This School’s Gone Downhill: Racial Change and Perceived School Quality among Whites

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Racial segregation in schools and neighborhoods in the United States is stark and persistent. The results of this research provide clues as to why it may be so enduring. We find that as predominantly white schools in the Philadelphia Metropolitan Area experience increases in black representation of up to seven percentage points during a four- to five-year period, white neighborhood residents are more likely to perceive that the quality of their schools has declined, despite the current conditions of the schools and in spite of changes in school characteristics. Our results are more consistent with racial threat theory than contact theory because they suggest that white residents may initially be threatened by racial change and judge declining school quality according to the racial change itself. As a consequence, white families may flee these integrating schools and neighborhoods, further contributing to school and neighborhood segregation.

Keywords: education; segregation; race/ethnicity; school quality; racial threat.

Segregation in public schools is starker and more persistent than that found in neighborhoods (Orfield and Yun 1999; Rickles et al. 2001), though neighborhood and school racial change often accompany each other. Because school feeder areas are comprised of neighborhoods, as neighborhoods integrate so do schools. However, Gary Orfield and Chungmei Lee (2006) point out that school racial profiles change more rapidly than do neighborhoods’ because those who have more recently moved into neighborhoods are often younger adults with children, while those residents least likely to move are those who are older who have finished raising children. At the same time that neighborhoods integrate, attendance at private schools may lead to more segregation in public schools than neighborhoods, as advantaged white children leave neighborhood schools for these more segregated spaces (Reardon and Yun 2002).

Researchers have long tried to assess how the racial composition of schools affects whites’ attendance patterns. Many find that as urban public schools integrate, whites leave these schools and their neighborhoods for private schools or for more racially homogeneous suburban schools (Bankston and Caldas 2000; Clark 1987; Clotfelter 1976; Coleman, Kelly, and Moore 1975; Farley, Richards, and Wurrold 1980; Giles, Cataldo, and Gatlin 1975; Hess and Leal 2001; Reardon and Yun 2001; Smock and Wilson 1991; Wrinkle, Stewart, and Polinard 1999). In the past few years, as the clamor for affordable alternatives to traditional public schooling has grown stronger, research has shown that the proportion of nonwhite students in public schools significantly impacts the likelihood of white enrollment in private, charter, and magnet schools, even when controlling for actual measures of school quality such as graduation rates, test scores, safety, and student-teacher ratios (Bankston and Caldas 2000; Fairlie 2002; Fairlie and Resch 2002; Hess...
and Leal 2001; Renzulli and Evans 2005; Saporito 2003; Saporito and Sohoni 2006; Wrinkle et al. 1999). However, there is some debate in the literature over whether or not white families are responding to school racial composition when they leave these schools. Even among those who lived in school districts that did not actively promote integration, whites moved rapidly to the more segregated suburbs as a result of other processes leading to residential segregation. The extent to which whites “flee” integrating schools themselves is debated (Clotfelter 2001; Coleman et al. 1975; Frey 1979).

As families, particularly in urban areas, have been exposed to more options for schooling their children than in the past decades, it is important to investigate how school racial composition may influence their decisions to leave particular schools and enroll in others. Families in urban areas may choose neighborhood public schools, private religious or nonreligious schools, magnet schools, charter schools, or nonneighborhood public schools in their districts. These choices may heighten awareness and consideration of school quality and, to the extent that race and school quality are related or perceived to be related, may exacerbate school segregation by race.

Despite increased attention to the relationship between school choice and school segregation, absent from research on school segregation is a consideration of neighborhood residents’ perceptions of their local school quality. The vast majority of literature on white flight from schools is based on school enrollment data and does not include indicators of residents’ actual attitudes toward schools experiencing racial change. While some research has looked at how racial change influences residents’ perceptions of neighborhood quality, like neighborhood safety and services (Ellen 2000; Quillian and Pager 2001), no research has linked racial change to perceptions of school quality. Similarly, research on school quality often asks parents to identify indicators of quality (Lee, Croninger, and Smith 1996; Schneider, Teske, and Marschall 2000), but it does not link racial composition of schools to how parents may perceive quality in particular schools. This research applies the literature on residential racial change and perceptions of neighborhood quality to schools in order to better understand the reasons for school racial segregation. It is important to understand how racial change is related to perceptions of declining school quality because those who are able may decide to leave or not enroll in those schools they perceive to be of declining quality. The availability of these choices means that residents may take resources with them that may eventually lead to decreased quality and increased segregation among these schools.

In this research, we explore perceptions of changing school quality in the past four to five years not only among those whites whose children attend the neighborhood schools, but also for white local residents without such intimate knowledge of these schools. We do so for two reasons. First, even if white neighborhood residents do not have children attending their local schools, they are likely to be concerned about the quality of schools. For those who have very young or school-aged children, changes in the perceived quality of the neighborhood schools may influence a family’s decision to send children to Catholic, other private, charter, magnet, or other nonneighborhood schools (Wrinkle et al. 1999).

For white residents without children, the influence of schools on property values may be important (Black 1999; Kain and Quigley 1970). Residents are aware that the quality of their local schools is tied to the value of their homes; therefore, they may pay attention to indicators of change in this quality. When white families leave neighborhoods, there are fewer minority families able to afford the housing to take their place. Housing values decrease, and tax bases suffer (Orfield 2002).

Another reason to explore changes in school quality among those who do not have children in the schools is that these perceptions may form the basis of a school’s reputation, and that reputation may influence whether or not families with children move to the area. A school’s reputation may be founded on “good” information gained from intimate knowledge of the school’s culture and practices that families who have children attending them may know and provide. It may be gained from test scores and other statistics published in local newspapers or other media. It may be acquired by researching particular neighborhood schools on the Internet. Or, it could be that changes in a school’s demographics indicate to white neighborhood residents that school
quality is changing. Neighborhood residents may have access to several of these sources of information and may form their perceptions based on them. Because a school’s reputation has consequences for where families choose to move (Holme 2002) and who chooses to attend them (Wrinkle et al. 1999), exploring the foundation of these perceptions is important.

**Applying Research on the Effects of Residential Racial Change on Whites’ Attitudes and Perceptions to Schools**

In order to gain insight into why changing school racial composition may influence white neighborhood residents’ perceptions of school quality, we look to the literature on how neighborhood racial composition affects whites’ racial attitudes and beliefs. Researchers have used the term “neighborhood” to refer to many different geographic spaces, including a resident’s perceptions of his or her neighborhood (which may be a block or a few blocks) to a census tract including many blocks to a zip code area to even a county. They have explored how the racial composition of these diverse areas affects white prejudice (Pettigrew 1959; Quillian 1996), attitudes toward racial policies (Fossett and Kiecolt 1989; Giles and Evans 1986), voting behavior (Wright 1977), feelings of trust (Marschall and Stolle 2004), and perceived risk of crime (Chiricos, McEntire and Gertz 2001; Quillian and Pager 2001), often with contradictory results. These studies propose several explanations for how and why increasing minority composition in an area affects perceptions of minorities by whites. The first of these, contact theory, suggests that increasing proportions of minorities should increase trust among whites and minorities by allowing whites and minorities to interact with one another and therefore decrease prejudice, under optimal conditions. The second, racial threat or racial competition theory, proposes that the increased presence of a minority group in a neighborhood or school threatens the resources and status of the majority group. Hostility toward the minority group increases, and those institutions with increasing minority presence are devalued (Blumer 1958; Bobo 1999).

