in 1990)	0 = 0% 25 = 25%	4.78	4.65
Percentage on free lunch	Percentage of the total student body in school that receives free or reduced-price school lunches	0 = 0% 100 = 100%	18.66	20.53

that racial/ethnic heterogeneity keeps inner-city residents from forming consensus about norms and values (Elliott et al. 1996; Sampson & Groves 1989; Shaw & McKay 1942).

MEDIATING VARIABLES

According to Simcha-Fagan and Schwartz (1986), socialization processes mediate neighborhood effects on individual outcomes to a large extent. Consideration of only direct effects leads to an oversimplification of such processes. For this reason, researchers need to take into account the mechanisms that have been cited as mediating the relationship between neighborhood context and individual outcomes. As discussed above, the neighborhood literature proposes five interrelated explanations of the mechanisms that link neighborhood context with educational outcomes. Table 2 summarizes these theoretical explanations, their conceptualization, and the operational definitions used to test each concept.

First, collective socialization (i.e., role-modeling processes) is expected to influence youth's school-related behaviors and attitudes (Anderson 1990; Wilson 1991, 1996). Although both measures are likely to be influenced by mainstream ideological imperatives, behaviors are also largely determined by structural constraints unrelated to a student's attitudes. For this reason, in the prediction of standardized test scores, I measure school-related behaviors as the number of hours of homework the student does per week. A measure of student's educational expectations is included to test whether neighborhood context influences school-related attitudes.

Second, in neighborhoods with less effective social control, peer-group culture likely plays a greater role in the activities of neighborhood youth (Anderson 1990; Wacquant 1996; Wilson 1996). In order to test for such peer-group effects, I include a measure of the number of the student's close friends who dropped out of high school. This aggregate measure arguably reflects a neighborhood's ability to control deviant behaviors — in this case, deviance directly related to the educational process: dropping out.

Third, theorists argue that variation in social capital and its returns represents another mechanism through which neighborhood context can influence educational outcomes (Sampson & Groves 1989; Shaw & McKay 1942; Wacquant & Wilson 1989; Wilson 1996). One indicator of social capital — social networks — has been shown to be beneficial under most neighborhood conditions (Sampson 1991) and is likely to affect students' educational outcomes (Wilson 1996). For this reason, I include a commonly used indicator of social networks referred to as intergenerational closure (Coleman 1990) that measures the number of parents of the student's close friends whom the student's parent knows.

Fourth, neighborhoods vary according to the number and types of occupational opportunities available to neighborhood youth (Massey, Gross & Eggers 1991;

TABLE 2: Relationships between Theoretical Explanations, Conceptualizations, and Operationalizations of Neighborhood Mediators

Theoretical Explanation of Neighborhood Mediation	Conceptual Source of Mediation	Operational Definition(s)
Collective socialization	School-related behaviors and attitudes	Time spent on homework Educational expectations
Social control	Peer-group culture	Number of friends who dropped out
Social capital	Social networks	Intergenerational closure
Limited occupational opportunity	Perception of occupational opportunity	Occupational expectations
Institutional factors	School characteristics	School atmosphere

Neckerman & Kirschenman 1991; Turner, Fix & Struyk 1991; Wilson 1996). As students perceive such variation, they are likely to adjust their occupational goals to correspond with the opportunities available. I operationally define perception of opportunity as the student's occupational expectations for age 30.

Finally, institutions may be influenced by neighborhood context and, in turn, may shape educational outcomes (Jencks & Mayer 1990; Simcha-Fagan & Schwartz 1986; Wacquant 1996; Wilson 1996). Among institutions, schools are the most likely to mediate educational outcomes, and so I include a measure of institutional-level school atmosphere as a mediator of neighborhood effects. Neighborhood context may influence school atmosphere through variations in resource allocation and teacher quality. In order to account for such school effects, I include both school-level mediating effects (school atmosphere) and control variables (described below) into my modeling strategy. Specifically, in order to measure the degree to which there is a positive school atmosphere, I construct an index composed of indicators of student and teacher morale, whether students place a high priority on learning, and whether teachers find it difficult to motivate students (see Table 1 for specific indicators used).

CONTROL VARIABLES

Beyond the neighborhood effects and potential mediating variables discussed above, I control for several factors that likely affect educational outcomes. These include family background characteristics, such as family socioeconomic status, family

structure, and number of siblings. Family socioeconomic status is measured with a standardized composite that includes parental education, parental occupational status, and family income. Family structure is measured with a set of dummy variables representing single-parent (Downey, Ainsworth-Darnell & Dufur 1998) and stepparent households (Downey 1995a), with mother/father households as the referent; and number of siblings is included as a family control (Downey 1995b). In addition to these family background characteristics, I control for school-related parental interaction using a measure of how often the student discusses course selection, school events, and things studied in class with his or her parent. Parental involvement in school-related events is also controlled for with a measure that indicates whether the parent attended meetings or events or volunteered at the student's school. Controlling for this wide range of family characteristics is intended to ensure that the neighborhood characteristics in the analysis are not capturing unmeasured family processes that may be related to neighborhood residence.

