

Private Choices, Public Consequences: Magnet School Choice and Segregation by Race and Poverty

SALVATORE SAPORITO, *College of William and Mary*

Little is known about the influence of school choice programs on race and economic segregation in public schools. Studies of housing segregation suggest that small differences in the preferences of particular race or socio-economic groups have the potential to produce large-scale patterns of segregation. In this study, I raise three questions regarding the link between individual choice and educational segregation: first, are the school choices of higher status families driven by a desire to avoid schools populated by students they consider to be of lower race or class status? Second, can other school features, such as safety, appearance, and educational quality, explain apparent race- or class-based choices? Third, can families' choices of schools be linked directly with segregation patterns independent of school district policies that may interfere with (or galvanize) the ability of people to exercise their choices? To answer these questions, I analyze magnet school application data from a large city to explore the choices of families for schools that vary in racial and economic composition. Findings show that white families avoid schools with higher percentages of non-white students. The tendency of white families to avoid schools with higher percentages of non-whites cannot be accounted for by other school characteristics such as test scores, safety, or poverty rates. I also find that wealthier families avoid schools with higher poverty rates. The choices of white and wealthier students lead to increased racial and economic segregation in the neighborhood schools that these students leave. Moreover, the link between choice and segregation cannot be explained by school district policies. Findings suggest that laissez faire school choice policies, which allow the unfettered movement of children in and out of schools, may further deteriorate the educational conditions for disadvantaged students left behind in local public schools.

One of the most controversial issues educational researchers investigate is whether *school choice* options—including private, charter, and magnet schools—impact race and class segregation among students (Goldhaber 1999; Levin 1998; Levin 1999). Scholars advocating school choice policies consistently argue that increasing the educational options of families—particularly poor, inner city families—will create greater educational equity (Peterson 1998), as well as race and class integration across schools (Brandl 1998; Chubb and Moe 1997; Coleman 1992; Coleman, Hoffer, and Kilgore 1982; Coleman, Schiller, and Schneider 1993; Coons and Sugarman 1978; Finn 1990; Greene 1998; Greene, Howell, and Peterson 1998; Hoxby 1998; Wolf, Howell, and Peterson 2000). These researchers reason that choice policies will allow disadvantaged students to leave schools serving the most impoverished neighborhoods (Finn 1990). They also presume that the majority of students, including white and wealthier families, will select schools based on their academic quality (Coleman 1992), and not the race or class composition

The author gratefully acknowledges the Spencer Foundation for their support in the form of the Spencer Doctoral Dissertation Completion Fellowship. Funding from a College of William and Mary Summer Research Grant also aided in the completion of this project. The following people contributed many editorial comments to this paper: William Yancey, Annette Lareau, Deirdre Royster, Kim Goyette, David Elesh, Vincent Louis, Brian Lawton, Jennifer Bickham-Mendez, Michael Lewis, Satoshi Ito, Thomas Linneman, Gul Ozyegin, and Timmons Roberts. I also wish to thank the anonymous reviewers for their comments. The author bears complete responsibility for all omissions and errors. Direct correspondence to: Salvatore Saporito, Department of Sociology, 232 Morton Hall, College of William and Mary, P.O. Box 8795, Williamsburg, VA 23187-8795. E-mail: sjsapo@wm.edu.

SOCIAL PROBLEMS, Vol. 50, No. 2, pages 181–203. ISSN: 0037-7791; online ISSN: 1533-8533

© 2003 by Society for the Study of Social Problems, Inc. All rights reserved.

Send requests for permission to reprint to: Rights and Permissions, University of California Press, Journals Division, 2000 Center St., Ste. 303, Berkeley, CA 94704-1223.

of their student bodies (Hess and Leal 2001; Merrifield 2001). They believe that this behavior—and, thereby, this system—will reduce segregation.

Detractors of school choice make the opposite argument. They contend that allowing greater educational mobility will exacerbate segregation. These scholars theorize that white and wealthier students will take steps to maintain their social status by distancing themselves from groups they perceive to be of lower standing (Taeuber and James 1982; Wells and Crain 1992). Studies using school-level data indicate that this may be the case (Henig 1996; Lankford, Lee, and Wyckhoff 1995; Lankford and Wyckhoff 1999; Meyer and Glazerman 1997; Saporito and Lareau 1998; Smith and Meier 1995; Willms 1996; Witte 2000; Wrinkle, Stewart, and Polinard 1999; Yancey and Saporito 1995a, 1995b). In this view, broadening the educational options of students will merely add another layer of stratification to an educational system already divided by race and class (Astin 1992).

To date, no study links the choices of individual families with race and class segregation across schools inside a single school district (Lee, Croninger, and Smith 1994). In this study, I use a unique data set to address this absence in the research literature. The data I analyze describe the *actual* school choices of *all* public school students within Philadelphia, Pennsylvania, the fifth largest city in the United States. I follow a cohort of eighth grade students who leave their neighborhood schools to attend magnet schools.¹ This approach enables me to observe how the school choices of families contribute to the racial and economic segregation of public schools in the city. This study moves the existing literature in a new direction by more directly observing the link between personal choices and educational segregation.

I have four goals: (1) to deepen our understanding of the link between individual choices and race and economic segregation in the school choice context; (2) to explore whether the choice patterns of individuals are based upon the desire of advantaged groups to avoid members of perceived lower-status race and class groups; (3) to investigate whether patterns that appear to result from race- and class-based choices actually reflect the effort of families to seek safe, high-quality schools; and (4) to examine the link between choice and segregation while accounting for school district policies that prevent some families from realizing their choices.

Review of the Literature: Segregation and Choice

Studies examining the causes of social segregation have increasingly focused upon the role individual preferences play in sustaining or exacerbating the separation of race and class groups. This line of reasoning stems from Thomas Schelling's (1971) hypothesis that slight differences in race- or class-based preferences for particular areas among individuals belonging to different groups can lead to distinctive patterns in the spatial separation of these groups. From this perspective, private choices have public consequences. In the case of segregation, a number of isolated individuals can make a series of private choices for houses, schools, social clubs, and churches that satisfy their personal preferences. These individual choices have the cumulative consequence of changing existing patterns of segregation. Individuals making such choices are not joined in a collective effort to sustain segregation. Nor do they necessarily desire social segregation. At least some social segregation may be independent of individual motivations or collective efforts to maintain race or class boundaries across social space.

1. Magnet schools policies allow public school students to leave the school serving their neighborhood to attend "magnet schools" that offer unique curriculums (e.g., engineering and sciences, language arts, or horticultural sciences). Thirty-four percent of the nation's school districts have magnet school programs, making it one of the most widely used forms of school choice in the country (U.S. Department of Education 1997). Many of these school districts use magnet schools programs (often funded by the U.S. Department of Education) to foster racial desegregation (Blank, Levine, and Steel 1996; Rossel 1990; Yu and Taylor 1997).

Studies of racial preferences provide a critical foundation for exploring whether individual choices play a role in segregation. Some of the most provocative findings come from The Detroit Area Study survey project that explores residential choice. This project employed the Farley-Schuman show-card method to measure preferences of African Americans and whites for neighborhoods that varied in their black-to-white ratios (Farley 1992; Farley and Schuman 1976; Farley et al. 1994). These studies showed a strong relationship between the willingness of whites to live in a neighborhood and the proportion of African Americans who occupied near-by houses.² Over 70 percent of whites (in both 1976 and 1992) would be *willing* to live in a neighborhood in which 1 out of 15 neighbors are African American; less than a third would be willing to live in a neighborhood in which half of the households are owned by African Americans. In contrast to white preferences, much higher percentages of African American respondents are *willing* to live in neighborhoods where between 20 to 100 percent of the houses are occupied by African Americans (Farley et al. 1994:763). These initial studies make it clear that African Americans and whites have different preferences and that whites, as a group, are particularly sensitive to neighborhood racial composition.

Recent studies, having replicated and extended the Detroit Area study findings, show that white respondents are more likely than other ethnic or racial groups (including Asians and Hispanics) to oppose living in a neighborhood in which half of their neighbors are from a single “out-group.” White respondents are particularly averse to living with African Americans (Bobo and Zubrinsky 1996; Timberlake 2000). These same studies also replicate findings for African Americans, indicating that the vast majority of African Americans state they are willing to live in a variety of neighborhoods—ranging from areas that have no white families to those in which 80 percent of the families are white. Moreover, substantial percentages of African Americans (between 30 and 50 percent) are willing to live in an all white neighborhood. In summary, most African Americans are “generally comfortable with, and willing to live in, any neighborhood except one that is all white” (Timberlake 2000:440).

In a study in which various ethnic groups designed their “ideal neighborhood,” all groups expressed a preference for some degree of racial integration (Charles-Zubrinsky 2000). Still, 19 percent of whites excluded any African American neighbors, as did 32 percent of Latinos and 40 percent of Asians. This study also showed that African Americans were the most likely to prefer integrated neighborhoods *and less than one percent of African Americans* would exclude African American neighbors. These findings indicate that neighborhood preferences vary across ethnic and racial groups, that these preferences may be race-based, and that individual choice might be linked with spatial patterns in segregation (Clark 1991, 1992).

Although the results of attitudinal surveys are compelling, show-card methods do not allow researchers to make definitive statements regarding the link between racial attitudes and the choices of individuals making real decisions. It is a long-standing proposition in social science research that expressed preferences do not always predict the behavior of an individual (e.g., Bain 1928; LaPiere 1938). Thus, people may or may not express preferences for neighborhoods or schools composed of varying mixes of race and economic groups, yet, the types of settings that they actually select is a different matter.