In its simplest form, racial contact theory suggests that increasing contact between people from different racial groups should increase tolerance and decrease prejudice (Allport 1958; Myrdal 1944; Robinson and Preston 1976; Stein, Post, and Rinden 2000; Wagner et al. 2006). Indeed, while researchers have found that increasing contacts between minorities and whites can decrease hostility, the process is not straightforward (Sigelman and Welch 1993). Intergroup contact is most likely to decrease hostility between groups when this contact occurs under “optimal conditions.” Groups should have equal status, cooperate toward common goals, and be institutionally supported (Allport 1958; Pettigrew 1998). Decreasing prejudice and animosity from whites toward racial minorities may not occur immediately, but happen over time. As contact becomes more common and as whites adjust to it, racial animosity may decrease (Bratt 2002; Semyonov and Glikman 2009). Thomas F. Pettigrew (1998) suggests that more intimate contacts, particularly friendships, are formed under these conditions of optimal contact. “Friendship potential” is an important precursor to reduced prejudice and animosity between groups (Bratt 2002; Semyonov and Glikman 2009). Some critics, though, like Mary Jackman and Marie Crane (1986), suggest that individuals can disassociate their friends from the groups to which they belong. Proponents of contact theory have found that socioeconomic status of group members matters. The more contact between whites and blacks who are of higher socioeconomic status than themselves, the more favorable whites’ attitudes and beliefs of them are (Jackman and Crane 1986). In addition, majority group members are more likely to be affected by intergroup contact than are minority group members (Ford 1973; Tropp and Pettigrew 2005).

While contact theory may explain decreased white hostility toward nonwhites in some situations, Jackman and Crane (1986) suggest that contact theory as a general approach may not be the best way to characterize whites’ attitudes and beliefs. Whites’ racial beliefs and attitudes, and, consequently, their responses to a growing minority presence, are a reflection of whites’ and minority members’ group positions (Bobo 1999). Whites, as the dominant group, view the increasing
presence of minorities as a threat to their status and their ability to garner and control resources. The perception that racial attitudes and beliefs are formed based on struggle between groups is consistent with what has been called racial threat theory. Variants of this theory have also been termed group position, racial competition, power or conflict theory (Behrens, Uggen, and Manza 2003; Blalock 1967; Chiricos et al. 2001; Glaser 1994; Pettigrew 1959; Quillian 1996; Taylor 1998).

Particularly when groups interact in spaces where resources are important and limited, like communities, neighborhoods, or schools, competition between racial groups ensues and hostility between racial and ethnic groups grows (Oliver and Mendelberg 2000). A growing minority presence in neighborhoods or schools may lead to more power and resources for these groups (Giles and Evans 1986). This growing presence threatens whites’ perceptions that they hold power. Further, schools and neighborhoods are spaces that convey status to their occupants. Neighborhood residents carefully choose their homes, and families deliberately choose their schools to best reflect their social position (Holme 2002). White families’ may feel that their status is devalued as minorities enter their neighborhoods and schools (Charles 2003; Holme 2002). Because the social distance between whites and blacks has historically been substantial in the United States, blacks are often perceived by whites as the least favorable neighbors and schoolmates (Bobo and Zubrinsky 1996; Charles 2000; Farley et al. 1994). Empirical evidence typically shows that growing minority populations increase rather than decrease white hostility toward blacks and other minority groups (e.g., Behrens et al. 2003; Blalock 1967; Dixon and Rosenbaum 2004; Eitle, D’Alessio, and Stolzenberg 2002; Fossett and Kiecolt 1989; Giles and Evans 1986; Glaser 1994; Jacobs, Carmichael, and Kent 2005; Parker, Stults, and Rice 2005; Pettigrew 1959; Quillian 1996; Rocha and Espino 2009; Taylor 1998; Tolbert and Grummel 2003).

These explanations for how growing minority representation influences whites’ perceptions, beliefs, and attitudes about blacks and other minorities imply different sets of results for our analyses of how increasing proportions of minorities in local public schools may influence white neighborhood residents’ perceptions of the quality of those schools. Under contact theory we would expect racial change in schools not to influence perceptions of the quality of schools under several conditions. First, if schools already include a mix of students, we expect less effect of changing school racial composition on perceptions of quality. When students are not in predominantly white schools, local white residents may have already formed relationships and had positive experiences with black and other minority students from those schools. Second, if the change in racial composition does not indicate a changing social status; that is, if blacks or other minorities moving into a school are of similar social status, then neighbors should not perceive declining quality in schools. Similarly, if the racial change is not accompanied by changes in test performance, we might expect no relationship between changing racial composition and perceptions of school quality. Since we do not have direct measures of contact, we can only surmise that these conditions will lead to relationships between whites and blacks, and whites and other minorities.

Racial threat suggests that a growing representation of minorities increases racial animosity, both in the short and long term. As the proportion of blacks and other racial minorities increases, white neighbors may feel threatened by competition over school monies and programs that their property taxes fund. Neighbors may become more hostile to these schools, may be less willing to fund them with their taxes, and their prejudices and racial antipathy may increase. Whites who may wish to maintain social distance from blacks or other minorities to protect their own status and power may believe that school quality is diminishing as a way to justify their desires to minimize integration or to find alternative schools for their own children.

Segregation and Schooling in the Philadelphia Metropolitan Area

The Philadelphia metropolitan area, including the cities of Philadelphia and Camden, the surrounding Pennsylvania counties of Bucks, Chester, Delaware, and Montgomery, and the New Jersey counties of Burlington, Camden, Gloucester, and Salem, is similar in profile to many
Northeastern metropolitan areas. The cities of Philadelphia and Camden are geographically close and considered to be generally part of the same metropolitan area. Philadelphia and Camden differ in many ways, but are similar in that they provide a range of schooling choices from magnet to charter to private schooling to urban residents. Including both cities provides a large enough sample to consider both urban and suburban respondents. The Philadelphia metropolitan area has a fairly high proportion of blacks, at 20 percent, compared to other metropolitan regions, but low proportions of Asians and Hispanics, at around 5 percent and 10 percent. Black-white segregation is the most common pattern of segregation in the Philadelphia area (Metropolitan Philadelphia Indicators Project 2005).