Student race is measured with a series of dichotomous variables that identify African Americans, Hispanics, Asians, and Native Americans (with whites as the reference group). Sex is also controlled with a dichotomous variable. I control for several school effects, including private school attendance, student/teacher ratio, low teacher quality, and a measure of the school's aggregate socioeconomic status: the percentage of students receiving free or reduced-price lunches. Finally, I control for two additional spatial characteristics: region of the country⁵ and urban/suburban/rural location of the school. Region of the country is defined with four categories: Northeast, North Central, West, and South (the reference category). I also use two dummy variables for urban and rural location, with suburban as the reference category.

Results

WHICH NEIGHBORHOOD CHARACTERISTICS INFLUENCE EDUCATIONAL OUTCOMES?

The first question this research addresses is whether there are neighborhood characteristics that predict educational outcomes. If such effects are identified, then the relative importance of each can be assessed and their predictive relationships detailed. In Tables 3 and 4, I present multivariate regression models⁶ that predict time spent on homework and educational achievement, respectively, using four measures of neighborhood context: high-status residents, residential stability, economic deprivation, and racial/ethnic diversity.⁷

As shown in Tables 3 and 4, when neighborhood characteristics are entered individually (while controlling for family, racial, school, and other characteristics), a greater prevalence of high-status residents (model 1) strongly predicts more time spent on homework ($b = .411, p < .001$) and higher mathematics/reading test scores ($b = 1.808, p < .001$). Greater neighborhood economic deprivation (model 3), on

the other hand, is a significant predictor of lower mathematics/reading test scores ($b = -.745$, $p < .05$). However, the influences of neighborhood residential stability (model 2) and racial/ethnic diversity (model 4) on mathematics/reading test scores are nonsignificant. In model 5, which includes all four neighborhood characteristics, the effects of neighborhood high-status residents remain fairly constant ($b = .445$, $p < .001$, for homework; $b = 1.827$, $p < .001$, for test scores). But in these full models residential stability emerges as a significant and positive predictor of time spent on homework ($b = 1.430$, $p < .05$), and the influence of economic deprivation on test scores diminishes to a nonsignificant level ($b = -.301$, ns). These changes are suggestive. First, the benefits of having high-status residents in a neighborhood seem to overshadow that there is more residential instability in neighborhoods with higher proportions of such residents.⁸ Second, more than half the detrimental influence of living in a more economically deprived neighborhood is due to the lack of high-status residents in such neighborhoods. Overall, only two of the four neighborhood effects prove to be significant predictors of time spent on homework and educational achievement, and only one maintains significance in the full model when predicting achievement. This test provides only moderate support for the theoretical expectations of Wilson's (1987, 1996) social disorganization theory, but the consistency of high-status residents being the most important contextual effect is in agreement with past neighborhood studies (e.g., Brooks-Gunn et al. 1993).

Although several factors play a role in determining students' educational outcomes, it is still unclear how important the neighborhood characteristics are relative to individual, family, and school factors. I address this question by comparing the standardized coefficients of these variables (not reported in the tables) and presenting a "real world" comparison of the magnitude of various effects. The standardized coefficients reveal that family socioeconomic status is an important cause of time spent on homework ($\beta = .113$) and educational achievement ($\beta = .339$). Beyond this, however, the number of neighborhood high-status residents rivals the predictive power of many family and school factors that are often cited in the educational literature. For example, the number of high-status residents in a student's neighborhood was the second-strongest predictor of educational achievement ($\beta = .076$), superseding the importance of attending a private school ($\beta = .026$), low teacher quality ($\beta = .044$), number of siblings ($\beta = .046$), and sex (i.e., being female) ($\beta = .044$).⁹ In the prediction of time spent on homework, the proportion of high-status residents is once again more important ($\beta = .098$) than other variables often thought to be key to educational success, including parental involvement ($\beta = .085$) and private school attendance ($\beta = .064$). Clearly, the presence of high-status residents in the neighborhood plays a statistically important role in students' academic achievement.

A critic of neighborhood effects may argue that the reported effect of high-status residents on educational achievement is substantively small. In real-world terms, the difference between living in a relatively disadvantaged neighborhood (one

TABLE 3: Regression Models Predicting Time Spent on Homework with Neighborhood Characteristics and Selected Independent Variables Controlling for Clustering within Hierarchical Structures

	Homework				
	Model 1	Model 2	Model 3	Model 4	Model 5
<i>Neighborhood characteristics</i>					
Neighborhood high-status residents	.411*** (.080)				.445*** (.087)
Neighborhood residential stability		.489 (.615)			1.430* (.647)
Neighborhood economic deprivation			-.100 (.072)		-.007 (.078)
Neighborhood racial/ethnic diversity				.340 (.419)	.487 (.416)
<i>Family characteristics</i>					
Family socioeconomic status	.639*** (.090)	.827*** (.087)	.804*** (.089)	.821*** (.087)	.639*** (.090)
Single-parent household	-.110 (.151)	-.070 (.153)	-.063 (.152)	-.073 (.152)	-.106 (.149)
Stepparent household	-.052 (.166)	-.076 (.167)	-.078 (.167)	-.081 (.167)	-.039 (.166)
Number of siblings	.037 (.036)	.033 (.037)	.034 (.037)	.034 (.037)	.038 (.037)
Discusses school with parents	.401*** (.039)	.404*** (.039)	.403*** (.039)	.404*** (.039)	.402*** (.039)
Parental involvement in school	.222*** (.033)	.217*** (.034)	.218*** (.034)	.218*** (.034)	.219*** (.033)
<i>Student race</i>					
Black	-.379 (.195)	-.383* (.194)	-.355 (.198)	-.427* (.213)	-.466* (.217)
Hispanic	.105 (.216)	.091 (.215)	.111 (.215)	.036 (.220)	.053 (.224)
Native American	-.976** (.328)	-.919** (.338)	-.827* (.362)	-.905** (.346)	-.961** (.338)
Asian	1.138*** (.314)	1.238*** (.310)	1.232*** (.311)	1.201*** (.313)	1.085*** (.312)