Given the methodological limitations of existing research, several questions remain unresolved. Among these questions is whether institutional factors or individual choices are responsible for existing segregation. Many studies of residential segregation show that *institutional racism* hinders the ability of individuals to leave or enter a social setting of their choice; yet, individual choices are assumed, but rarely demonstrated, to be a component of segregation. The institutional forces that shape segregation include mortgage redlining, lending

2. This method allowed black and white respondents to state their preference for a series of hypothetical neighborhoods (depicted on show-cards) that varied in their racial composition. Each card consisted of 15 houses with different proportions of white and African American householders.

discrimination, racial steering, racial covenants, block-busting, and restrictive zoning (Cloud and Galster 1993; Gans 1967; Jackson 1980, 1987; Massey and Denton 1993; Meyer 2000; Myrdal 1964; Yinger 1995). But the choices of individuals are rarely linked to the settings in which they occur. It is difficult to disentangle the morass of institutional factors that shape segregation from the segregation that results from choices of individuals. In this article, I attempt to extricate the influence of individual choice from the influence of institutional factors.

The choices made by people for residential housing are channeled through a number of institutions, including banks, zoning boards, neighborhood associations, housing developments, and real-estate agencies. In the context of some educational choice programs, there are fewer institutional forces that disrupt the link between family choices and school segregation than in housing. The primary organizational factors at work are the design of the school choice program, and the ability of schools to select from the pool of student applicants. The design of a given school choice program may encourage the participation of a particular type of student (e.g., some voucher programs target poorer students) or students from specific schools (e.g., those with low average test scores). Other school choice policies are far less restrictive (e.g., any student is permitted to participate). In many choice programs, the ability of schools to select students based upon academic performance or misbehavior is at work; some schools may be over-subscribed; still other programs may randomly select from the applicant pool. Nevertheless, fewer organizational forces are at work in school choice settings than there are institutional forces at play in shaping residential mobility. Given this, I argue that data describing the actual choices of families within school choice programs present an opportunity to observe how much individual preferences factor in segregation independent of the institutional forces that channel the flow of children across social space.

The Structure of Preferences

At least three questions arise when examining attitudinal research on preferences: (1) How are the choices of different race and economic groups structured? (2) Do higher status groups avoid places populated by lower status groups? (3) Can stated preferences for places that happen to be occupied by different racial groups actually reflect non-racial preferences for safe, clean, high-quality neighborhoods?

Much of the literature on racial preferences suggests that dominant racial groups (i.e., whites) are more likely than other groups to avoid those they perceive to be of lower social standing (Blumer 1958; Bobo 1999; Bonilla-Silva 1996). This perspective suggests that individual preferences can be described by patterns of *out-group avoidance*. People belonging to higher status groups avoid places occupied by persons whom they perceive to be of lower status. The term “out-group” does not merely signify a group that is different from one’s own group, but also indicates a sense of group position. Individuals who identify themselves as belonging to a higher status group attempt to maintain their superior social position by avoiding places occupied by groups of lower race or class status. For example, Douglas Massey and Nancy Denton (1993) suggest racial segregation is largely the result of white avoidance of areas populated by non-whites.

The out-group hypothesis has little to say about choice patterns among members of lower status groups (i.e., people of color). I suggest that the out-group hypothesis does *not* anticipate that minority groups will move away from or gravitate toward areas based upon their racial composition. This is not to say that non-white families do not worry about school racial composition when making choices. It is possible that some non-white families seek to integrate their children in “white schools,” while just as many non-white families would prefer that their children be with other non-white students. The aggregate result of these countervailing choices leads to an effect in which the choices of minorities, *as a group*, are not correlated with

neighborhood racial composition. Because non-white groups show no racial preferences, most of the segregation that emerges from individual choice results from many white individuals avoiding areas occupied by people of color.

Related to debates regarding the structure of racial preferences are disputes about the real causes of race- or class-based preferences that individuals display in surveys. The concern is whether stated preferences for social settings are determined *purely* by their racial or economic composition or whether these factors may serve as a *proxy* for a setting's overall quality (Harris 1999, 2001). That is, do people select social settings because of the social group(s) that occupy them, or do people choose areas based primarily upon other criteria, such as safety, appearance, and other social amenities? Studies that address this question produce mixed results. An initial group of studies suggests that, in fact, apparent race-based avoidance patterns among whites may be the spurious outcome of other factors that often characterize neighborhoods inhabited by non-whites. For example, David Harris (1999) uses data on neighborhood satisfaction to show that neither blacks nor whites rate "black" neighborhoods poorly once other factors, such as neighborhood poverty and crime, are considered. In another study, Harris (2001) finds that housing desirability (estimated with hedonic price analysis) is not influenced by racial composition. Other studies indicate that a setting's racial composition, only in conjunction with other attributes for area and location, affects the movement of white families across neighborhoods and metropolitan areas (Frey 1979; Taub, Taylor, and Dunham 1984). In this study, I examine how much race/class avoidance and school characteristics affect school preferences.

The Context: Philadelphia's Magnet School Program

Philadelphia experienced a dramatic transformation in its racial composition over the course of the 20th century. This transformation had tremendous ramifications for segregation in public schools. As Table 1 shows, the public school system served increasing percentages of non-whites between 1920 and 1990. This was largely the result of three factors: the increase of the non-white, student-aged population within the city, the exodus of white students to the city's private schools, and the loss of the city's white children to its outlying suburbs.

Table 1 shows these trends. Column A shows that the percentage of white, school-aged children in Philadelphia's metropolitan area who live in the central city dropped from 66 to 19 percent between 1920 and 1990. During the same period, the percentage of non-white, school-aged children in the city increased from 6 to 59 percent (Column B). At the same time, the percent of the city's white students who attended private school rose from 28 to 60 percent (Column C). These three trends corresponded with a precipitous rise in the percentage of Philadelphia's public school students who were non-white—from 7 to 77 percent (Column D).

The withdrawal of white students from Philadelphia's public schools coincided with an increase in residential segregation between whites and African Americans. Segregation between African Americans and whites, as measured by the index of dissimilarity, increased from .61 in 1930 to .80 in 1980 (Hershberg et al. 1979).³ By 1990, Philadelphia was among the most racially segregated cities in the nation (Massey and Denton 1993). This residential segregation is reflected in the city's elementary schools, where dissimilarity between white and African American students was .78 in 1990.

3. The index of dissimilarity reflects the degree to which two social groups (e.g., whites and non-whites) are evenly distributed across a set of nominal categories such as schools. One interpretation of dissimilarity is the proportion of one group (for example, white students) who would have to be moved from one school to another so that the proportion of white students in the population is reflected in every school. For details of calculation methods, see Taeuber and Taeuber (1965). Note, the 1930 and 1980 figures reported here are based upon the same 248 geographic areas (i.e., 1930 census tracts).

Table 1 • Trends in the Racial Composition of Philadelphia's Metropolitan Area, Central City, and Public Schools, 1920 to 1990

| Year | Children 5 to 18, Metropolitan Area | | Children 5 to 18, Philadelphia | | Children in Public and Private Schools, Philadelphia | | Children in Public Schools, Philadelphia | | Column A | Column B | Column C | Column D |
|------|-------------------------------------|-----------|--------------------------------|---------|--|---------|--|---------|---|--|---|--|
| | Non-white | White | Non-white | White | Non-white | White | Non-white | White | Percent of Metropolitan Area's White Children in Central City | Percent of Philadelphia's Children Who Are Non-white | Percent of Philadelphia's White Students Attending Private School | Percent of Philadelphia's Public School Students Who Are Non-white |
| 1920 | 41,074 | 606,009 | 26,338 | 399,558 | 14,219 | 241,765 | 13,472 | 173,123 | 65.9 | 6.2 | 28.4 | 7.2 |
| 1930 | 68,714 | 716,588 | 47,590 | 425,832 | 33,709 | 294,193 | 32,798 | 202,063 | 59.4 | 10.1 | 31.3 | 14.0 |
| 1940 | 82,449 | 633,467 | 60,110 | 358,152 | 44,076 | 240,001 | 42,543 | 154,302 | 56.5 | 14.4 | 35.7 | 21.6 |
| 1950 | 105,832 | 603,849 | 79,957 | 304,564 | 57,443 | 213,387 | 54,346 | 115,395 | 50.4 | 20.8 | 45.9 | 32.0 |
| 1960 | 173,166 | 841,942 | 137,289 | 303,897 | 121,900 | 265,572 | 110,480 | 125,729 | 36.1 | 31.1 | 52.7 | 46.8 |
| 1970 | 269,721 | 1,031,984 | 204,897 | 275,912 | 184,100 | 253,113 | 169,336 | 101,784 | 26.7 | 42.6 | 59.8 | 62.5 |
| 1980 | 246,122 | 568,754 | 202,734 | 169,081 | 177,192 | 156,257 | 140,432 | 64,500 | 29.7 | 54.5 | 58.7 | 68.5 |
| 1990 | 260,256 | 628,870 | 167,980 | 117,417 | 160,215 | 109,512 | 146,595 | 44,130 | 18.7 | 58.9 | 59.7 | 76.9 |

Data describing the Philadelphia Metropolitan Area and city of Philadelphia's school-aged populations

1920, 1980: Ruggles and Sobek 1997 [computer file]

1930, 1940, and 1950: Gardner, and Cohen 1971 [computer file]

1960: U.S. Bureau of the Census 1963, Table 20

1970: U.S. Bureau of the Census 1973, Table 24

1990: U.S. Bureau of the Census 1993, Table 54

Private school enrollment data

1920, 1930, 1940, and 1950: School District of Philadelphia 1920, 1930, 1940, 1950

1960: U.S. Bureau of the Census 1963, Tables 73 and 77

1970: U.S. Bureau of the Census 1973, Tables 120, 125, and 130

1980: U.S. Bureau of the Census 1981, Tables 119 and 126

1990: Ruggles and Sobek 1997 [computer file]