While the Philadelphia area is similar to other Northeastern metropolitan areas in its residential segregation patterns, it is distinct in its patterns of schooling. Philadelphia has one of the highest rates of private schooling among urban areas. Nearly 20 percent of school-aged children attend private schools, compared with 16 percent in Baltimore, 14 percent in Chicago, and 13 percent in Boston (Adams et al. 2008). There are over 100 charter schools in Pennsylvania, most in the Philadelphia region. Like other large cities, the city of Philadelphia has magnet school options, and currently students can choose any school in the district of Philadelphia, rather than remain in their neighborhood feeder school. Because of these many options for school choice in the region, Philadelphia area residents may be more likely to perceive alternatives to public schooling for their own children than are residents in other metropolitan areas, which may make them less sensitive to changes in their neighborhood feeder schools. On the other hand, if parents view schooling as a choice among several different options, they may be more attentive to the quality of their local schools. Indeed, school quality might even be an important consideration when buying a home. Recent research on school choices in the Philadelphia metropolitan region shows that more than a third of residents with families report choosing their homes in order to attend particular schools (Goyette 2008). It is important to note that this research uses data not only from Philadelphia and Camden, with large percentages of blacks living in those cities, but also from the nine counties that include and surround those cities. These nine counties include many wealthy and middle-income suburbs. Schools in many of these areas tend to be predominantly white.

Data

The main source of data for this study is the Philadelphia Area Survey (PAS). The PAS is a random telephone survey of heads of households in the Philadelphia Metropolitan region administered in 2003 and 2004, with 2,000 respondents interviewed in total. The survey has a 36 percent response rate. While this response rate is low, it is similar to many recent phone surveys (Curtin, Presser, and Singer 2005). Low response rates do not necessarily lead to bias in the results, particularly on variables measuring social or political attitudes (Curtin, Presser, and Singer 2000; Groves 2006; Keeter et al. 2000; Keeter et al. 2006). Another potential source of bias is that the survey did not include those who use only cellular phones. Current research suggests that this source of bias is not statistically significant, but may become more so as more people abandon their landlines (Keeter 2007). Indeed, an analysis of the respondents, which compares the demographic characteristics of our respondents to census data, indicates that they do not differ statistically significantly in race, median income, and educational attainment from the population of the region. Appendix A also shows that the unweighted sample closely matches census data in terms of homeownership and household income. Households with children under 18 and those in the city of Philadelphia are slightly overrepresented, which is corrected with normalized sample weights. Applying sample weights decreased the overall sample size to 1,901. We then excluded respondents who did not answer the school quality question (155) and those with missing address information (184). This resulted in a sample size of 1,563. Because we are interested in whites’ perceptions of racial change, we further limited the sample to only white respondents, resulting in an overall weighted N of 1,150.
Analytical Strategy

Contact theory suggests that, especially when there is little change in school status, white neighbors should not perceive declining school quality with racial change. And, in schools that already have a noticeable minority presence, relationships between whites students and neighbors and minority students may have already formed. Further racial change should not influence white neighbors’ perceptions of the quality of these schools. On the other hand, according to racial threat theory, white neighbors will react negatively to growing proportions of minorities regardless of students’ social status and whether or not there are already substantial numbers of minorities in their local schools. To assess which of these positions best fit our data, we first describe the distributions of the dependent, independent, and control variables in our sample. We then show how racial change is correlated with other changes in schools using a correlation matrix. Finally, we present results from logistic regression models of perceptions of school quality that compare white respondents who report that their local school quality has decreased over the past five years to those who do not.

Our analysis tries to tease out some of the complexity of contact theory. Contact theory suggests that whites should be able to form positive relationships with minorities when those minorities are of equal or higher status. Although imperfect, we attempt to capture school status with three measures—school poverty, test scores, and rates of violence. Our models include the influence of changing school racial composition on perceptions of quality, net of not only the respondent’s individual characteristics, but also the current school status and changes in this status of the schools nearest him or her. If changing racial composition influences perceptions of declining quality net of measures of current and changing school status then the racial threat perspective is supported. If not, it may be that under conditions where whites and minorities of similar status form relationships—when they are of similar social status—white neighbors are not more likely to see school quality decline, which supports contact theory.

We also consider the racial composition of the school in 1999–2000, about four to five years before respondents were asked about their perceptions of changing school quality. We consider whether the average percentage of whites in the closest elementary, middle, and high school was above the median percentage for our sample or below it. It may be that when schools with a large proportion of whites experience growth in the minority population it is more noticeable than when schools with proportionately fewer whites do, and in these schools and associated neighborhoods, relationships between whites and racial minorities may not have yet developed. It may also be that predominantly white schools have greater resources and status, and thus neighbors surrounding these schools may feel more threatened than those around schools that already have a substantial proportion of nonwhites because they perceive they have more status and resources to lose. Finally, it could also be that those whites who choose to live around schools with larger nonwhite populations may be in neighborhoods with larger nonwhite populations. These whites may have expressed a preference through their choice of neighborhoods for, or at least be more tolerant of, living around nonwhites, and thus may feel less threatened by them. For this reason, we stratify our analysis based on whether the percentage of whites in elementary, middle, and high schools at the beginning of the period is above or below the median for our original sample. The median percentage of whites in schools for all the schools in our original sample averaged over the closest elementary, middle, and high school is 78 percent. For this research, we consider those schools above 78 percent white to be predominantly white schools and those below, not predominantly white.1

1. We experimented with several different ways of accounting for the racial makeup of schools. Initially, we included variables for the current percentage of black students and the current percentage of other minority students. However, the current percentage of black students was so highly correlated with the school distress index (alpha > .80) that this coefficient was not statistically significant in multivariate models. We then decided to measure the racial composition of the school at the beginning of the four- to five-year interval in order to assess whether or not there might be different effects of changing racial
Dependent Variable

Our dependent variable is derived from the survey question “Within the past five years, do you think the quality of public schools in your community has increased, decreased, or stayed the same?” The categories of this variable are collapsed into a dichotomous variable where values of 1 represent respondents who perceived that the quality of their local public schools had decreased and 0 represents those who said otherwise. Table 1 shows about 80 percent of the residents in our sample report that school quality has not decreased, while a fifth of the sample perceives that school quality has decreased over the past five years.

Independent Variables

Changing School Racial Composition. Our main independent variable is school racial change. All of the respondents to the survey were asked to provide the address of the house in which they live. Using geographic information system (GIS) software, the precise geographic location of each respondent was matched with the closest elementary, middle, and high schools to residents. Using the U.S. Department of Education’s Common Core of Data, we were able to link the proportion of a school that was black and other minority in the 1999–2000 school year, and then in 2003–2004, to determine the extent to which a school had experienced racial change over the past four to five years. We averaged the percentages across the closest elementary, middle, and high school for each respondent. Change in schools from 1999–2000 to 2003–2004 measures change during a period that is roughly from four to five years, depending on when the school characteristics were measured.