standard deviation below the mean) and living in an advantaged neighborhood (one standard deviation above the mean) is 3.65 points on the standardized achievement test.¹⁰ In comparison to other effects, this difference is more than one-third the effect of being black, more than half the difference between white and Hispanic students, and twice the effect of attending a private school. Moreover,

TABLE 3: Regression Models Predicting Time Spent on Homework with Neighborhood Characteristics and Selected Independent Variables Controlling for Clustering within Hierarchical Structures (Cont'd)

	Homework				
	Model 1	Model 2	Model 3	Model 4	Model 5
<i>School controls</i>					
Private school	.988*** (.240)	.985*** (.244)	1.040*** (.242)	.975*** (.243)	.916*** (.248)
Student/teacher ratio	.003* (.001)	.004* (.002)	.003* (.001)	.003* (.002)	.003* (.001)
Low teacher quality	-.009 (.012)	-.010 (.013)	-.010 (.013)	-.010 (.013)	-.009 (.013)
Percentage on free lunch	.004 (.003)	-.001 (.003)	.002 (.003)	-.001 (.003)	.002 (.004)
R ²	.129	.123	.124	.123	.130

Note: Unstandardized coefficients for high school students who persisted in the same neighborhood from 1988 to 1992. Standard errors are in parentheses. Other controls include student's sex, region of the country, and urban/suburban/rural trichotomy. Mean substitution of data.

* $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed tests)

the parallel difference in terms of time spent on homework (.890 hours per week) is comparable to the effect of private school attendance (.916 hours per week) and is almost twice as much as the black/white disparity (.466 hours per week). Clearly, these effects are not trivial.

HOW ARE NEIGHBORHOOD EFFECTS ON EDUCATIONAL ACHIEVEMENT MEDIATED?

Tables 5 and 6 present two series of regression models that predict time spent on homework and educational achievement, respectively. These series of models include the neighborhood characteristics that were significant predictors of these outcomes in Tables 3 and 4 (high-status residents and residential stability in the case of time spent on homework, and high-status residents alone in the models predicting educational achievement). The mediating variables are entered individually (in models 2-6 in Table 5 and models 2-7 in Table 6) and collectively (in the final models). Family characteristics, student race, school effects, and other controls are included in all models. The primary goals of this analysis are to determine whether the mediating variables influence educational outcomes as expected and to assess how much of the influence of neighborhood characteristics on educational outcomes is explained by these mediating variables.

TABLE 4: Regression Models Predicting Math/Reading Achievement with Neighborhood Characteristics and Selected Independent Variables Controlling for Clustering within Hierarchical Structures

	Mathematics/Reading Achievement Test Scores				
	Model 1	Model 2	Model 3	Model 4	Model 5
<i>Neighborhood characteristics</i>					
Neighborhood high-status residents	1.808*** (.362)				1.827*** (.378)
Neighborhood residential stability		.318 (3.273)			3.935 (3.216)
Neighborhood economic deprivation			-.745* (.349)		-.301 (.365)
Neighborhood racial/ethnic diversity				-.468 (2.027)	-.029 (1.982)
<i>Family characteristics</i>					
Family socioeconomic status	10.044*** (.411)	10.843*** (.401)	10.712*** (.409)	10.840*** (.401)	10.029*** (.413)
Single-parent household	.519 (.727)	.716 (.725)	.760 (.719)	.716 (.724)	.567 (.726)
Stepparent household	-.621 (.831)	-.753 (.844)	-.733 (.838)	-.754 (.841)	-.586 (.833)
Number of siblings	-.680*** (.170)	-.694*** (.171)	-.689*** (.170)	-.694*** (.172)	-.676*** (.169)
Discusses school with parents	.933*** (.189)	.943*** (.191)	.941*** (.190)	.942*** (.191)	.934*** (.189)
Parental involvement in school	.767*** (.169)	.755*** (.170)	.758*** (.170)	.755*** (.170)	.762*** (.168)
<i>Student race</i>					
Black	-10.033*** (.964)	-10.025*** (.984)	-9.849*** (.986)	-9.953*** (1.018)	-10.012*** (1.011)
Hispanic	-6.151*** (.881)	-6.241*** (.878)	-6.058*** (.884)	-6.177*** (.931)	-6.046*** (.924)
Native American	-16.344*** (3.036)	-16.130*** (3.081)	-15.517*** (3.034)	-16.142*** (3.099)	-16.150*** (3.035)
Asian	2.213 (1.223)	2.583* (1.245)	2.548* (1.239)	2.629* (1.263)	2.188 (1.234)

As shown in these tables, when entered individually, four of the five mediating variables are significant predictors of time spent on homework in the expected directions, and all six mediating variables predict educational achievement as