Public school enrollment data

1920, 1930, 1940, 1950, 1960, 1970, 1980, and 1990: School District of Philadelphia 1920, 1930, 1940, 1950, 1960, 1970, 1980, 1990

In terms of poverty, 61 percent of Philadelphia's 1990 public school students lived below 185 percent of the poverty level (i.e., below \$23,495, which qualifies students in a four-person household for a free or reduced-price lunch). Philadelphia, like many other cities, exhibits moderate levels of segregation between poverty groups in its neighborhoods. In 1980 and 1990, dissimilarity between those living above and beneath poverty was .38 across census tracts.⁴

To alleviate the high levels of racial segregation within the city's public schools, the Pennsylvania Human Relations Commission (a state-authorized, eleven-member panel with legal authority to enforce state statutes prohibiting discrimination) ordered the School District of Philadelphia to achieve "maximum feasible desegregation" in 1968. By 1977, the school district and Human Relations Commission agreed to a desegregation plan that largely relied on the voluntary participation of parents via a magnet school policy.⁵

The formal goal of the magnet school program was to integrate schools racially by drawing students from "white" parts of the city and also from private schools. Unlike neighborhood schools, which serve students living within a geographically defined attendance zone, magnet schools do not serve a set catchment area. To enter a magnet school, students must file a magnet school application (with a parental signature) by November of the school year prior to their transfer. These magnet school forms are collected by neighborhood schools and sent to the district's central administration building. Copies of each form are then sent to the magnet school(s) to which each student applies. (Students may apply to every magnet school if they wish.) These forms are then evaluated by school site committees to determine whether applicants are qualified to enter the school. Qualifications include high standardized test scores, good grades, and good behavior.

In 1990, most magnet schools in Philadelphia were high schools. Consequently, 75 percent of all magnet school applications were filed by eighth grade students in an effort to gain admission into a magnet school as ninth graders. Indeed, 39 percent of all prospective ninth grade students filed an application and 24 percent eventually attended a magnet school. Because of the high participation rates among prospective high school students, I analyzed data for eighth graders. Philadelphia had 23 neighborhood schools with a ninth grade and there were 22 magnet schools from which students could select.⁶

Data

I obtained a unique set of data from the School District of Philadelphia that described the demographic characteristics of *all students* in the school district for both the 1990–91 and

4. The mean dissimilarity between poor and non-poor persons across census tracts for the 15 largest central cities in 1990 ranged from .297 to .416. These figures appear to be low; however, the distinction between those above and below poverty is arbitrary and is presented here as it reflects the data that are used in this study. Residential segregation is higher between groups with larger income differences.

5. The voluntary nature of this racial integration plan was largely the result of two groups of white parents who fought against mandatory busing policies promulgated by the Pennsylvania Human Relations Commission. One of these parental groups, largely from the white section of the city, called themselves "The Citizens' Committee for the Preservation of Neighborhood Schools." The Citizen's Committee made two motions with the Pennsylvania Supreme Court. In their motion they argued there should be "No busing for elementary school children" and, in their second motion, for "Voluntary busing with approval of students and parents on the secondary grade level to Magnet Schools (*Pennsylvania Human Relations Commission v. School District of Philadelphia* 1976:18). The school district adopted this approach and defined an integrated school as one in which between 30 and 65 percent of the students were white (*Superintendents' Management Information Center* 1990:639). Thus, many magnet schools have higher percentages of white students in them compared with the public school population in order to achieve racial balance.

6. In addition to neighborhood and magnet schools, there are five schools that serve students who have emotional or mental disabilities. These students neither attend a neighborhood or magnet and are not included in analyses reported in this article.

1991–92 school years.⁷ The data also included the magnet school application forms that were filed by families in 1990. These application data are critical; they indicate which students filed magnet school applications and which magnet school their families selected. I matched the application data with demographic data for all students in the district, making it possible to determine which students did or did not apply to the magnet high school program. (I was able to obtain complete demographic records for 12,174, but when I merged the 1990–91 and 1991–92 school year data, only 10,922 students attended Philadelphia public schools during both years.) Examining data from this cohort permitted me to explore the actual movement of students across schools. The actual movement of students represents a combination of familial choices and institutional processes. That is, families select schools and the school district either denies or approves those choices. Having data that describes the actual movement of students and the preferred movement of students (based upon the assumption that everyone has their applications approved) makes it possible to gain some insight into how much individual and institutional processes contribute to race and economic segregation within the public school system.

Using the data provided by the school district, I am able to take into account the influence of students' race, poverty status, grade-level, standardized tests scores, and residential address. Students living in families receiving Aid to Families with Dependent Children (AFDC) or free school lunches I classified as poor. (In 1990, the poverty level was \$12,700 or less for a family of four [Office of the Federal Register 1990:5664–6]). I measured individual academic performance using students' percentile rankings from a customized standardized test (called the Chapter I Early Information Reporting System) administered by the school district. I specifically used students' mean test scores for reading and math for 1987, 1988, and 1989. I used residential addresses to determine the neighborhood high school attendance area for each student. (This was done with Geographic Information Systems mapping software.) By locating each student's attendance area, I was able to determine the magnet school applicants who left each neighborhood high school area, how these applicants varied by race and class, and how these choices influenced subsequent segregation in these areas.

I merged student records with information describing the high school serving each student's attendance zone. I measured the percent of non-white students (i.e., African American, Asian, and Latino students) in each zone, making it possible to measure how much magnet school application varied by the racial composition of a catchment area. I incorporated several "quality of life" measures distinct to this study, and other standard variables used in previous studies of racial preferences or school choice.⁸ These quality of life measures included the percentage of poor students living across neighborhood school attendance areas and a description of crime within, and surrounding, each school. To measure the level of safety in the areas surrounding each school, I compiled crime data from the Philadelphia Police Department's Uniform Crime Reports. Using geographic information software, I determined the census tract location of people arrested for violent crimes and the location of violent crimes reported to the

7. It would be ideal to have more recent information. Such information would reduce concerns regarding whether race and class "still matter" when parents make school choices. Unfortunately, newer data are difficult to obtain, as many of the district's schools are now run by private agencies (including three for-profit companies, two universities, and two nonprofit community-development organizations). Moreover, the inclusion of privately run schools, including charter schools, makes analyses of magnet school choice much more complex. These issues notwithstanding, Philadelphia's schools and neighborhoods, like those in most cities, remain highly segregated, suggesting that the segregation processes that I study in this article still undergird segregation today.

8. Families who use school choice options cite school academic quality and safety as primary considerations in selecting schools (Armor and Peiser 1998; Glenn, McLaughlin, and Salganik 1993; Greene, Howell, and Peterson 1998; Henig 1999; Lee, Croninger, and Smith 1994; Nault and Uchitelle 1982; Peterson, Myers, and Howell 1998; Schneider et al. 1999; Weinschrott and Kilgore 1998; Wolf, Howell, and Peterson 2000). Most attitudinal surveys investigating the reasons why parents use school choice often neglect to ask individuals whether they consider school racial composition. One study did ask if the racial mix of a school is important and most respondents indicated that it was unimportant compared with school academic quality (Smrekar and Goldring 1999).

Table 2 • Description of Independent Variable

| <i>Variable Name</i> | <i>Mean</i> | <i>Standard Deviation</i> | <i>Minimum Value</i> | <i>Maximum Value</i> |
|--|-------------|---------------------------|----------------------|----------------------|
| Characteristics of student populations in school attendance zones | | | | |
| Percent non-white in school attendance areas | 77.2 | 28.1 | 9.4 | 99.6 |
| Percent African American in school attendance areas | 63.4 | 36.8 | 1.2 | 98.8 |
| Percent Latino in school attendance areas | 10.2 | 17.1 | 0.2 | 62.4 |
| Percent Asian in school attendance areas | 3.7 | 4.8 | 0.0 | 21.4 |
| Percent poor in school attendance areas | 50.3 | 15.6 | 16.4 | 78.4 |
| Violence level in neighborhood schools | 7.9 | 4.7 | .5 | 20.7 |
| School-community violence | 26.4 | 19.7 | 2.4 | 86.6 |
| Factor score of school quality | 0.0 | 2.2 | -2.6 | 4.3 |
| Characteristics of eighth grade public school students | | | | |
| Percent students in the school district who are white | 22.3 | — | — | — |
| Percent students in the school district who are poor | 49.7 | — | — | — |
| Mean of students' test scores (1987 to 1989) | 47.6 | 22.5 | 1.0 | 99.0 |

police. (Violent crimes included homicides, rapes, assaults, aggravated assaults, robberies, and burglaries.) I then calculated the rate of violent activity per 1,000 persons in the immediate area (i.e., census tract) in which each school was located. This provided a measure of violence surrounding each school. I also measured the level of violence *within* each school using the school district's "serious incident file," which reported the number of dangerous events taking place on school grounds. Reported incidents included any assault, rape, arson, weapon possession, or reckless endangerment requiring intervention by non-school personnel (i.e., city police or school district security office). These variables provide measures of internal school violence and external neighborhood violence, two features that are important from parents' and students' points of view.

I also measured the performance of students in neighborhood schools. I combined two separate measures of student performance—Scholastic Aptitude Test (SAT) scores and the average percentile ranking of students who took the school district's standardized tests in math and reading. SAT and standardized tests for reading and math were highly correlated (all combinations were correlated at .69 or higher) and were combined into a single measure of school academic quality using factor analysis. Descriptive statistics are shown in Table 2.