Most research on individuals’ reactions to school racial change must rely on district-level data (Bankston and Caldas 2000; Renzulli and Evans 2005). Unlike these studies, our data represent a closer match between individuals and the elementary, middle, and high schools in their neighborhoods. We assume that the elementary, middle, and high school that are geographically closest to a respondent’s residence are most likely what that respondent considers to be his or her local schools. While this match may not be perfect for every respondent, it is likely more informative than using district-level data. Ideally, we would use feeder or catchment areas for elementary, middle, and high schools in the Philadelphia metropolitan region, but they are not readily available outside of the city of Philadelphia. Although the use of feeder areas may be an improvement over our measures and, if data allow, should be empirically tested, it is not clear that residents without school-aged children necessarily know their assigned schools. However, they are likely to be able to identify the closest schools to their homes.

composition on schools that were considered “predominantly white” versus those that may be more “integrated.” We ran our multivariate models with different cut-offs for “predominantly white.” When we use whether or not the school is at or above 80 percent white, the results are the same as the measure we present in our tables (78 percent white), as we might expect. When we use 60 percent white as our cutoff, the p-value for the first spline goes above .05, but the second spline stays significant (0 to 7 percent). The distress factor also is smaller, but still significant. Finally, when we use 50 percent white, the results are the same as when we use 60 percent white as the cutoff, though here the third spline also becomes significant. For those below the cutoff, school distress becomes significant in the expected direction. We settled on whether or not a school was at or above or below the median percentage white in 1999–2000, which is 78 percent, as the most meaningful way to capture differences in a school’s racial composition.

2. Results from analyses using ANOVA show that the variation in racial change within districts is greater than that between districts. Further, when we replicated our analyses substituting district-level measures for measures averaged across the closest elementary, middle, and high schools, our measures explained more variation. Therefore, we are confident that our measure is an improvement over district-level measures. These analyses are available on request.

3. “Feeder areas,” also called “catchment areas” or “catchment zones,” are the geographic boundaries that are associated with attendance at specific schools. In most of the United States (and much of the Philadelphia metropolitan region from which our sample is drawn), students are assigned to public schools based on their addresses. These boundaries may change, usually based on school board decisions. For the city of Philadelphia only, we were able to match feeder areas to neighborhood residents. When we compare the results using feeder areas to the results using the closest elementary, middle, and high schools, we see that although we are able to explain slightly more variation in results using feeder areas, the direction and
There are two main reasons that we separate change in the percentage black from change in the percentage of other minorities for use as our main independent variables. The first is that researchers have found that white respondents react to black neighbors more strongly than other racial groups in research on respondents’ residential preferences, although these reactions vary regionally (Bobo and Zubrinsky 1996; Charles 2000; Emerson, Yancey, and Chai 2001; Krysan 2002). Second, in the Philadelphia metropolitan region, black-white segregation has been the most common pattern. The proportions of Hispanics and Asians residing in the metropolitan region remain below other comparably large urban areas, and residential segregation of Asians or Hispanics is less stark (Metropolitan Philadelphia Indicators Project 2005). In previous analyses, we separated changes in the percentage Asian and the percentage Hispanic in schools, but results from the models were no different than from the models in which they are combined.

The average changes in the percentage of blacks and other minorities in the closest elementary, middle, and high schools are measured continuously, and we create splines to best describe the

<table>
<thead>
<tr>
<th>Table 1 • Univariate Descriptives</th>
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<tr>
<td><strong>Dependent variable</strong></td>
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<td>Perceptions of school quality in last five years . . .</td>
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<tr>
<td>Decrease</td>
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<td>Increased or stayed the same</td>
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<td><strong>Individual characteristics</strong></td>
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<tr>
<td>Age</td>
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<td>Male*</td>
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<td>Children under 18</td>
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<td>BA or more</td>
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<td>Income $40K or more</td>
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<td><strong>Local school characteristics</strong></td>
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<td>School conditions for 1999–2000 school year</td>
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<td>Above median percent white (78%)</td>
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<td>School conditions for 2003–2004 school year</td>
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<td>Percent receiving free/reduced lunch</td>
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<td>School distress index</td>
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<td>Changes between 1999–2000 and 2003–2004 school year</td>
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<td>Change in percent black</td>
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*aIn the unweighted sample, we have a greater proportion of female respondents than males. However, data were weighted to reflect the heads of household in the Philadelphia region according to the results of the 2000 U.S. Census. Once the weighting was performed, males represented a little over half of the household heads in the full sample.

There are two main reasons that we separate change in the percentage black from change in the percentage of other minorities for use as our main independent variables. The first is that researchers have found that white respondents react to black neighbors more strongly than other racial groups in research on respondents’ residential preferences, although these reactions vary regionally (Bobo and Zubrinsky 1996; Charles 2000; Emerson, Yancey, and Chai 2001; Krysan 2002). Second, in the Philadelphia metropolitan region, black-white segregation has been the most common pattern. The proportions of Hispanics and Asians residing in the metropolitan region remain below other comparably large urban areas, and residential segregation of Asians or Hispanics is less stark (Metropolitan Philadelphia Indicators Project 2005). In previous analyses, we separated changes in the percentage Asian and the percentage Hispanic in schools, but results from the models were no different than from the models in which they are combined.

The average changes in the percentage of blacks and other minorities in the closest elementary, middle, and high schools are measured continuously, and we create splines to best describe the

significance of the coefficients are generally the same across models. This leads us to believe that if it were possible to match respondents with their school feeder areas, our results might be stronger, but our conclusions would likely be the same. Results from these analyses are available from the authors.
The functional form of the relationship between changing school racial composition and perceptions of change in school quality. A spline function is used to represent a sudden change in slope or “turning point” in a regression line. For example, if a relationship between two variables is best represented by a negative regression line, but at some point is better characterized by a positive relationship, a spline may be used to describe this (Marsh and Cormier 2002). A “knot” indicates the point at which the regression line changes slope and divides the slope into segments. While dummy variables are constructed to indicate these “knots,” the coefficients reported are slope coefficients for each of the line segments (Marsh and Cormier 2002). Therefore, there is no excluded category to which to compare coefficients. There are many cases in which splines have been used in sociological analyses (e.g., Carliner 1982; Moody 2001; Xie et al. 2003).

In our analysis, we divide our regression slope into into three segments: (1) schools that experienced a decline in black or other minority representation; (2) schools that experienced moderate changes in the percentage black or other minority, which we define as a zero to seven percentage point increase in black or other minority representation; and (3) schools that experienced a rapid, or greater than seven point, increase in the percentage of students who are black or other minorities. We include two sets of splines: one for change in black representation in schools and one for change in other minority representation. The splines were “known” that is they were created based on graphs that show nonlinear bivariate relationships between percentage point changes in proportion black or other minority, and the likelihood of reporting that school quality has decreased. These graphs are available upon request from the authors. Table 1 reports that across all the schools in our sample black representation increased on average by about two percentage points, as did other minority representation.

**Changing School Characteristics.** In addition to changes in the percentage of a school that is black or other minority, we include other changes in schools over time. We selected school characteristics based on their visibility and accessibility to parents, and the availability of the data for our use. Changes in these other indicators of quality could indicate changing school status to parents. Because parents cite academic performance and safety as two of the most important aspects of quality schools (Henig 1995; Lee et al. 1996; Schneider et al. 2000), and because statistics on school safety and test scores are often published in newspapers and on websites for parents to access, we include changes in the standardized scores of reading tests and changes in the number of violent incidents reported per 1,000 students from the academic years 1999–2000 to 2003–2004 from the Pennsylvania and New Jersey Departments of Education, averaged over the closest elementary, middle, and high school to the respondent. Test scores were standardized using z-scores from the distribution of raw test scores in the region. Because Pennsylvania and New Jersey schools use different tests, z-scores were calculated separately for each state. We then calculated the difference in standardized test scores, as one indicator of changing school quality relative to other schools in the areas. We prefer standardized scores not only because Pennsylvania and New Jersey use different tests, but also because New Jersey changed tests in this period.