TABLE 4: Regression Models Predicting Math/Reading Achievement with Neighborhood Characteristics and Selected Independent Variables Controlling for Clustering within Hierarchical Structures (Cont'd)

	Mathematics/Reading Achievement Test Scores				
	Model 1	Model 2	Model 3	Model 4	Model 5
<i>School controls</i>					
Private school	1.709 (.994)	1.736 (1.014)	2.065* (1.023)	1.779 (1.058)	1.721 (1.035)
Student/teacher ratio	.016* (.008)	.018* (.008)	.017* (.008)	.018* (.008)	.016* (.008)
Low teacher quality	-.211*** (.057)	-.218*** (.056)	-.217*** (.056)	-.218*** (.056)	-.211*** (.056)
Percentage on free lunch	-.017 (.016)	-.035* (.016)	-.017 (.018)	-.034* (.017)	-.014 (.018)
R ²	.284	.280	.280	.280	.284

Note: Unstandardized coefficients for high school students who persisted in the same neighborhood from 1988 to 1992. Standard errors are in parentheses. Other controls include student's sex, region of the country, and urban/suburban/rural trichotomy. Mean substitution of data.

* $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed tests)

expected. Although five of these six predictors of educational achievement remain significant in the full model (Table 6, model 8), only two of the five mediators (educational expectations and school atmosphere) remain significant when predicting time spent on homework. These results suggest that these mediators are, for the most part, independently related to educational achievement and that collective socialization and school processes are central to the prediction of time spent on homework. Overall, these results confirm theoretical expectations that youth are more likely to succeed in high school if they work harder on their schoolwork, have higher educational and occupational goals, associate with peers who are less likely to drop out, and attend a school with a positive atmosphere. It seems that educational theory correctly emphasizes the role of collective socialization, social control, occupational opportunities, and institutional processes as major determinants of educational success.

Although the mediating variables are clearly important predictors of educational success, it still remains to be seen whether they mediate a substantial portion of neighborhood effects on these two outcomes. To determine this, the variables are added independently in models 2-6 in Table 5 and models 2-7 in Table 6. Model 1 in both these tables sets the baseline effect of neighborhood characteristics on time spent on homework and educational achievement. The tables show that students who live in neighborhoods with a high prevalence of high-status residents spend

TABLE 5: Regression Models Predicting Hours Spent on Homework with Neighborhood High-Status Residents, Neighborhood Residential Stability, Mediating Variables, and Selected Independent Variables Controlling for Clustering within Hierarchical Structures

	Homework			
	Model 1	Model 2	Model 3	Model 4
<i>Neighborhood characteristics</i>				
Neighborhood high-status residents	.444*** (.082)	.406*** (.081)	.412*** (.082)	.443*** (.082)
Neighborhood residential stability	1.289* (.626)	1.208 (.621)	1.232 (.641)	1.271* (.628)
<i>Mediating variables</i>				
Educational expectations		.687*** (.050)		
Friends dropped out			-.584*** (.111)	
Intergenerational closure				.021 (.032)
Occupational expectations				
School atmosphere				
<i>Family characteristics</i>				
Family socioeconomic status	.639*** (.090)	.299*** (.091)	.604*** (.092)	.632*** (.092)
Single-parent household	-.106 (.150)	-.154 (.149)	-.096 (.153)	-.102 (.151)
Stepparent household	-.039 (.166)	-.040 (.164)	-.008 (.169)	-.034 (.166)
Number of siblings	.037 (.037)	.067 (.037)	.048 (.039)	.038 (.037)
Discusses school with parents	.402*** (.039)	.340*** (.041)	.386*** (.039)	.401*** (.039)
Parental involvement in school	.219*** (.033)	.154*** (.033)	.201*** (.034)	.216*** (.033)

TABLE 5: Regression Models Predicting Hours Spent on Homework with Neighborhood High-Status Residents, Neighborhood Residential Stability, Mediating Variables, and Selected Independent Variables Controlling for Clustering within Hierarchical Structures (Cont'd)

	Model 5	Homework Model 6	Model 7
<i>Neighborhood characteristics</i>			
Neighborhood high-status residents	.438*** (.088)	.456*** (.082)	.397*** (.086)
Neighborhood residential stability	1.225 (.703)	1.284* (.611)	1.269 (.704)
<i>Mediating variables</i>			
Educational expectations			.624*** (.061)
Friends dropped out			-.186 (.114)
Intergenerational closure			.025 (.034)
Occupational expectations	.269*** (.046)		.026 (.050)
School atmosphere		.109*** (.009)	.090*** (.009)
<i>Family characteristics</i>			
Family socioeconomic status	.638*** (.099)	.672*** (.089)	.391*** (.101)
Single-parent household	-.249 (.152)	-.092 (.144)	-.261 (.146)
Stepparent household	-.075 (.175)	-.020 (.163)	-.012 (.176)
Number of siblings	.038 (.037)	.034 (.036)	.060 (.038)
Discusses school with parents	.352*** (.043)	.294*** (.040)	.226*** (.044)
Parental involvement in school	.225*** (.036)	.171*** (.033)	.130*** (.036)

(continued on next page)