Analysis I: Private Choices

In the following analyses, I use logistic regression to estimate the probability that a student attempts to leave a neighborhood school by filing a magnet school application. I present four regression models, as shown in Table 3, to see what factors drive the application process. In Model 1, I assess the likelihood that students filed magnet school applications with the district based upon their racial background (measured with a dummy variable in which the excluded category is non-white) and the percent of non-white students in the neighborhood school attendance areas in which they lived. To determine if the influence of attendance area racial composition on application rates was different for white and non-white students, I also include an interaction term in Model 1. The interaction term essentially allows me to determine whether the racial composition of school attendance areas has a greater influence on application rates among whites than it does for non-whites. To create the interaction term, I

Table 3 • Results of Logistic Regression Analyses (Log Odds) Predicting the Probability of Filing a Magnet School Application

| | <i>Model 1</i> <i>b (se)</i> | <i>Model 2</i> <i>b (se)</i> | <i>Model 3</i> <i>b (se)</i> | <i>Model 4</i> <i>b (se)</i> |
|-------------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Race (white = 1) | -.984 (.130)** | | -.947 (.135)** | -1.189 (.150)** |
| Percent non-white in school zone | .0002 (.001) | | -.002 (.001) | -.012 (.002)** |
| <i>Race*school zone non-white</i> | .022 (.002)** | | .020 (.002)** | .020 (.002)** |
| Poverty (non-poor = 1) | | -.252 (.139) | -.024 (.145) | -.015 (.163) |
| Percent poor in school zone | | .008 (.002)* | .005 (.002) | .009 (.003) |
| <i>Poverty*school zone poor</i> | | .015 (.003)** | .010 (.003)* | .007 (.003) |
| Community violence | | | | -.011 (.002)** |
| School violence | | | | -.024 (.005)** |
| School quality | | | | -.323 (.023)** |
| Student test scores | | | | .035 (.001)** |
| Intercept | -.454 (.103)** | -1.041 (.110)** | -.753 (.142)** | -1.256 (.198)** |
| Model χ^2 | 237** | 276** | 409** | 2132** |
| Degrees of freedom | 3 | 3 | 6 | 10 |

Valid number of cases is 12,137 for eighth grade students. Model 4 includes a dummy variable for students with missing test scores.

* p < .001 ** p < .0001

multiplied the dummy variable for student race by the percent of non-white students in school attendance areas.

Model 1 reveals two very different application patterns for white and non-white families. The probability that a non-white family will apply to a magnet school does not vary by the racial composition of the school attendance area in which they live. This is shown by the coefficient for the second term in the equation, which is close to zero. This indicates that application rates for non-white families *do not vary* with the racial composition of their neighborhood school attendance zone. Second, the slope of the interaction term indicates that application rates among white students increase significantly as the percent of non-white students in their neighborhood school area increases. For ease of interpretation, I converted these coefficients into percentages using the following formula:

$$\text{Prob(of applying)} = [1/(1+e^{-z})] \times 100$$

where e is the base of the natural log and z equals $B_0 + B_1X_1 + B_2X_2 + \dots$. I then graphed these estimated percentages, as shown in Figure 1.

The symbols in the plot represent the actual percentages of white and non-white students who applied to leave each school and the lines represent the regression slopes. The graph shows that white and non-white families have very different choice patterns and that such patterns will likely increase racial segregation in neighborhood schools. Specifically, white students are much more likely than non-white students to leave neighborhood school zones with higher percentages of non-white students; this is likely to increase the percent of non-white students in schools serving higher percentages of non-white students (and decrease the percentage of non-white students in schools serving higher percentages of white students). Such patterns indicate increased segregation in the neighborhood schools children leave. Moreover, the likely increase in segregation appears to be driven by a pattern of out-group avoidance in which white families remain in white schools and leave non-white schools. By contrast, the

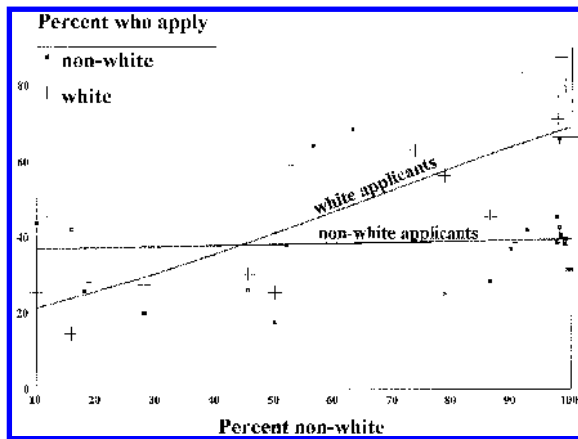


Figure 1 • Percent of Students Who Apply by Race and Percent of Non-White Students in Neighborhood School Attendance Zone

choices of non-white families do not vary by the racial composition of schools they leave. These patterns conform to the hypothesis of out-group avoidance.

In Model 2, I explore similar questions by student poverty status. The first term shown in the model, labeled “poverty,” indicates that there is no significant difference in the rate of application to magnet schools for poor and non-poor students (at the intercept). This suggests that poor and non-poor students are equally likely to remain in schools *servicing areas with relatively low levels of poverty*. (This can be seen in Figure 2, in which the regression lines converge in school attendance areas with fewer poor students.)

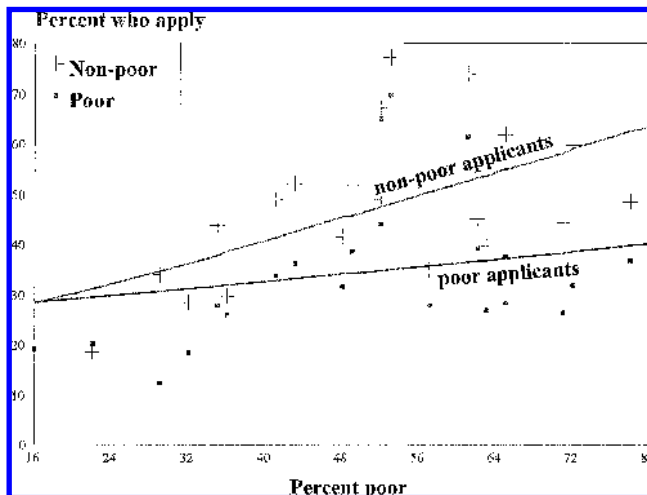


Figure 2 • Percent of Students Who Apply by Poverty Status and Percent Poor in Neighborhood School Attendance Zone

However, differences between poverty groups emerge as poverty increases in school attendance areas. Both poor and non-poor students are more likely to leave a neighborhood school as the poverty in the area increases; yet, non-poor students leave schools serving areas with higher percentages of poor students at *greater rates* than poor students. This is indicated by the steeper regression line for non-poor students. These patterns are likely to increase economic segregation in the neighborhood schools children leave.

The patterns in Models 1 and 2 confirm that both racially and economically advantaged families are more likely than their disadvantaged counterparts to leave schools with higher rates of poverty and non-white children. The findings I produce are consistent with patterns of out-group avoidance. I take these analyses one step further by examining the joint-effects of race and economic status on the probability that a student will attempt to leave a neighborhood school, as shown in Model 3. The results indicate that school racial composition remains an important factor in predicting application rates for students independent of their poverty status and the poverty rates of the schools they attempt to leave. This is indicated by the fact that the coefficients for race remain stable from Model 1 to Model 3. By contrast, the coefficients for school poverty rates diminish in significance. Thus, race appears to be a stable predictor of school application rates even when economic conditions are controlled.

To show these patterns more clearly, I estimate the probability that students apply to leave a school under two conditions: In the first scenario, half of the students in a school are poor but the percent of non-white students in the school attendance areas increases from 20 to 70 percent. In the second scenario, half of the students in a school attendance area are non-white and the percent of poor students in the catchment area increases from 20 to 70 percent.

I use these two scenarios to determine the sensitivity of families from different racial/ethnic backgrounds to schools that vary in their race and economic composition. First, I examine the application rates of non-poor white students across schools of varying types. As the racial composition of the school attendance area increases from 20 to 70 percent—but economic composition is held at 50 percent—application rates increase 22 percentage points (from 35 to 57 percent). This shows that attempts to leave neighborhood schools (among wealthier white students) increase as the percentage of non-whites in the areas increases—even when poverty rates are held constant. When I hold the racial composition of an attendance area at 50 percent, but vary economic composition (from 20 to 70 percent), non-poor white application rates rise 18 percentage points (from 37 to 55 percent). These results suggest that the racial composition of a school's attendance area remains highly correlated with the school choices of non-poor whites, even when the economic composition of the school is held constant.

The pattern becomes more telling when I compare it with the application pattern among poor, non-white students. In contrast to white students, non-whites are *not* more likely to apply to a magnet school as the percentage of non-whites in their neighborhood attendance area increases. For example, as the percentage of non-whites increases from 20 to 70 percent (holding poverty rates constant at 50 percent), two percent fewer non-whites file a magnet school application (a decrease from 37 to 35 percent). Thus, there is little relationship between the racial context of the school community and the probability that a non-white student will attempt to leave that community.

Similarly, application rates vary little by the poverty rate of school attendance areas. For example, as the poverty rate in school zone areas increases from 20 to 70 percent, application rates rise from 32 to 38 percent (holding constant the racial composition of the school zone at 50 percent). In short, application rates among poor, non-whites remain below 40 percent across all school contexts and fluctuate little with the race and class composition of the school attendance area. These patterns contrast sharply with those of non-poor whites, who are much more likely to leave schools that are increasingly non-white and poor. These different patterns suggest that segregation by race/poverty will increase as a result of out-group avoidance patterns mainly among non-poor white families.