Parents may also judge schools according to their socioeconomic profiles. Because of this, we include a change in the average percentage of students in the closest elementary, middle, and high schools who receive free or reduced price lunch from the school years 1999–2000 through 2003–2004. This is an imperfect measure of the poverty experienced by students in a given school because families who are poor may not enroll in the free and reduced price lunch program (Gleason, 1995).

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4. We also considered whether the racial change had occurred more gradually over the four- to five-year period or whether it had happened rapidly, in the past year. To do so, we included a variable representing change in the proportion in schools that is black or other minority in the previous year (2002–2003). However, this did not improve our models nor were the coefficients statistically significant. It did not change our findings for the four- to five-year racial change coefficients. We chose to report only the racial change that had occurred in the past four to five years because that is most consistent with the time frame about which the survey question asked, “Within the past five years, do you think the quality of public schools in your community has increased, decreased, or stayed the same?”
Hulsey, and Burghardt 2004). However, participation in the free and reduced price lunch program is widely used as a proxy for school poverty in other research.

**Current School Characteristics.** It is also possible that neighborhood residents judge a school’s future and past not according to whether the school’s profile has changed or not, but rather by its current academic quality, safety, and poverty level of the students. Researchers have found that neighborhood residents often anticipate a decline in property values and services based on a neighborhood’s current racial composition (Crowder 2000; Ellen 2000). It seems possible, then, that an observer could assess the downward trajectory of a school based on the current characteristics of that school, rather than on changes in those characteristics over the past four to five years.

We initially included three measures of current conditions: the percentage of students receiving free or reduced price lunch, reading test z-scores, and the number of violent incidents per 1,000 students in 2003–2004, all averaged over the closest elementary, middle, and high school. However, these variables are correlated at alpha = .80 or higher. The high correlation of these variables confirms what others studying urban schools have found: that disadvantage tends to be concentrated in high poverty schools (Saporito and Sohoni 2006). Because of the high correlations between these variables and because a factor analysis indicated that all of the variables loaded on a single factor, we created an index, which we call the “school distress index.” All of the index components are standardized and weighted equally. The higher the score of the index, the more likely the school is to be plagued by problems of poverty, safety, and, perhaps consequently, academic quality.

**Control Variables**

We use questions from the demographic sections of the survey to capture gender, education, family income, the presence of children in the household, whether the respondent owns or rents his or her home, and how long the resident has lived in his or her home. We include the respondent’s age, and whether or not the household includes a child under the age of 18, coded “0” if no and “1” if yes. Education is measured as whether or not the respondent has a bachelor’s degree or more (with the reference category coded “0” as some college or less), and income is measured dichotomously as “0” under $40,000 or “1” $40,000 or more.5 Homeowners (coded “1”) are compared to renters (the reference category coded “0”). Tenure in one’s home is measured with a variable comparing those who have been in their home for five or more years (coded “1”) with those who have not (coded “0”).6 Finally, we also include a neighborhood-level variable that describes the median home value of the census tract in which the respondent is located. Table 1 further describes characteristics of our sample with a table of means, their standard deviations, and their maximum and minimum values.

Table 2 presents correlations between all of the variables in our multivariate models, including individual-level characteristics, school racial changes, the measurable indicators of changing school quality, and the school distress index, which was designed to capture current conditions of the schools. These correlations show that increasing percentages of black students are significantly correlated with high current school distress, decreasing reading scores, an increase in the percentage qualifying for free or reduced price lunch, and an increase in incidences of violence. Increasing proportions of other minorities are also significantly associated with greater school distress, increasing school poverty, and decreasing reading scores over four to five years. However, an increase in other minority representation is not significantly associated with increasing school

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5. Income was measured categorically, not continuously, in the survey, so we were not able to use a continuous measure of income in analyses.

6. Although the survey question asked about changes in schools over the past five years, about a third of the respondents reported living in their current homes for less than five years. We have included them in our analyses because we are interested in neighborhood residents’ assessments of the trajectory of their local schools, even among newer residents, and we include a control variable for length of residence. Results of multivariate models from which they were excluded are consistent with what we report and are available from the authors upon request.
Table 2 • Correlation Matrix of Independent Variables\(^a\)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>School quality decreased</td>
<td>1</td>
<td>−.219***</td>
<td>.140***</td>
<td>.055</td>
<td>.254***</td>
<td>−.036</td>
<td>.039</td>
<td>.090**</td>
<td>.028</td>
<td>−.057</td>
<td>−.050</td>
<td>−.039</td>
<td>.014</td>
<td>−.001</td>
<td>−.007</td>
</tr>
<tr>
<td>2.</td>
<td>Above median percent white</td>
<td>1</td>
<td>−.394***</td>
<td>−.419***</td>
<td>−.728***</td>
<td>−.059***</td>
<td>−.098***</td>
<td>−.201***</td>
<td>−.067***</td>
<td>.009</td>
<td>.117***</td>
<td>.077***</td>
<td>−.091***</td>
<td>−.065***</td>
<td>−.006</td>
<td>.354***</td>
</tr>
<tr>
<td>3.</td>
<td>Black change</td>
<td>1</td>
<td>.016</td>
<td>.344***</td>
<td>−.179***</td>
<td>.206***</td>
<td>.156***</td>
<td>.001</td>
<td>−.027</td>
<td>−.042</td>
<td>−.109***</td>
<td>−.109***</td>
<td>−.078**</td>
<td>−.002</td>
<td>.334***</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Other minority change</td>
<td>1</td>
<td>.255***</td>
<td>−.097***</td>
<td>−.085**</td>
<td>.057</td>
<td>.077***</td>
<td>.012</td>
<td>−.034</td>
<td>−.077***</td>
<td>−.093***</td>
<td>.030</td>
<td>.037</td>
<td>−.153***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>School distress factor</td>
<td>1</td>
<td>.000</td>
<td>.204***</td>
<td>.367***</td>
<td>.024</td>
<td>−.013</td>
<td>−.122***</td>
<td>−.152***</td>
<td>.115***</td>
<td>.061***</td>
<td>.007</td>
<td>.493***</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6.</td>
<td>Change in reading scores</td>
<td>1</td>
<td>−.041</td>
<td>−.034</td>
<td>−.010</td>
<td>−.041</td>
<td>.002</td>
<td>.067</td>
<td>−.036</td>
<td>−.048</td>
<td>.002</td>
<td>−.804***</td>
<td></td>
<td></td>
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<tr>
<td>7.</td>
<td>Change in percent poor</td>
<td>1</td>
<td>.123***</td>
<td>.092***</td>
<td>.034</td>
<td>−.076</td>
<td>−.067</td>
<td>−.105***</td>
<td>.048</td>
<td>.022</td>
<td>−.236</td>
<td></td>
<td></td>
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<tr>
<td>8.</td>
<td>Change in violence</td>
<td>1</td>
<td>−.032</td>
<td>−.020</td>
<td>−.038</td>
<td>−.003</td>
<td>−.008</td>
<td>.026</td>
<td>.024</td>
<td>−.013</td>
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<tr>
<td>9.</td>
<td>Age</td>
<td>1</td>
<td>−.106***</td>
<td>−.348***</td>
<td>−.186***</td>
<td>−.281***</td>
<td>.206***</td>
<td>.331***</td>
<td>−.036</td>
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<tr>
<td>10.</td>
<td>Male</td>
<td>1</td>
<td>−.019</td>
<td>.081***</td>
<td>.158***</td>
<td>−.053</td>
<td>−.050</td>
<td>.030</td>
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<tr>
<td>11.</td>
<td>Kids under 18</td>
<td>1</td>
<td>.104***</td>
<td>.254***</td>
<td>.118***</td>
<td>.055</td>
<td>.002</td>
<td></td>
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<tr>
<td>12.</td>
<td>BA plus</td>
<td>1</td>
<td>.240***</td>
<td>.028</td>
<td>.044</td>
<td>.296***</td>
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<tr>
<td>13.</td>
<td>Income over $40K</td>
<td>1</td>
<td>.168***</td>
<td>−.034</td>
<td>−.146***</td>
<td></td>
<td></td>
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<tr>
<td>14.</td>
<td>Homeowner</td>
<td>1</td>
<td>.432***</td>
<td>.009</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>15.</td>
<td>Lived 5+ years</td>
<td>1</td>
<td>−.062***</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>16.</td>
<td>Median house value (in thousands)</td>
<td>1</td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