TABLE 5: Regression Models Predicting Hours Spent on Homework with Neighborhood High-Status Residents, Neighborhood Residential Stability, Mediating Variables, and Selected Independent Variables Controlling for Clustering within Hierarchical Structures (Cont'd)

	Homework			
	Model 1	Model 2	Model 3	Model 4
<i>Student race</i>				
Black	-.395* (.195)	-.535** (.191)	-.356 (.207)	-.379* (.192)
Hispanic	.121 (.218)	-.003 (.219)	.093 (.231)	.133 (.220)
Native American	-.985** (.325)	-1.038*** (.308)	-.791* (.390)	-.959** (.327)
Asian	1.135*** (.311)	.906** (.290)	1.151*** (.312)	1.154*** (.311)
<i>School controls</i>				
Private school	.951*** (.244)	.799*** (.239)	.970*** (.251)	.947*** (.243)
Student/teacher ratio	.003* (.001)	.003 (.001)	.003* (.001)	.003* (.001)
Low teacher quality	-.009 (.013)	-.006 (.012)	-.009 (.013)	-.009 (.013)
Percentage on free lunch	.003 (.003)	.002 (.003)	.002 (.003)	.003 (.003)
R ²	.129	.156	.134	.129

more time on homework ($b = .444, p < .001$) and perform better on achievement tests ($b = 1.808, p < .001$). Moreover, students who live in neighborhoods with higher levels of residential stability complete more homework ($b = 1.289, p < .05$). As mediating variables are added to these models, reductions in these effects would suggest that the mediating variables are, in fact, accounting for the neighborhood effects on time spent on homework and educational achievement. For example, when homework is added in model 2 of Table 6, the effect of neighborhood high-status residents is reduced about 30% (to $b = 1.297, p < .001$) in comparison to the baseline effect. When considering whether the mediating variables account for the effect of neighborhood characteristics on educational outcomes, note the changes in the neighborhood effects across rows 1 and 2 of Table 5 and row 1 of Table 6.

As expected, those mediating variables associated with collective socialization processes are the strongest mediators of this neighborhood effect on these

TABLE 5: Regression Models Predicting Hours Spent on Homework with Neighborhood High-Status Residents, Neighborhood Residential Stability, Mediating Variables, and Selected Independent Variables Controlling for Clustering within Hierarchical Structures (Cont'd)

	Model 5	Homework Model 6	Model 7
<i>Student race</i>			
Black	-.244 (.225)	-.541** (.194)	-.397 (.233)
Hispanic	.168 (.256)	-.005 (.213)	-.068 (.268)
Native American	-1.201*** (.336)	-1.069*** (.309)	-.821* (.353)
Asian	1.013*** (.317)	.912** (.309)	.737* (.305)
<i>School controls</i>			
Private school	1.094*** (.258)	.775*** (.238)	.845*** (.258)
Student/teacher ratio	.004* (.002)	.003* (.001)	.003 (.002)
Low teacher quality	-.002 (.014)	-.005 (.013)	.002 (.013)
Percentage on free lunch	.004 (.003)	.002 (.003)	.000 (.004)
R ²	.143	.150	.182

Note: Unstandardized coefficients for high school students who persisted in the same neighborhood from 1988 to 1992. Standard errors are in parentheses. Other controls include student's sex, region of the country, and urban/suburban/rural trichotomy. Mean substitution of data.

* $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed tests)

educational outcomes. Specifically, whereas little mediation is demonstrated in the prediction of time spent on homework, the greatest reductions are associated with students' educational expectations. Likewise, collective socialization processes prove to account most significantly for the effects of living in a neighborhood with many high-status residents. Specifically, the effect of high-status residents is reduced to 1.297 when the amount of homework is controlled (as noted above), and to 1.516 with the inclusion of educational expectations (model 3). Two other mediating variables also account for modest reductions in the effect of high-status residents. This effect is reduced to 1.706 when the number of friends who dropped out is held constant (model 4), and to 1.710 when occupational expectations are controlled (model 6). The remaining two characteristics — intergenerational

TABLE 6: Regression Models Predicting Math/Reading Achievement with Neighborhood High-Status Residents, Mediating Variables, and Selected Independent Variables

	Mathematics/Reading Achievement Test Scores			
	Model 1	Model 2	Model 3	Model 4
<i>Neighborhood characteristics</i>				
Neighborhood high-status residents	1.808*** (.362)	1.297*** (.354)	1.516*** (.349)	1.706*** (.362)
<i>Mediating variables</i>				
Homework		1.115*** (.065)		
Educational expectations			6.410*** (.230)	
Friends dropped out				-7.158*** (.542)
Intergenerational closure				
Occupational expectations				
School atmosphere				
<i>Family characteristics</i>				
Family socioeconomic status	10.045*** (.411)	9.295*** (.413)	6.852*** (.415)	9.463*** (.424)
Single-parent household	.519 (.727)	.828 (.733)	.199 (.684)	.901 (.723)
Stepparent household	-.621 (.831)	-.614 (.811)	-.765 (.796)	-.100 (.843)
Number of siblings	-.680*** (.170)	-.727*** (.168)	-.389* (.166)	-.577*** (.170)
Discusses school with parents	.933*** (.189)	.491** (.188)	.358 (.184)	.763*** (.186)
Parental involvement in school	.767*** (.169)	.541*** (.165)	.135 (.162)	.580*** (.166)