The above compares poor, non-white families (the most disadvantaged social group) with non-poor, white families (the least disadvantaged group) to show their very different application patterns. It is also useful to compare non-poor, non-whites with non-poor whites as a way of holding student poverty status constant (i.e., both groups are non-poor). This allows me to isolate the influence of race on application rates. I find that non-poor, non-white students (like their poor counterparts) do not make school choices on the basis of race. Specifically, as the percent of non-whites increases from 20 to 70 percent (holding poverty rates constant at 50 percent), application rates decline from 48 to 46 percent. Thus, there is little relationship between the racial composition of the school attendance zones and the probability that a non-poor, non-white student will attempt to leave that community.

In Model 4, I control for school quality and safety to assess whether avoidance patterns among advantaged groups result from efforts to leave academically inferior, unsafe schools. There are two noteworthy results. First, students are far less likely to leave a school as its standardized test scores rise. As suggested by some school choice advocates, school-quality measures are significantly correlated with school application rates. Moreover, measures of individual student performance are highly correlated with the probability that the student will apply to a magnet school. Based upon these findings, there is merit to the view that families are more likely to leave schools in which the average students do poorly on measures of academic achievement.

While school quality is significantly correlated with the probability that a student will apply to a magnet school, I find that controlling for test scores does not change the influence of race. This is made evident by the coefficients for race across Models 1, 3, and 4. In particular, the interaction term changes very little across these models; thus, school quality, school violence, and individual student test scores do not account for white families leaving schools with non-white students. This indicates that the significance of race in predicting school choices is robust.⁹

Analysis II: Public Consequences

In the preceding analyses, I show actual choices for schools that families make within the context of a magnet school program. In the analyses below, I calculate the public consequences of these private choices by showing how much they change segregation.¹⁰ I do this by

9. I think there are several other reasons why these findings are robust. First, I have produced parallel analyses for fourth grade magnet school applicants (these results are available upon request). While application rates among fourth grade students are lower than for eighth grade students, elementary school children are spread across 172 neighborhood school attendance areas. Despite these differences, the application patterns among elementary school children are strikingly similar to those shown among eighth grade students. As with eighth grade students, white students in fourth grade are increasingly likely to leave one of the 172 elementary schools as the percent of its non-white students increases. And, as with eighth graders, the application rates among non-white fourth grade applicants do not fluctuate with school racial composition. These race patterns remain when other school characteristics are controlled. Thus, I am able to replicate the result of eight grade students in a different set of schools (albeit within the same city).

Second, I used different measures of school racial composition, including the percent of non-white students in each school (as opposed to each school's attendance area). The substantive results do not change. In fact, the slope for the interaction term is steeper with the school-based measure than it is for variables based upon feeder-areas. Thus, the results shown in Table 3 are conservative.

Last, I also thought it would be instructive to compare the racial composition of the neighborhood schools that families leave with the racial composition of the magnet schools they select. To examine this issue, I compared the mean of the difference between the percent of non-white children in sending schools (i.e., neighborhood schools) and receiving schools (i.e., magnet schools). For white students, there are, on average, 13 percent fewer non-white students in the schools they select than the schools they attempt to leave. For non-white students, there are three percent fewer non-white students. This lends some support to the notion that whites are more sensitive to race than are non-whites. I will provide tables for these results upon request.

10. Changes in the race and poverty stratification for neighborhood and magnet schools are available upon request. Although the issue of stratification is important, other scholars have studied the difference in poverty rates between magnet and non-magnet schools. See Moore and Davenport (1990) for an example.

aggregating student level data to schools. By aggregating these data, I can determine how much segregation there would be if no family used the magnet school program versus how much segregation exists once some families move to magnet schools. Once school data have been assembled, I use the index of dissimilarity to determine how unevenly racial groups are distributed across schools. As noted earlier, the index of dissimilarity ranges from zero to one and indicates what proportion of one population would have to move from one school to another in order to achieve racial integration.

To assess how much choice changes segregation, I create a “baseline” level of segregation. This initial segregation is based upon the number of students residing within each neighborhood school attendance zone during the 1990–91 school year. This baseline represents segregation levels if every public school student attended their neighborhood school (i.e., if no magnet school program existed).

My first task is to examine how much race and economic segregation would change relative to the baseline if all magnet school applicants were allowed to exercise their choices. These analyses answer the question: What would segregation levels be in neighborhood schools if all families who applied to the program had their wishes approved? I answer this question in three ways. First, I calculate how much race and economic segregation in *neighborhood schools* would change if all magnet school applicants left them. Second, I calculate how much race and economic segregation would exist in *magnet schools* if all students who applied to them were admitted. (These are based upon the first magnet school choice of each family.) Third, I calculate race and economic segregation for *all students in all schools* if all magnet school applications were approved. These analyses show how choice affects segregation among children who are “left behind” in neighborhood schools, as well as segregation in the district as a whole.

The first column of Table 4 shows dissimilarity between white and non-white students. The first row represents the “baseline” level of segregation (i.e., what dissimilarity would be if every public school student attended their neighborhood school). Racial segregation across high school attendance areas is .68, indicating that roughly three-quarters of white students would have to change neighborhood schools to achieve racial integration.

To show what impact the choices would have on racial segregation in the neighborhood schools some families attempt to leave, I calculate dissimilarity for neighborhood schools after removing magnet school applicants, as shown in row two. Here, I establish how much segregation would change if all families were able to satisfy their choices. Under this scenario, dissimilarity would be .74. This represents a six point increase in segregation across neighborhood areas (from .68 to .74), indicating that white and non-white children “left behind” in neighborhood schools would become more segregated if all families had their choices satisfied.

The third row of the table indicates that magnet schools would be relatively integrated by race compared with neighborhood schools (dissimilarity is .38). Similarly, the last rows show expected levels of racial segregation across all high schools (both neighborhood and magnet

Table 4 • Expected Changes in Segregation Between White and Non-white Students

| School Comparisons | Dissimilarity White /Non-white |
|---|-----------------------------------|
| Baseline: Neighborhood schools with no student movement to magnet schools | .680 |
| Expected: Neighborhood schools after families make choices | .741 |
| Expected: Magnet schools after families make choices | .376 |
| Expected: All students in all neighborhood and magnet schools after families make choices | .593 |

Table 5 • Expected Changes in Segregation Between Poor and Non-poor Students

| <i>School Comparisons</i> | <i>Dissimilarity Poor/Non-poor</i> |
|---|--|
| Baseline: Neighborhood schools with no student movement to magnet schools | .270 |
| Expected: Neighborhood schools after families make choices | .299 |
| Expected: Magnet schools after families make choices | .218 |
| Expected: All students in all neighborhood and magnet schools after families make choices | .270 |

schools). Comparing the baseline with the actual outcome reveals a nine point decrease in racial segregation for all students (from .68 to .59). If all magnet school applications were approved then the magnet school program would achieve some racial integration across the district (and particularly in magnet schools), but this expected increase in integration might come at the expense of further increasing racial segregation in neighborhood schools. Thus, as indicated by the second row of Table 4, the choices families make may attenuate the effectiveness of the magnet school program.

Expected changes in segregation between poverty groups follow a pattern similar to that of racial segregation (see Table 5). Dissimilarity between poverty groups is .27 across neighborhood attendance areas (i.e., the baseline measure). If magnet school applicants had their choices approved, segregation in neighborhood schools would increase to .30. Yet, expected levels of economic segregation in magnet schools would be .22. Thus, relatively lower levels of expected economic segregation would exist in magnet schools than in neighborhood attendance areas. However, this lower, expected segregation in magnet schools is offset by the increase expected segregation in neighborhood schools. The result is to leave expected levels of economic segregation in the entire district unchanged (as shown in the last row of the table).

Comparisons can also be made between various race/poverty groups. For the sake of brevity, I focus on changes in segregation between more affluent whites and poor non-whites. I highlight this race/class comparison as it shows that there is a fairly substantial increase in expected levels of segregation in neighborhood schools between the most socially advantaged group (i.e., wealthier whites) and the least advantaged group (i.e., poor non-whites).

As Table 6 demonstrates, poor non-whites are highly segregated from non-poor whites across neighborhood attendance zones (.69). Expected levels of segregation between these groups would increase ten points (from .69 to .79) in neighborhood schools if all applications

Table 6 • Expected Changes in Segregation Between Poor Non-white and Non-poor White Students

| <i>School Comparisons</i> | <i>Dissimilarity Poor Non-whites/Non-poor Whites</i> |
|---|--|
| Baseline: Neighborhood schools with no student movement to magnet schools | .688 |
| Expected: Neighborhood schools after families make choices | .788 |
| Expected: Magnet schools after families make choices | .344 |
| Expected: All students in all neighborhood and magnet schools after families make choices | .665 |

were approved. Still, expected levels of segregation are lower in magnet schools (.34) and across all schools in the district (.67). In short, modest integration is expected to occur between the most advantaged and disadvantaged students, but this would occur at the expense of an expected ten point increase in segregation within neighborhood schools.

The above analyses focus on expected changes in segregation across different types of schools if all families had their wishes approved. This isolates the influence of family choice from the influence of administrative decisions made by the school district when magnet schools select students. Thus, the above analysis provides a way of observing how unfettered family choice might contribute to racial and economic segregation. To explore what *actually*¹¹ happens once magnet school applicants are selected by the school district, I calculate dissimilarity after approved applicants attend a magnet school. Comparing expected and actual changes in segregation provides insight into how much segregation in neighborhood schools changes as a result of familial decisions, and how much it changes as a result of the school district's selection of students from the applicant pool. I am primarily interested in determining how family choice contributes to segregation independent of the administrative decisions made by the school district. Table 7 shows these "actual" changes in segregation as well as the "baseline" and "expected" changes, as produced in prior tables.