\(^{a}\)Collinearity diagnostics for the independent variables show no VIF above 3.0, thus multicollinearity should not affect the results of the analyses. Only two variables had VIF scores above 2.0 (above median percent white = 2.7 and school distress factor = 2.9). All other variables had VIFs below 2.0.

\(\ast p < .05 \quad \ast \ast p < .01 \quad \ast \ast \ast p < .001 \) (two-tailed tests)
violence over time. These results show that increasing representations of blacks, and in some cases, other minorities, are associated with lower current school quality and observable changes in school quality over the past four to five years.

Table 2 shows that white residents may be reacting to changes in school racial composition and safety, as well as current characteristics of schools, when making their judgments of local school quality. Schools that are below the median percent white, that have increasing proportions of black students, with current high distress as measured by our index, and that have experienced an increase in reports of violent incidents over the past four to five years are judged by white residents to have declined in quality. Those whites who live in neighborhoods with higher median home values are less likely to report decreasing school quality.

The correlation matrix in Table 2 also shows that there are many other statistically significant correlations between and among the individual-level characteristics, current school distress, and changes in schools over time. The indicators included in the school distress index (current percentage in poverty, standardized reading tests scores, and rates of violent incidents per 1,000 students) were correlated with an alpha > .80 and therefore combined into the school distress index. There is also a high, negative correlation (-.804) between change in reading scores and median house value. It appears that the higher the median house value, the more standardized reading test scores declined over the four- to five-year period. During the period from 1999–2003, the No Child Left Behind Act (2001) drew attention to disparities in test scores and prompted lower performing schools to try to improve. Since our measure of change in test scores is standardized, this negative correlation may not necessarily be because schools in more advantaged neighborhoods are performing worse, but rather this observed relationship may be a result of lower-performing schools in less advantaged neighborhoods catching up to those schools with high test scores. This high correlation shows that there is multicollinearity between these variables, which could result in less efficient estimates of their coefficients. However, when we omitted median house value from the multivariate models, our overall findings for changes in standardized reading test scores did not change. Changes in standardized reading test scores were not significantly related to perceptions of changing school quality whether or not median house value was included in the multivariate models. No other relationships suggest that multicollinearity among the independent variables (correlations higher than .60) will lead to inefficient multivariate results. The VIF scores for the rest of these variables were all below 3.0.

**Multivariate Results**

Overall, our results show that a growing proportion of blacks influences white neighborhood residents’ perceptions that school quality is declining over and above the current status of schools and changes in that status over the past four to five years, but only for schools that were predominantly white at the beginning of the four- to five-year period, in 1999–2000. The first three columns of Table 3 include those respondents who lived near predominantly white schools at the beginning of the four- to five-year interval, while the next three refer to white residents living near schools below the median percentage white in 1999–2000. The coefficients report whether an independent variable influenced the probability that a white person perceived decreases in quality of their community, public school.

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7. We also considered models with the full sample, combining respondents living near schools both above and below the median percentage white. In these models, we included interaction terms between the splines for racial change (both black and other minority) and whether the schools were initially above or below the median percentage white. When we did so, we found a statistically significant interaction between the spline for percentage black change between 0 to 7 percent and schools above the median percentage white, but few other statistically significant results. This is consistent with what we found in separate models. We chose to present separate models for ease of interpretation. It is important to keep in mind that there are fewer schools that are less than 78 percent white in our sample than there are schools at or above 78 percent white.
Table 3 shows that current school quality shapes white residents’ perceptions that local school quality has declined in the past five years for those living near predominantly white schools. The current conditions of schools are significantly related to white neighborhood residents’ perceptions of changing school quality for this group. Those near schools with greater proportions in poverty, with high incidences of violence, and lower test scores (indicating high distress on the school distress index) are more likely to say school quality is decreasing than are those who live among less troubled schools. This was also found to be significant before adding the racial change variables. These results are available from the authors.

However, current school conditions are not the only factors shaping white residents’ perceptions. Table 3 also shows the coefficients for the splines, separately for change in black representation and change in other minority representation. These coefficients are slopes that show how increasing black or other minority representation (within each of the splines) influence the
probability of white neighborhood residents saying that school quality decreased over the past
five years. The spline coefficients show that white residents near schools that saw the proportion
of blacks increase up to seven percentage points are significantly more likely to report that school
quality declined as black representation increased. This is even after controlling for changes in
the status of the schools, like changes in poverty, test scores, and rates of violent incidents.
Changes in these variables are not significantly related to perceptions of declining quality, net the
other variables included in the model. Change in black representation above seven percentage
points, rare for this group of schools, is not significantly related to perceptions of decreasing
school quality. The few predominantly white schools experiencing this type of rapid racial
change may have experienced aggressive efforts to integrate schools through deliberate policies,
and, thus, they may be more acceptable to white neighborhood residents.