Note: Controlling for clustering within hierarchical structures, unstandardized coefficients for high school students who persisted in the same neighborhood from 1988 to 1992

TABLE 6: Regression Models Predicting Math/Reading Achievement with Neighborhood High-Status Residents, Mediating Variables, and Selected Independent Variables (Cont'd)

	Mathematics/Reading Achievement Test Scores			
	Model 5	Model 6	Model 7	Model 8
<i>Neighborhood characteristics</i>				
Neighborhood high-status residents	1.801*** (.360)	1.710*** (.362)	1.863*** (.365)	1.126** (.362)
<i>Mediating variables</i>				
Homework				.799*** (.057)
Educational expectations				5.000*** (.263)
Friends dropped out				-4.420*** (.549)
Intergenerational closure	.415** (.143)			.282 (.145)
Occupational expectations		3.329*** (.219)		1.251*** (.227)
School atmosphere			.471*** (.047)	.185*** (.048)
<i>Family characteristics</i>				
Family socioeconomic status	9.895*** (.419)	9.094*** (.426)	10.190*** (.408)	6.137*** (.428)
Single-parent household	.604 (.726)	.582 (.769)	.624 (.726)	.824 (.736)
Stepparent household	-.512 (.827)	-1.395 (.869)	-.566 (.829)	-.872 (.841)
Number of siblings	-.667*** (.169)	-.384* (.177)	-.690*** (.165)	-.172 (.168)
Discusses school with parents	.917*** (.189)	.674*** (.199)	.447* (.190)	-.227 (.194)
Parental involvement in school	.709*** (.172)	.555** (.179)	.562*** (.165)	-.198 (.170)

(Continued on next page)

Note: Controlling for clustering within hierarchical structures, unstandardized coefficients for high school students who persisted in the same neighborhood from 1988 to 1992.

TABLE 6: Regression Models Predicting Math/Reading Achievement with Neighborhood High-Status Residents, Mediating Variables, and Selected Independent Variables (Cont'd)

	Mathematics/Reading Achievement Test Scores			
	Model 1	Model 2	Model 3	Model 4
<i>Student race</i>				
Black	-10.033*** (.964)	-9.567*** (.952)	-11.531*** (.962)	-9.803*** (1.008)
Hispanic	-6.151*** (.881)	-5.901*** (.867)	-7.253*** (.815)	-5.693*** (.877)
Native American	-16.344*** (3.036)	-15.377*** (3.203)	-16.397*** (3.381)	-15.330*** (3.267)
Asian	2.213 (1.223)	.835 (1.140)	-.473 (1.115)	2.441* (1.200)
<i>School controls</i>				
Private school	1.709 (.994)	.345 (.974)	.358 (1.027)	1.828 (.995)
Student/teacher ratio	.016* (.008)	.011 (.008)	.008 (.007)	.015* (.008)
Low teacher quality	-.211*** (.057)	-.201*** (.055)	-.187*** (.056)	-.211*** (.057)
Percentage on free lunch	-.017 (.016)	-.022 (.017)	-.022 (.016)	-.005 (.016)
R ²	.284	.316	.368	.295

closure and school atmosphere — do not substantially mediate the effect of neighborhood high-status residents.

Again, although only a small amount of the neighborhood effects on time spent on homework are accounted for by these mediating variables (about 10%), much more mediation is demonstrated when predicting educational achievement. In the full model, about 40% of the effect of neighborhood high-status residents on educational achievement is explained by the six mediating variables.¹¹ An equal amount of mediation is accounted for when only those variables associated with collective socialization processes (the increased amount of time spent on homework and the higher educational expectations held by students in neighborhoods with higher prevalence of high-status residents) are controlled.¹² This suggests that collective socialization processes are the most important considerations when explaining why neighborhood context affects educational outcomes. Finally, the mediation of this neighborhood characteristic and other family and school effects, along with a significant increase in the amount of explained variance,¹³ shows that

TABLE 6: Regression Models Predicting Math/Reading Achievement with Neighborhood High-Status Residents, Mediating Variables, and Selected Independent Variables (Cont'd)

	Mathematics/Reading Achievement Test Scores			
	Model 5	Model 6	Model 7	Model 8
<i>Student race</i>				
Black	-9.728*** (.966)	-10.408*** (1.021)	-10.699*** (.965)	-10.738*** (1.046)
Hispanic	-5.904*** (.887)	-7.089*** (.903)	-6.579*** (.866)	-7.227*** (.882)
Native American	-15.844*** (2.994)	-18.328*** (3.218)	-16.609*** (3.059)	-14.355*** (3.836)
Asian	2.603* (1.231)	1.072 (1.209)	1.306 (1.203)	-1.242 (1.094)
<i>School controls</i>				
Private school	1.626 (1.001)	1.202 (1.085)	.940 (.999)	-1.108 (1.086)
Student/teacher ratio	.016* (.008)	.018* (.008)	.014 (.008)	.008 (.008)
Low teacher quality	-.216*** (.057)	-.191** (.065)	-.193*** (.055)	-.180** (.063)
Percentage on free lunch	-.016 (.016)	-.021 (.017)	-.022 (.016)	-.022 (.018)
R ²	.284	.312	.298	.394

Note: Controlling for clustering within hierarchical structures, unstandardized coefficients for high school students who persisted in the same neighborhood from 1988 to 1992. Standard errors are in parentheses. Other controls include student's sex, region of the country, and urban/suburban/rural trichotomy. Mean substitution of data.