The first set of comparisons in Table 7 shows dissimilarity between white and non-white students. As shown previously, if all students attended their neighborhood school (i.e., the *baseline*) the dissimilarity between racial groups would be .68. If all families had their choices approved, then *expected* dissimilarity would increase to .74. Finally, I show that actual dissimilarity is .76—or two points higher than expected dissimilarity. Thus, I find that neighborhood high schools are, in fact, more racially segregated as a result of students actually moving to magnet schools. Because there is only a slight difference between expected and actual increase in segregation, I infer that much of the increase in racial segregation is the result of the choices that families make; the institutional process of schools selecting students increases segregation in neighborhood schools modestly.

Some of the difference between expected and actual changes in racial segregation may occur because the school district defines an integrated school as one in which between 30 and 65 percent of the students are white. Given that roughly a quarter of public school students are white, magnet schools do, in fact, accept slightly higher percentages of white students relative to their share of the public school population in order to create integrated schools. This may account for the slightly higher "actual" racial segregation that is observed in neighbor-

11. I calculate these changes in segregation by following students to the schools they actually attend during the 1991–92 school year—which is the year after they file their magnet school applications. It would have been optimal to determine which applications to each school were approved, but the school district does not keep quality data of this nature. Thus, I follow a cohort of students between the eighth and ninth grades.

Also, showing actual changes in segregation among ninth graders due to the *magnet* school program is not straightforward. This is due to the presence of the voluntary racial desegregation program in Philadelphia's public schools. The voluntary desegregation program allows students to move from their current neighborhood school to any other neighborhood school in the district. To remove the influence of the voluntary racial desegregation program on segregation, I put students who attend non-neighborhood schools through the program back into the neighborhood schools they should attend. This provides a way of determining enrollment patterns in neighborhood schools without the influence of the voluntary desegregation program but with the influence of student choices using the magnet school program. The voluntary desegregation program does reduce racial segregation in neighborhood schools. The reduction occurs for two reasons: first, 90 percent of voluntary desegregation applicants are non-white; second, school district guidelines prevent students from leaving schools if such a move would increase segregation.

There is a second issue. It is possible that students who remained in public schools for 1990–91 and 1991–92 are different than those who left after 1990–91. To address this issue, dissimilarities between racial groups for all ninth grade public school students were constructed for the 1991–92 school year. The results are similar to those shown with the cohort data. For example, dissimilarity for race in neighborhood attendance areas is .680 based on the cohort data and .691 for all students.

Table 7 • Expected and Actual Changes in Segregation Between Race and Poverty Groups

| | <i>Dissimilarity White/Non-white</i> | | | <i>Dissimilarity Poor/Non-poor</i> | | | <i>Dissimilarity Non-poor White/ Poor Non-white</i> | | |
|----------------------|--|-----------------|---------------|--|-----------------|---------------|---|-----------------|---------------|
| | <i>Baseline</i> | <i>Expected</i> | <i>Actual</i> | <i>Baseline</i> | <i>Expected</i> | <i>Actual</i> | <i>Baseline</i> | <i>Expected</i> | <i>Actual</i> |
| Neighborhood schools | .680 | .741 | .758 | .270 | .299 | .300 | .688 | .788 | .802 |
| Magnet schools | — | .376 | .487 | — | .218 | .274 | — | .344 | .534 |
| All schools | .680 | .593 | .687 | .270 | .270 | .294 | .688 | .665 | .744 |

hood schools relative to the segregation one would “expect,” given parental choices. These details notwithstanding, most of the changes in racial segregation are apparently due to family choices.

The second row of the table indicates how much expected and actual segregation exists in magnet schools. If all families had their first magnet school choice approved, racial dissimilarity in magnet schools would be .38. However, once magnet school applicants actually move to magnet schools, segregation is .49. Thus, it appears that the magnet school application approval process by the school district, coupled with the ultimate decisions made by families, increases economic segregation above what one would expect if every applicant attended their first magnet school choice. Still, magnet schools are less racially segregated than if all students attended their neighborhood schools (i.e., the baseline).

The last row of the table shows expected and actual changes in segregation for the entire school district. As shown previously, if all students attended their neighborhood schools, dissimilarity would be .68. If all magnet school applicants had their first school choice approved, racial segregation in the school district would decline to .59. Thus, the expected integration in magnet schools would be enough to leave the entire school district more integrated. Still, what actually happens once approved applicants move to magnet schools is that segregation across all schools in the district is .69—roughly the same as the baseline figure of .68. Thus, the greater racial integration that occurs for the 25 percent of children in magnet schools is “offset” by the increased racial segregation of the 75 percent of children left behind in neighborhood schools. In the end, the school district does not achieve any integration for all students in the district.

Very similar patterns emerge for segregation between poor and non-poor students, as shown in the second set of columns in Table 7. In particular, neighborhood schools eventually become slightly more segregated than they would be if all students who lived in their catchment areas attended them (.27 versus .30). While actual economic segregation in neighborhood schools increases slightly, there is less economic segregation in magnet schools, as shown in the second row. By contrast, when I examine all schools in the district, I find that they are more economically segregated than if all students attended their neighborhood school (.27 versus .29). As with racial segregation, the higher economic integration in magnet schools is counterbalanced by the increased isolation of poor children in neighborhood schools, leaving the entire school district more economically segregated.

The last column in Table 7 compares dissimilarity between poor, non-whites with non-poor whites.¹² I find that actual dissimilarity in neighborhood schools (.80) is slightly higher than one would expect if all families had their choices satisfied (.79), and is .11 points higher than the baseline level of segregation if all families attended the local school serving their

12. A more complete set of race/class comparisons is shown in the Appendix.

neighborhood. Actual levels of race/economic segregation (as shown in the last row) are also higher across all schools in the district (.74) than the baseline (.69). Thus, segregation between the most and least disadvantaged race/economic groups is higher across all schools than it may be if no magnet program existed.

Private Choices Have Public Consequences

This study demonstrates that private choices have public consequences. In the context of a magnet school choice program, the private choices of individual families for schools are patterned by the race of families seeking alternative schools as well as the racial composition of the schools they leave. Specifically, white families are averse to attending schools that would expose their children to non-whites. By contrast, the school choices of non-white families are not correlated with schools' racial composition—one cannot predict whether a non-white child will avoid or seek a school based upon its racial composition. Thus, the private choices of individuals result in greater racial segregation in public, neighborhood schools. Moreover, it appears that the school district does not regulate these private choices, and the final result, once some magnet students are selected from the applicant pool, is to leave neighborhood schools more racially segregated. Similar patterns are found between economic groups.

The findings I report demonstrate in a number of ways that out-group avoidance by white families is the primary mechanism that increases racial segregation in Philadelphia's neighborhood schools. Because I rely upon data that describe real, rather than hypothetical, choices, I have been able to observe individual choices in their actual social contexts. In so doing, I find that race is a primary consideration in school choice and is not reduced to a mere "proxy" for the poor social conditions often associated with neighborhoods occupied by racial minorities. I know this because white avoidance of minority schools is not diminished when I account for school characteristics such as poverty rates, average test scores, and safety. While all students avoid schools with lower test scores, this does not diminish the power of race in shaping the school choices of white families. I also find that only white families avoid schools with non-white children. Non-whites neither avoid non-white schools nor seek schools with other non-white children. That is, non-whites demonstrate neither out-group avoidance patterns nor same-race affinities. Finally, my data show that individual choice can be linked with systemic segregation independent of the organizational processes that deny the choices of some families. In the case of magnet choice, schools deny some children entry into the program. Still, in this study, I find that segregation patterns after schools trim the applicant pool are similar to segregation patterns that would result if all students had their choices approved. This suggests that individual choices undergird a great deal of segregation. Although the number of organizations and structures influencing housing segregation are greater than in schools, schools, like neighborhoods, are segregated in large part because of the race- and class-oriented decisions of white and wealthier families.

These racial and socioeconomic patterns of out-group avoidance, and the subsequent segregation to which they lead, have implications for *laissez faire* approaches to school choice. Programs that allow the unfettered movement of children across schools will exacerbate existing race and class-based segregation in traditional, local neighborhood schools that children leave, further deteriorating the educational conditions faced by the most disadvantaged students. My conclusion is based upon data from a magnet school program that was designed to *integrate* students. Despite this goal, the few white students who remain in the public school system still avoid integrated neighborhood schools by using the magnet school choice program. Because the school district is unconcerned about the schools that children leave, any family can leave any neighborhood school. The effect of this is to allow magnet school applicants to contribute to racial and economic segregation by selectively leaving neighborhood schools. I argue that public school segregation would increase if, for example, voucher pro-

grams enabled any public school student to leave any public school for any private school. This suggests that the design of school choice programs must pay close attention to the role race plays in the way white families select schools.

The data I collected describe school choice patterns and changes in segregation for magnet schooling in Philadelphia. While the data accurately describe the city's public schools, it is possible that magnet school programs do not represent the way families make choices in other places using other school alternatives. I suggest that magnet schooling in Philadelphia is like most choice programs in that it *allows students to leave public schools that serve fixed geographic areas*. Almost all public neighborhood schools lose children to magnet, private, or charter schools. The issue is whether patterns of individual choice observed in Philadelphia magnet schools are likely to occur in other cities and for other programs. I believe they will. Nationally representative census data describing the race and economic composition of the areas children leave for private schools produce choice patterns remarkably similar to those for magnet schools in Philadelphia (Saporito, Yancey, and Louis 2001). In particular, white families leave neighborhoods to attend private schools when their neighborhoods have higher percentages of non-white students—even when the economic composition of the neighborhood is held constant. These patterns suggest that families across the country exercise private school choice in much the same way that Philadelphia's families use magnet schools.