However, these findings do not extend to residents living near schools where the black pop-
ulation decreased. In contrast to our findings for schools that are experiencing increasing black rep-
resentation, in schools where black populations are decreasing, larger decreases are actually
associated with a greater likelihood of saying that the schools have declined. In fact, among those
who saw declines in black representation (represented by the spline for change of −8.42 percent to
0 percent), there is a statistically significant negative slope. For the spline describing a decrease in
black percentage of 8.42 to 0 percent or no change, the coefficient for each logit unit of positive
percentage point increase is −4.26. That means that residents near schools experiencing, for
example, a −6 percent change in percent black are less likely to say the schools had declined than
residents near schools experiencing a −7 percent change; in fact the odds ratio of .653 indicates they
would be 65 percent less likely to think the schools declined. The smaller the decrease (the less neg-
ative the change) in the percentage of black students, then, the less likely neighborhood residents
are to say that school quality has declined in the past five years. The larger the decrease (the more
negative the change), the more likely residents are to say that school quality has decreased for the
neighborhood residents that are represented by this spline. This can be contrasted to the results for
the next spline, for change in black representation of 0 to 7 percent. Here the coefficient is a positive
.642 and the odds ratios are above 1 (at 1.901). For each one point change in the percentage of
black students, neighborhood residents are almost two times as likely to say that school quality has
declined. These patterns are shown in the graph of predicted probabilities in Figure 1.

It seems surprising that those schools that experience a large decrease in the percentage of
blacks in the school are also more likely to be judged by white neighbors as decreasing in quality,
as compared to those that see little change. There are two mechanisms that can lead to a reduction
in the proportion of black students in schools. The first is that these schools are experiencing in-
creasing proportions of other minorities, from whom whites also want to distance themselves.
These minorities may be replacing middle and working class black students. In our models, we
control for changes in other minority representation, but we do not have information on the sta-
tus of the black students who are leaving the schools and the other minority students who are en-
tering. This is not available from either state’s departments of education or the Common Core of
Data from the National Center for Education Statistics. Therefore, we cannot say whether a com-
bination of race and social status explains this result.

If a reduction in the proportion of a school that is black does not result from a growing other
minority presence, then it is because white student representation grows. White student represen-
tation may grow because more white students than black students enter schools over time (as a
result of urban neighborhood gentrification, for instance), or because more black than white
students decide to leave these schools at this point in time. Because the negative slope observed
here is among predominantly white schools, we suggest it is unlikely that these schools are in
recently gentrified neighborhoods. Further, we might expect white neighbors living near schools
that see increasing white attendance not to judge school quality as declining. This leaves the
explanation that black students are leaving these schools in greater proportions than whites from
1999 through 2004. White students with resources may have already left these schools, and black
students with resources may be following. Again, we do not know the socioeconomic status of the
white and black students who are entering or exiting schools. Or, it could be that black students are leaving these schools at disproportionately higher rates because of the racial climate of these schools. Schools with poor racial relations may be judged to be poor in quality by neighborhood residents. Unfortunately, our data do not allow us to assess which possibility best explains this result.

Although our main focus is on the relationship between change in school racial composition and perceptions of change in school quality, we note that none of the individual-level control variables demonstrate a significant relationship with a perceived decrease in school quality. The neighborhood-level characteristic, median home value, is significantly associated with reporting declining school quality, however. Those whites who live in neighborhoods with higher median home values are more likely to report that school quality had declined, when all other variables are controlled. This coefficient was also significant before adding racial change to the models. Whites in these neighborhoods may be particularly sensitive to changes in school quality, as they seek to protect their high home values.8

The second set of columns in this table compares those who reported decreasing school quality with those who said school quality increased or remained the same for whites who lived near schools with less than 78 percent whites four to five years ago. Here we see that any change in black or other minority representation has no significant influence on reporting that school quality

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8. We did not account for clustering in our models because our data are drawn from simple random samples. Very few residents share the same average school characteristics like standardized test scores and rates of violent incidents.
has declined. Neither do any of the other individual, neighborhood, or school characteristics. If schools are not predominantly white at the start of the interval, further increase in black representation seems not to influence white residents’ perceptions. It is possible that white neighborhood residents have formed relationships with black and other minority students in these schools, and because of this, are not threatened by their increasing presence, as contact theory might suggest. However, we cannot rule out other explanations. It could also be that these schools are already judged to be of low quality, so increasing black or other minority presence makes little difference to white neighborhood residents’ perceptions. The correlation matrix in Table 2 shows that schools that are not predominantly white already suffer from higher school distress, and are already judged to be declining in quality. Perhaps racial and other changes do little to further worsen white neighborhood residents’ perceptions of these schools. It could also be that those who live in neighborhoods near schools with fewer than 78 percent whites are living in more integrated neighborhoods in general. These white residents may have chosen these neighborhoods because they desire to live or are more tolerant of living near minorities. They may hold fewer stereotypes of blacks and other minorities in the first place.

These patterns are shown clearly in Figure 1. Figure 1 presents the predicted probability of white neighbors saying the school quality had declined by the change in percentage black in the local schools and according to whether or not the school was above or below the median percentage white four to five years ago. The solid line represents schools that were predominantly white in 1999–2000. Here the decreasing likelihood of saying school quality decreased as schools lose fewer blacks is evident in the negative slope of the line from −10 to a 0 change in percentage points black. As the change in percentage blacks increases from 0 to 7 percentage points, there is sharp increase in white neighbors reporting that school quality had declined. Above seven percentage points, the effect of racial change on the likelihood of reporting declining quality declines dramatically. The dashed line represents those schools below 78 percent white in 1999–2000. There appears to be little influence of racial change on the probability of reporting declining school quality, as the probability of reporting declining quality remains fairly steady at around 20 to 25 percent for these schools.

**Conclusion**

Segregation in schools in the United States is a persistent problem and indeed has been increasing over the past decade (Orfield and Lee 2006; Reardon, Yun, and Eitle 2000). The results of this research provide clues as to why school, and perhaps also neighborhood, segregation may be so persistent. We find that as predominantly white schools experience moderate changes in black representation of up to seven percentage points during a four- to five-year period, white neighborhood residents are more likely to perceive that the quality of their schools has declined, despite the current conditions of the schools and in spite of changes in school poverty, standardized test scores, and school safety in the past five years. While racial change may be an indicator of related, observable changes in schools, our results imply that initially white residents may judge declining school quality according to the racial change itself, independent of several other observable indicators of

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9. We considered two other subsamples of interest. First, we ran these models for only those who had children in their households. We lose more than half of our respondents when we exclude those without children in their homes. Because this substantially reduced our sample size, although the patterns were the same, none of the coefficients of the splines representing racial change were statistically significant. Next, we only considered data from the closest elementary school. Initially, we had averaged data over the closest elementary, middle, and high school, in part, to capture as much information as possible. About a quarter of our respondents are missing data from their closest elementary schools. Again, when we lose these respondents, the patterns of our coefficients remain the same, but the racial change spline coefficients lose significance. These results are available from the authors upon request.
changing quality. From our results, though, it is difficult to specify why a school’s changing racial composition may indicate declining quality to white neighborhood residents.