* $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed tests)

the set of mediating variables are important in the promotion of these positive educational outcomes.

Discussion

The current research represents a step forward for both the urban and the educational literatures. Wilson's (1987, 1996) research on social disorganization and isolation and related literature concerning urban poverty (Fainstein 1986-87; Farley 1988; Hughes 1989; Jargowsky & Bane 1991; Massey & Denton 1993) have linked neighborhood disadvantages to a number of social problems, including

educational failure, increased juvenile delinquency and teen pregnancy rates, and diminished psychological well-being of youth. Although several studies have established connections between neighborhood context and these outcomes, few have empirically addressed the mediating process through which neighborhood context influences youth. That is, the urban literature has focused on the causes of concentrated poverty and established its association with social problems, but few studies analyze how neighborhood contextual characteristics influence individual outcomes. Instead, past research has implied the mediation of neighborhood effects without testing the processes thoroughly. For example, the positive effect of affluent neighbors has been understood to support collective socialization theory (Brooks-Gunn et al. 1993), and the negative effect of poor neighbors has been seen as consistent with social control theory or epidemic theory (Crane 1991; Patterson 1991). In both cases, however, the mediating processes have been left unexamined. Rather than simply finding that neighborhood high-status residents enhance educational performance and then claiming support of role-modeling processes, this project takes the next step and actually shows that the theoretical mediators linked to collective socialization theory (educational expectations and the amount of homework completed) are the ones that best mediate the relationship between neighborhood effects and educational outcomes. This represents the most detailed support of the collective socialization theory to date. Of course, some limitations merit attention. It is possible, for example, that other factors seemingly unrelated (or only loosely related) to collective socialization (e.g., cognitive skills, cultural capital and resources) might also explain variation in the amount of time spent on homework and educational expectations and be associated with neighborhood characteristics. Examining these possibilities remains for future research.

This research also moves the educational literature forward by explicitly making connections between structural factors and individual-level processes. Unfortunately, most previous research addressing disparities in educational performance tends to emphasize one or the other (for a notable exception, see Roscigno 1999). For example, some theories have focused on microlevel factors such as family socioeconomic status (Blau & Duncan 1967; Featherman & Hauser 1976) or biological differences across class and racial groups (Herrnstein & Murray 1994), to the exclusion of structural factors. Others make monolithic statements about social structural influences on students based on their class (Bowles & Gintis 1976) or race (Ogbu 1978), without close consideration of their individual circumstances. Without consideration of both structural and individualistic factors and their relationship to one another, our understanding of educational processes is incomplete. The current study contributes to the educational literature by making this micro-macro link and showing that certain neighborhood characteristics (particularly the presence of high-status residents) are influential predictors of educational outcomes.

Despite the ways the current research moves the urban and educational literatures forward, it is limited with respect to how well neighborhood characteristics and theoretical mediators are measured. Areas defined by ZIP codes are somewhat larger than what most people think of as a neighborhood.¹⁴ Census tracts are most likely preferable to ZIP codes, but they too are apt to correspond imperfectly to residents' self-defined neighborhoods. Subsequent studies are necessary to determine if the results change when using more proximate or qualitative measures of neighborhood context. The selection of students into neighborhoods is also a concern for virtually all neighborhood research. One possibility for future studies is to compare those students who improved their neighborhood conditions by moving to those who did not move, or to those who moved to more disadvantaged neighborhoods. Such comparisons will allow us to see if these students benefit in educational outcomes (e.g., Pribesh & Downey 1999).

The current study's operationalization of variables thought to mediate the relationship between neighborhood context and educational outcomes also does not correspond perfectly with the theoretical constructs. That these mediating variables do not account for all the neighborhood effects suggests that future research should involve additional or alternative measures of mediating processes. For example, with respect to collective socialization, these mediating processes should include more detailed indicators of neighbors' actual involvement in the students' lives (e.g., how often neighbors and youth interact, the impressions that students have about the adults in their community). Similarly, actual indicators of monitoring and sanctioning of problem behaviors, rather than simply the implied outcomes of these behaviors (i.e., whether friends of the student drop out), would provide more effective measures of the social control processes relevant to neighborhood context and likely would mediate more of the relationship.

The limitations faced by this and many other neighborhood research projects should not be seen as reasons for avoiding such studies. Instead, these issues should guide us toward an improved understanding of how neighborhoods affect youth. Wilson's (1987, 1996) social isolation/disorganization theory represents the leading view of the causes and consequences of concentrated poverty in U.S. cities, yet it has not been rigorously tested. The current study attempts to explicitly model this popular perspective. Only through such efforts can we be confident that social disorganization at the neighborhood level, as Wilson describes it, is responsible for the wide range of social problems (e.g., educational failure) attributed to it.

Notes

1. Gans (1996) discusses the downside of American culture's greater encouragement of high aspirations and expectations among the poor relative to other societies. He claims that poor Americans who do not reduce their aspirations are at higher risk for depression and other mental illnesses than those who do.