These findings raise interesting dilemmas for school choice advocates who suggest that vouchers be given to economically disadvantaged students in schools with low average test scores (such as the Cleveland voucher program). My findings suggest that targeting poor students may not be enough to limit the influence of race-based avoidance patterns displayed by white families. To be sure, the evidence presented in Table 3 shows all families—including poor, non-white families—attempt to leave schools with lower test scores. Such a finding is consistent with the prognoses of choice advocates and also lends some support for the racial proxy hypothesis (Harris 1999, 2001). Still, the desire of all students to avoid non-performing schools does not account for the race-based choice patterns of white families. When I hold student and school characteristics constant (i.e., student test scores, student poverty rates, and school quality factors), I still find race-based avoidance patterns among white families. This avoidance pattern leaves public, neighborhood schools segregated by race. If one is concerned about racial segregation, the obvious resolution is to implement regulations that restrict the flow of students in and out of schools on the basis of race. However, such race-based policies begin to undermine the stated goals of school choice advocates—to make schools better through unfettered market mechanisms that create competition among schools for students who can make unrestricted choices. This presents something of a conundrum for school choice advocates who are genuinely worried about racial segregation, but may be reluctant to regulate the choices of “educational consumers” and the “nature demographic shifts” to which these choices may lead.

In the end, my findings provide no empirical support for arguments that unfettered school choice policies will reduce segregation by race and class; in fact, they substantiate claims that unrestricted school choice increases segregation of both types. White families use magnet school choice programs to avoid neighborhood schools composed of many non-white children, while non-white families, as a group, show no such sensitivity to race. Voucher programs would likely have the same effect, leading to out-group avoidance among whites. If these trends exist in other large cities beyond Philadelphia—and I suspect that they do—then fully developed school choice programs with few regulations or administrative oversight could lead to the very segregation that choice advocates hope to reduce. In the end, I believe that if choice policies are more widely enacted, they will make worse the very problems their proponents claim they will ameliorate.

Appendix

Table A • Expected and Actual Changes in Segregation Patterns Between Race/Poverty Groups

| | Dissimilarity Non-poor Whites/ Poor Non-whites | | | Dissimilarity Poor Whites/ Poor Non-whites | | | Dissimilarity Non-poor Whites/ Non-poor Non-whites | | |
|----------------------|--|----------|--------|--|----------|--------|--|----------|--------|
| | Baseline | Expected | Actual | Baseline | Expected | Actual | Baseline | Expected | Actual |
| Neighborhood schools | .688 | .788 | .802 | .640 | .677 | .681 | .713 | .767 | .791 |
| Magnet schools | — | .344 | .534 | — | .408 | .523 | — | .361 | .471 |
| All schools | .688 | .665 | .744 | .640 | .578 | .649 | .713 | .589 | .693 |

| | Dissimilarity Poor Whites/ Non-poor Non-whites | | | Dissimilarity Poor Whites/Non-poor Whites | | | Dissimilarity Poor Non-whites/ Non-poor Non-whites | | |
|----------------------|--|----------|--------|--|----------|--------|--|----------|--------|
| | Baseline | Expected | Actual | Baseline | Expected | Actual | Baseline | Expected | Actual |
| Neighborhood schools | .699 | .713 | .716 | .277 | .284 | .254 | .239 | .246 | .252 |
| Magnet schools | — | .428 | .554 | — | .336 | .430 | — | .174 | .205 |
| All schools | .699 | .596 | .668 | .277 | .283 | .302 | .239 | .219 | .246 |

References

- Armor, David and Brett Peiser. 1998. "Interdistrict Choice in Massachusetts." Pp. 157–86 in *Learning From School Choice*, edited by P. Peterson and B. Hassel. Washington, DC: The Brookings Institution.
- Astin, Alexander. 1992. "Educational 'Choice': Its Appeal May be Illusory." *Sociology of Education* 65:255–60.
- Bain, Read. 1928. "An Attitude on Attitude Research." *American Journal of Sociology* 33:940–57.
- Blank, Rolf, Roger Levine, and Lauri Steel. 1996. "After 15 Years: Magnet Schools in Urban Education." Pp. 154–72 in *Who Chooses, Who Loses?*, edited by B. Fuller and R. Elmore. New York: Teachers College Press.
- Blumer, Herbert. 1958. "Race Prejudice as a Sense of Group Position." *Pacific Sociological Review* 1:1–37.
- Bobo, Lawrence. 1999. "Prejudice as Group Position: Microfoundations of a Sociological Approach to Race and Race Relations." *Journal of Social Issues* 55:445–72.
- Bobo, Lawrence and Camille Zubrinsky. 1996. "Attitudes on Residential Integration: Perceived Status Differences, Mere In-Group Preference, or Racial Prejudice." *Social Forces* 74:883–909.
- Bonilla-Silva, Eduardo. 1996. "Rethinking Racism: Toward a Structural Interpretation." *American Sociological Review* 62:465–80.
- Brandl, John. 1998. "Governance and Educational Quality." Pp. 55–82 in *Learning From School Choice*, edited by P. Peterson and B. Hassel. Washington, DC: The Brookings Institution.
- Charles-Zubrinsky, Camille. 2000. "Neighborhood Racial-Composition Preferences: Evidence from a Multiethnic Metropolis." *Social Problems* 47:379–407.
- Chubb, John and Terry Moe. 1997. "Politics, Markets and Equality in Schools." Pp. 203–48 in *Autonomy and Choice in Context*, edited by R. Shapira and P. Cookson. New York: Elsevier Science, Inc.
- Clark, William. 1991. "Residential Preference and Neighborhood Residential Segregation: A Test of the Schelling Segregation Model." *Demography* 28:1–19.
- . 1992. "Residential Preferences and Residential Choices in a Multiethnic Context." *Demography* 29:451–66.
- Cloud, Cathy and George Galster. 1993. "What Do We Know About Racial Discrimination in Mortgage Markets." *The Review of Black Political Economy* 22:101–20.
- Coleman, James. 1992. "Some Points on Choice in Education." *Sociology of Education* 64:260–2.
- Coleman, James, Thomas Hoffer, and Sally Kilgore. 1982. "Achievement and Segregation in Secondary Schools: A Further Look at Public and Private School Differences." *Sociology of Education* 55:162–82.

- Coleman, James, Kathryn Schiller, and Barbara Schneider. 1993. "Parent Choice and Inequality." Pp. 147–80 in *Parents, Their Children, and Schools*, edited by B. Schneider and J. Coleman. Boulder, CO: West View Press.
- Coons, John and Stephen Sugarman. 1978. *Education by Choice: The Case for Family Control*. Berkeley: University of California Press.
- Farley, Reynolds. 1992. "Detroit Area Study, 1992: Social Change in Detroit." Ann Arbor: University of Michigan, Department of Sociology and the Detroit Area Studies.
- Farley, Reynolds and Howard Schuman. 1976. "Detroit Area Study, 1976: A Study of Metropolitan and Neighborhood Problems." Ann Arbor: University of Michigan, Department of Sociology and the Detroit Area Studies.
- Farley, Reynolds, Charlotte Steeh, Maria Kryson, Tara Jackson, and Keith Reeves. 1994. "Stereotypes and Segregation: Neighborhoods in the Detroit Area." *American Journal of Sociology* 100:750–80.
- Finn, Chester. 1990. "Why We Need Choice Choice." Pp. 3–19 in *Choice in Education: Potential and Problems*, edited by W. Boyd and H. Walberg. Berkeley: McCutchan Publishing Corporation.
- Frey, William. 1979. "Central City White Flight: Racial and Non-Racial Causes." *American Sociological Review* 44:425–48.
- Gans, Herbert. 1967. *The Levittowners: Ways of Life and Politics in a New Suburban Community*. New York: Vintage Books.
- Gardner, John and William Cohen. 1971. "County-Level Demographic Characteristics of the Population of the United States, 1930 to 1950." Chicago: University of Chicago Center for Urban Studies.
- Glenn, Charles, Chris McLaughlin, and Laura Salganik. 1993. "Parent Information for School Choice: The Case of Massachusetts." Boston: Center on Families, Communities, Schools and Children's Learning.
- Goldhaber, Dan. 1999. "School Choice: An Examination of the Empirical Evidence on Achievement, Parental Decision Making and Equity." *Educational Researcher* 28:16–25.
- Greene, Jay. 1998. "Civic Values in Public and Private Schools." Pp. 83–106 in *Learning from School Choice*, edited by P. Peterson and B. Hassel. Washington, DC: Brookings Institution Press.
- Greene, Jay, William Howell, and Paul Peterson. 1998. "Lessons from the Cleveland Scholarship Program." Pp. 357–94 in *Learning from School Choice*, edited by P. Peterson and B. Hassel. Washington, DC: Brookings Institution Press.
- Harris, David. 1999. "'Property Values Drop when Blacks Move in, Because . . .': Racial and Socioeconomic Determinants of Neighborhood Desirability." *American Sociological Review* 64:461–79.
- . 2001. "Why Are Whites and Blacks Averse to Black Neighborhoods?" *Social Science Research* 30:100–16.
- Henig, Jeffrey. 1996. "The Local Dynamics of Choice: Ethnic Preferences and Institutional Responses." Pp. 95–117 in *Who Chooses? Who Loses?: Culture, Institutions and the Unequal Effects of School Choice*, edited by B. Fuller and R. Elmore. New York: Teachers College Press.
- . 1999. "School Choice Outcomes." Pp. 68–110 in *School Choice and Social Controversy*, edited by S. Sugarman and F. Kemerer. Washington, DC: Brookings Institution Press.
- Hershberg, Theodore, Alan Burstein, Eugene Ericksen, Stephanie Greenberg, and William L. Yancey. 1979. "A Tale of Three Cities: Blacks and Immigrants in Philadelphia, 1850–1880, 1930, 1970." *The Annals of the American Academy of Political and Social Science* 441:55–80.
- Hess, Frederick and David Leal. 2001. "Quality, Race, and the Urban Education Marketplace." *Urban Affairs Review* 37:249–66.
- Hoxby, Caroline. 1998. "Analyzing School Choice Reforms That Use America's Traditional Forms of Parental Choice." Pp. 133–56 in *Learning from School Choice*, edited by P. Peterson and B. Hassel. Washington, DC: The Brookings Institute.
- Jackson, Kenneth. 1980. "Race, Ethnicity, and Real Estate Appraisal: The Home Owners Loan Corporation and the Federal Housing Administration." *Journal of Urban History* 6:419–52.
- . 1987. *Crabgrass Frontier: The Suburbanization of the United States*. New York: Oxford University Press.
- Lankford, Hamilton, E. S. Lee, and James Wyckoff. 1995. "An Analysis of Elementary and Secondary School Choice." *Journal of Urban Economics* 38:236–51.
- Lankford, Hamilton and James Wyckoff. 1999. "The Effects of School Choice on Residential Location and the Racial Segregation of Students." Albany: Departments of Economics and Public Administration and Policy, State University of New York at Albany.
- LaPiere, Richard. 1938. "The Sociological Significance of Measurable Attitudes." *American Sociological Review* 3:175–82.