These results are consistent with racial threat. White residents, feeling threatened by blacks, may suggest that school quality in integrating schools is diminishing as a way to justify maintaining social distance from them. Or, even though it is not necessarily reflected in the actual changes in poverty, safety, or test scores of integrating schools, it could be that white residents foresee a process whereby schools decline as black students enter. White residents may base their judgments on their observations of schools that already have high percentages of black students, and, as this and other research shows, these schools are disproportionately poorer, have higher rates of violence, and lower test scores than do schools with smaller proportions of black students.10

However, residents do not associate declining school quality with increased proportions of blacks among those schools that are below the median percentage white. This is consistent with contact theory, though there may also be other explanations for this finding. White neighborhood residents and their children may have formed relationships with black students and feel comfortable around them. Their perceptions of black students may be changed by their relationships with them. However, these schools are more likely to be schools already plagued by problems of low quality: low standardized test scores, high poverty, and high rates of violent incidents compared to other schools. White residents’ opinions of these schools may already be low, and further racial change may matter little. Or, it could be that white neighborhood residents living in neighborhoods with schools that have relatively higher proportions of blacks are more tolerant of racial diversity and thus are not threatened by racial change. The relationship between racial change and reports of declining school quality is different still for changing representation of other minorities. There appears to be little significant relationship between changing representation of other minorities and reports of changing school quality once other variables are taken into account.

It is possible that for those predominantly white schools that experience moderate increases in the proportion of students who are black, we are unable to capture the aspects of schools that are associated with declining school quality with our measures. Ideally, we would have liked to include data on other school characteristics, like class size and library, extracurricular, and other resources, as well as teacher characteristics, like certification, tenure, and mobility. However, this information was not readily available for many of the schools in our sample. These and other important variables may be omitted, thus models are misspecified, and with better predictors, we may be able to capture why racial change influences perceptions of the quality of these schools (Harris 1999; Quillian and Pager 2001).11 While we are aware of this limitation, we believe that the measures we choose to include—standardized test scores, school safety, and school poverty—are indeed some of the most important and visible indicators of school quality and status to neighborhood residents. At best, we conservatively suggest that increasing black representation in

10. The focus of our research is on how racial change affects whites’ perceptions of school quality. However, in previous analyses we included both white and nonwhite respondents in our sample. We included interactions between the race of the respondent and the splines representing the average percentage changes in black students at neighborhood schools to see if reactions to racial change differed according to the race of the respondent. The coefficients do not achieve significance and the model fit does not improve with the addition of this interaction term. While this suggests that nonwhites and whites similarly judge schools that experience moderate increases in black students to be decreasing in quality, our sample includes only 307 nonwhite respondents compared to over 1,000 white respondents. It could be that the sample size of nonwhite respondents is too small to detect an interaction effect in multivariate analysis, so this finding remains tentative and should be explored using larger samples of nonwhites.

11. Indeed, the fit of our models suggests that we have much to learn about how neighborhood residents judge schools. Few variables that we include in our models are statistically significant predictors of perceptions of changing school quality. Further research should capture characteristics of schools and residents that may influence perceptions of the quality of local schools, perhaps using such variables as student-teacher ratios, school facilities, types of curricula, or other characteristics that were not available to us.
predominantly white schools affects perceptions of declining school quality above and beyond current measures of school poverty, school violence, and relative standardized test scores, and changes in these characteristics for these schools over a four- to five-year period.

Another limitation of our research is that the sample is drawn from the Philadelphia metropolitan region. Other metropolitan areas are likely to differ in the distribution of population between cities and suburbs, in their current racial compositions and histories, and in the local contexts of their schooling options. Philadelphia has an unusually high rate of private school attendance (at 20 percent) compared to other metropolitan areas, suggesting many residents opt out of the public school system. This may affect attention to racial changes in schools and assessments of school quality in ways not shared by other metropolitan areas. Additional studies concerned with the causes of and remedies for school segregation should explore whether racial change similarly influences perceptions of school quality in other local contexts and nationally.

It is also unclear what effect, if any, increased publicity of schools’ standardized test scores, as a result of the No Child Left Behind (NCLB) Act, will have on how residents’ assess the quality of their local schools. The NCLB was introduced in 2001, which was during the period that we measure changes in test scores. Data from respondents were collected in 2003–2004, two to three years after NCLB was instituted. It could be that with growing public awareness of NCLB and its emphasis on test reporting, white neighborhood residents will be more likely use test scores as a means to assess school quality and less likely to rely on the changing racial composition of the school to make this judgment. Future research should investigate this possibility (Howell 2004).

The social processes underlying perceptions of school quality are important because white flight, not only from schools, but also from neighborhoods, may increase as white residents worry about declining school quality. Attitudes toward schools may not necessarily translate to behaviors that result in flight from neighborhoods (Lee, Oropesa, and Kanan 1994), and school quality appears to provide only limited motivation for people to move from their neighborhoods compared to other factors in general (Herting and Guest 1985; Lee and Guest 1983). However, school quality may be a more salient factor for those in neighborhoods that are experiencing initial, small to moderate, racial change. If whites disproportionately flee neighborhoods because of dissatisfaction with public schools that have small, but growing concentrations of blacks, racial segregation in neighborhoods may be exacerbated. And, since neighborhood residential segregation is one of the contributors (along with private schooling and other school choice options) to school racial segregation, school segregation is exacerbated through this process as well.

Though the purpose of this article is neither to suggest remedies for school and residential segregation nor determine whether or not school choice programs exacerbate racial segregation, our results suggest that because moderate changes in black representation appear to be related to whites’ perceptions of the trajectory of school quality, increasing school choice without regard for school racial composition may only increase school segregation. However, the current system whereby many families choose schools through their residential neighborhoods may also contribute to school segregation (Goyette 2008). While some white families may seek schools with diverse racial compositions, others may seek to avoid those schools with increasing proportions of blacks, seeking less diverse alternatives in private, charter, magnet, or other nonneighborhood schools, or in neighborhood schools in whiter neighborhoods. To the extent that family preferences for schools, perceptions of quality, and, consequently, school and residential choices are related to race, as they are shown to be here in the Philadelphia area, school integration through the market-style mechanisms of real estate markets and many school choice programs may be difficult to achieve. Researchers and policy makers should understand the ways that racial change is perceived in diverse regions, cities, and neighborhoods as they increase the possibilities for choice within those contexts. In some cases, diversity may be marketed as a benefit of choice for families, while in others desegregation programs may be the most successful ways to actively promote racial integration in schools.
Appendix A • Comparison of Sample Characteristics to the 2000 U.S. Census

<table>
<thead>
<tr>
<th></th>
<th>Unweighted Sample</th>
<th>Weighted Sample</th>
<th>Census</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household income &lt; $40K</td>
<td>39.6</td>
<td>32.1</td>
<td>42.3</td>
</tr>
<tr>
<td>Home owned</td>
<td>73.5</td>
<td>73.4</td>
<td>69.9</td>
</tr>
<tr>
<td>Children under 18 present</td>
<td>46.7</td>
<td>43.0</td>
<td>33.0</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>37.5</td>
<td>33.2</td>
<td>30.8</td>
</tr>
</tbody>
</table>

*aCensus income is in 1999 dollars, while sample is from 2003–2004. Because income is not asked continuously, we were not able to convert 2003–2004 dollars into 1999 dollars.

*bSample includes the presence of any children under 18 in the household, while census is limited to the presence of “own” children.

References