2. Clearly, role-modeling processes occur within homes as well as within neighborhoods. My emphasis on the influence of neighborhood-level role-modeling processes is not meant to downplay the importance of parental role modeling. Rather, I am simply arguing that youth consider neighborhood role models when making evaluations about their own life prospects, and therefore neighborhood context affects development of skills, attitudes, and norms over and above the effects of household influences.

3. The poor are also more likely than the nonpoor to have social networks that are restricted to their neighborhood and are less likely to take part in organizations outside their immediate environment (Albrandt 1984; Coulton, Pandey & Chow 1990).

4. In order to determine that the neighborhood indicators were indeed statistically distinct from each other, principal component analysis was used. The results are reported in the Appendix. Four neighborhood-level measures were derived from this analysis. Two of the measures (high-status residents and economic deprivation) are made up of pairs of items, whereas the other two (residential stability and racial/ethnic diversity) are measured with single indicators. Additionally, multicollinearity diagnostics verified that these neighborhood characteristics are not multicollinear when simultaneously used in regression models.

5. See Kasarda (1993) for a discussion of regional variation in ghetto poverty.

6. Because most data sets used to study neighborhood effects, including the one used here, have multiple respondents (students) in each locality (neighborhood), there is a problem of nonindependence of cases from the same locality. In this situation, ordinary least squares (OLS) and logistic regression techniques produce coefficients for all variables that are unbiased but standard errors that are biased. Typically, the standard errors for the contextual factors are underestimated. The standard errors for noncontextual variables are generally less affected by clustering and in no known direction. To correct for this problem, I calculated the standard errors using Huber-White sandwich robust variance estimates. STATA was used because it computes the adjusted standard errors for OLS and logistic regressions while weighting the data as appropriate (Stata Reference Manual 1998). These results are consistent with statistical theory on hierarchical models (Goldstein 1995). Hierarchical linear modeling was not used because there were a large number of neighborhoods (i.e., ZIP codes) in which too few students were living.

7. Parallel analyses predicting a wide range of outcomes likely to involve at-risk students (including school dropout status, teen parenthood, being arrested, being jailed, binge drinking, heavy marijuana use, and cocaine use) were also conducted. In all cases except one, the neighborhood characteristics as defined in this study were not significant predictors of these dependent variables. The one exception was that students living in racially diverse neighborhoods were more likely to drop out of high school. Perhaps youth at risk for such outcomes cannot or do not identify as closely with high-status adults. These results highlight that improved neighborhood conditions may not protect at-risk youth from a variety of social problems.

8. The bivariate correlation between neighborhood high-status residents and neighborhood residential stability is $-.221$, significant to $.001$.

9. Comparisons are not made with family structure or student race because these are measured with sets of dichotomous variables, resulting in uninterpretable standardized coefficients.

10. In this example, a "relatively disadvantaged neighborhood" is one in which 6% of the adult residents over 24 years of age are college graduates and 15% of employed persons are in professional or managerial occupations. On the other hand, an "advantaged neighborhood" is one where 47% of the residents are college graduates and 47% are in professional or managerial positions.

11. Note that these six variables also mediate about 40% of the effects of family socioeconomic status and private school attendance. This consistency suggests that these mediators are about as important for neighborhood effects as they are for family and school effects when it comes to predicting educational achievement.

12. Note that school atmosphere acts as a suppressor variable rather than a mediator in the case of the effect of high-status residents on educational achievement.

13. *F*-tests verify that the changes in R^2 from .129 to .182 (for homework) and from .284 to .394 (for test scores) are significant. For the prediction of time spent on homework, the *F* of 103.41 is greater than the critical *F* of 4.10 ($\alpha = .001$); and for the prediction of educational achievement, the *F* of 284.24 is greater than the critical *F* of 3.74 ($\alpha = .001$).

14. Sampson (1998) argues that the ecological stratification of communities and the resulting consequences are evident regardless of how neighborhoods are defined. Specifically, he states that "empirical results have not varied much with the operational unit of analysis. The ecological stratification of local communities . . . is a robust phenomenon that emerges at multiple levels of geography, whether local community areas, census tracts, or other 'neighborhood' units" (7).

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**APPENDIX: Principal Component Analysis of Neighborhood Characteristics,
Varimax Rotation Method with Kaiser Normalization**

	Distinct Neighborhood Characteristics			
	Neighborhood High-status Residents	Neighborhood Residential Stability	Neighborhood Economic Deprivation	Neighborhood Racial/Ethnic Diversity
Proportion of college graduates among persons older than 24	<i>.950</i>	-.111	-.253	-.015
Proportion of employed persons with professional or managerial occupations	<i>.962</i>	-.066	-.219	-.054
Proportion of householders who have lived in the same house for five or more years in youth's neighborhood of residence	-.114	<i>.973</i>	.128	-.128
Proportion of unemployed persons among those older than 16	-.208	.252	<i>.903</i>	-.007
Proportion of persons with incomes below the poverty level	-.296	-.050	<i>.865</i>	.267
One minus the sum of the squared proportions of each of the following racial/ethnic groups in youth's neighborhood: whites, blacks, Native Americans, Asians, and others	-.039	-.126	.142	<i>.978</i>
Eigenvalue	2.928	NA	1.323	NA
Bivariate correlation	.95	NA	.76	NA

Note: The italicized numbers signify items used to measure the four distinct neighborhood characteristics listed at the top of the columns.