- Lee, Valerie, Robert Croniger, and Julia Smith. 1994. "Parental Choice of Schools and Social Stratification in Education: The Paradox of Detroit." *Educational Evaluation and Policy Analysis* 16:434–57.
- Levin, Betsy. 1999. "Race and School Choice." Pp. 266–99 in *School Choice and Social Controversy*, edited by S. Sugarman and F. Kemerer. Washington, DC: Brookings Institution Press.
- Levin, Henry. 1998. "Educational Vouchers: Effectiveness, Choice and Costs." *Journal of Policy Analysis and Management* 17:373–92.
- Massey, Douglas and Nancy Denton. 1993. *American Apartheid*. Cambridge: Harvard University Press.
- Merrifield, John. 2001. *The School Choice Wars*. Lanham, MD: Scarecrow Education.
- Meyer, Robert and Steven Glazerman. 1997. "Racial Integration, Social Stratification and Public School Choice." Presented at the American Educational Research Association Meetings, March, Chicago.
- Meyer, Stephen. 2000. *As Long as They Don't Move Next Door: Segregation and Racial Conflict in American Neighborhoods*. Lanham, MD: Rowman and Littlefield Publishers, Inc.
- Moore, Donald and Susan Davenport. 1990. "School Choice, the New Improved Sorting Machine." Pp. 187–224 in *Choice in Education: Potential and Problems*, edited by W. Boyd and H. Walberg. Berkeley: McCutchen Publishing Corporation.
- Myrdal, Gunnar. 1964. *The Negro Social Structure*, vol. 2. New York: McGraw Hill.
- Nault, Richard and Susan Uchitelle. 1982. "School Choice in the Public Sector: A Case Study of Parental Decision Making." Pp. 85–98 in *Family Choice in Schooling*, edited by M. Manley-Casimir. Lexington, MA: Lexington Books.
- Office of the Federal Register. 1990. *Federal Register*, vol. 55. Washington, DC: Office of the Federal Register, National Archives and Records Administration.
- Pennsylvania Human Relations Commission v. School District of Philadelphia*. 1976. *Pennsylvania Commonwealth Court Reporter* 23:312.
- Peterson, Paul. 1998. "School Choice: A Report Card." Pp. 3–32 in *Learning from School Choice*, edited by P. Peterson and B. Hassel. Washington, DC: Brookings Institution Press.
- Peterson, Paul, David Myers, and William Howell. 1998. "An Evaluation of the New York School Choice Scholarships Program: The First Year." Princeton, NJ: Mathematica Policy Research.
- Rossell, Christine. 1990. *The Carrot or the Stick for School Desegregation Policy: Magnet Schools or Forced Busing*. Philadelphia: Temple University Press.
- Ruggles, Steven and Matthew Sobek. 1997. "Integrated Public Use Microdata Series." Minneapolis: Historical Census Projects, University of Minnesota.
- Saporito, Salvatore and Annette Lareau. 1998. "Choice as a Process: The Primacy of Race and the Secondary Importance of Other Factors in School Selection." *Social Problems* 46:418–39.
- Saporito, Salvatore, William Yancey, and Vincent Louis. 2001. "Quality, Race and the Urban Market Place Reconsidered." *Urban Affairs Review* 37:267–76.
- Schelling, Thomas. 1971. "Dynamic Models of Segregation." *Journal of Mathematical Sociology* 1:143–86.
- Schneider, Mark, Melissa Marschall, Christine Roch, and Paul Teske. 1999. "Heuristics, Low Information Rationality and Choosing Public Schools: Broken Windows as Shortcuts to Information about School Performance." *Urban Affairs Review* 34:729–41.
- School District of Philadelphia. 1920. *Annual Report to the Board of Education*. Philadelphia: School District of Philadelphia.
- . 1930. *Annual Report to the Board of Education*. Philadelphia: School District of Philadelphia.
- . 1940. *Annual Report to the Board of Education*. Philadelphia: School District of Philadelphia.
- . 1950. *Annual Report to the Board of Education*. Philadelphia: School District of Philadelphia.
- . 1960. *Annual Report to the Board of Education*. Philadelphia: School District of Philadelphia.
- . 1970. *Annual Report to the Board of Education*. Philadelphia: School District of Philadelphia.
- . 1980. *School District Enrollment Reports*. Philadelphia: School District of Philadelphia, Office of Research and Evaluation.
- . 1990. *School District Enrollment Reports*. Philadelphia: School District of Philadelphia, Office of Research and Evaluation.
- Smith, Kevin and Kenneth Meier. 1995. "Public Choice in Education: Markets and the Demand for Quality Education." *Political Research Quarterly* 48:461–78.
- Smrekar, Clair and Ellen Goldring. 1999. *School Choice in Urban America: Magnet Schools and the Pursuit of Equity*. New York: Teachers College Press.
- Superintendent's Management Information Center. 1990. Philadelphia: School District of Philadelphia, Division of Administrative and Survey Research Services.

- Tauber, Karl and David James. 1982. "Racial Segregation Among Public and Private Schools." *Sociology of Education* 55:133-43.
- Tauber, Karl and Alma Taeuber. 1965. *Negroes in the City*. Chicago: Aldine Publishing Company.
- Taub, Richard, D. Garth Taylor, and Jan Dunham. 1984. *Paths of Neighborhood Change*. Chicago: University of Chicago Press.
- Timberlake, Jeffrey. 2000. "Still Life in Black and White: Effects of Racial and Class Attitudes on Prospects for Residential Integration in Atlanta." *Sociological Inquiry* 70:420-45.
- U.S. Bureau of the Census. 1963. *Census of the Population: 1960*, vol. 1, *Characteristics of the Population, Part 40 Pennsylvania*. Washington, DC: U.S. Government Printing Office.
- . 1973. *Census of the Population: 1970*, vol. 1, *Characteristics of the Population, Part 40 Pennsylvania*. Washington, DC: U.S. Government Printing Office.
- . 1981. *1980 Characteristics of the Population, General Social and Economic Characteristics, Pennsylvania, Section 1*. Washington, DC: U.S. Government Printing Office.
- . 1993. *1990 Characteristics of the Population, General Social and Economic Characteristics, Part 40 Pennsylvania, Section 1*. Washington, DC: U.S. Government Printing Office.
- U.S. Department of Education. 1997. "Strategic Plan, 1998-2201." Washington, DC: U.S. Printing Office.
- Weinschrott, David and Sally Kilgore. 1998. "Evidence from the Indianapolis Voucher Program." Pp. 307-34 in *Learning From School Choice*, edited by P. Peterson and B. Hassel. Washington, DC: The Brookings Institution.
- Wells, Amy Stuart and Robert Crain. 1992. "Do Parents Choose School Quality or School Status: A Sociological Theory of Free Market Education." Pp. 174-96 in *The Choice Controversy*, edited by P. Cookson. Newbury Park, CA: Corwin Press, Inc.
- Willms, Douglas. 1996. "School Choice and Community Segregation: Findings from Scotland." Pp. 133-54 in *Generating Social Stratification*, edited by A. Kerckhoff. Boulder, CO: Westview Press.
- Witte, John. 2000. *The Market Approach to Education*. Princeton, NJ: Princeton University Press.
- Wolf, Patrick, William Howell, and Paul Peterson. 2000. "School Choice in Washington, DC: An Evaluation After One Year." In *The Conference on Vouchers, Charters and Public Education*. Cambridge, MA: Harvard University Program on Education Policy and Governance.
- Wrinkle, Robert, Joseph Stewart, and J. L. Polinard. 1999. "Public School Quality, Private Schools and Race." *American Journal of Political Science* 43:1248-53.
- Yancey, William and Salvatore Saporito. 1995a. "Racial and Economic Segregation and Educational Outcomes: One Tale-Two Cities." *Journal of Applied Behavioral Science* 3:105-225.
- . 1995b. "Ecological Embeddedness of Educational Processes and Outcomes." Pp. 193-228 in *School/Community Connections: Exploring Issues for Research and Practice*, edited by L. Rigsby, M. Wang, and M. Reynolds. San Francisco: Jossey-Bass Inc.
- Yinger, John. 1995. *Closed Doors, Opportunities Lost: The Continuing Costs of Housing Discrimination*. New York: Russell Sage Foundation.
- Yu, Corrine and William Taylor. 1997. "Difficult Choices: Do Children Need Magnet Schools." Washington, DC: Citizen's Commission on Civil Rights.