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SCHOOL SEGREGATION, CHARTER SCHOOLS, AND ACCESS TO QUALITY EDUCATION

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ABSTRACT: *Race, class, neighborhood, and school quality are all highly interrelated in the U.S. educational system. In the last decade a new factor has come into play, the option of attending a charter school. We offer a comprehensive analysis of the disparities among public schools attended by white, black, Hispanic, Asian, and Native American children in 2010–2011, including all districts in which charter schools existed. We compare schools in terms of poverty concentration, racial composition, and standardized test scores, and we also examine how attending a charter or non-charter school affects these differences. Black and Hispanic (and to a lesser extent Native American and Asian) students attend elementary and high schools with higher rates of poverty than white students. Especially for whites and Asians, attending a charter school means lower exposure to poverty. Children's own race and the poverty and charter status of their schools affect the test scores and racial isolation of schools that children attend in complex combinations. Most intriguing, attending a charter school means attending a better-performing school in high-poverty areas but a lower performing school in low-poverty areas. Yet even in the best case the positive effect of attending a charter school only slightly offsets the disadvantages of black and Hispanic students.*

Racial disparities in the characteristics of schools attended by whites, blacks, Hispanics, Asians, and Native Americans are well documented. Here we update previous analyses using recent national data and we take into account a new factor in the educational system, the emergence of charter schools. Some advocates of charters argue that these alternative schools can create a better range of opportunities for all children, partly because they can draw students from a wider area. We offer evidence on this premise by studying every district in the country in which charter schools existed in 2010–2011 at the elementary or high school level. Our focus is on access: what kinds of schools do children of various race and ethnic backgrounds attend, and if they attend a charter school, how does it compare to the non-charter schools attended by students of the same race/ethnicity in that district? This is the question that a parent might consider: If I send my child to a charter school, how will that school be different from the alternative non-charter school? Like many parents, we suspect that choosing a school with lower levels of poverty, greater racial and ethnic diversity, and higher test scores is advantageous. But this study does not use individual-level data on students and we draw no conclusion about how school characteristics affect a student's educational progress.

Our key finding is that charter status has little impact on racial disparities in schools. Regardless of charter status, white, black, and Hispanic children on average attend schools in which their group is the majority, and Asian and Native American children attend schools where their group is disproportionately represented. Black, Hispanic, and Native American children attend schools with

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the highest poverty concentrations (as high as 75% for the average black child's non-charter schools), and their schools on average have substantially lower test scores than those attended by whites and Asians. That said, attending a charter school can mean going to a higher performing school, and in particular we find that charters in high-poverty areas have better test scores than non-charters. Conversely, charters in low-poverty areas have lower scores.

LITERATURE REVIEW

Segregation, Poverty, and Performance in Public Schools

High school segregation persists in the United States despite attempts to desegregate schools in the 1970s after the *Brown vs Board of Education* decision (Clotfelter, 2004; Logan, Oakley, & Stowell, 2008). Its effect on academic performance has been the focus of numerous studies (Armor, 1995; Bankston & Caldas, 1998; Bilfulco & Ladd, 2006; Cutler & Glaeser, 1997; Mercer & Scout, 1974; Orfield & Eaton, 1996; Roscigno, 1998; Rumberger & Palardy, 2005; Schofield, 1995; Wells & Crain, 1994). For example, Stiefel, Schwartz, and Chellman (2008) found that highly segregated school districts have the largest gaps in achievement between white and non-white students. Using a national sample of kindergarten students, Crosnoe (2005) documented that Mexican students are more likely than white students to attend schools with higher proportions of minorities and poor students. These schools are also lower in quality as measured by teacher experience, school size, and the community location of the school. This literature has led researchers to conclude that equal access to quality schools remains a large source of the racial and ethnic gaps in academic achievement (Card & Rothstein, 2007; Orfield & Yun, 1999).

Concentrations of racial and ethnic minorities are highly correlated with concentrations of poverty. The typical white child attends a school with a majority of non-poor students, while the majority of a typical minority student's classmates are living below the poverty line (Logan, 2002; Saporito & Sohoni, 2007). Sixty percent of black and Hispanic students attend majority poor schools, while only 30% of Asian students and only 18% of white students do so (Orfield & Lee, 2005). This relationship is due in part to black and Hispanic students' disproportionate location in large city school districts. Seventy percent of the 4.5 million students in the largest 24 largest central city school districts are black and Hispanic (Orfield & Lee, 2005), and in 20 of those districts 90% are black. In general, urban high schools, especially in the Northeast and Midwest, have much lower graduation rates than their suburban counterparts (Swanson, 2008). In addition to serving poorer students, urban schools are more likely to attract less experienced and qualified teaching staff and likely to have lower levels of funding per pupil than their suburban counter parts (Eaddy et al., 2003; Hochschild & Scovronick, 2003).

The classic Coleman Report (Coleman et al., 1966) attempted to tease apart the relative influence of the racial and class composition of schools. Coleman found that the association between racial isolation and academic achievement can be explained by the class composition of the student body. In other words, students do poorly in predominantly minority schools because the student population is poorer, not because of the direct effect of racial isolation on achievement (see also Hauser, Sewell, & Alwin, 1976). Coleman argued that, if school composition matters for academic achievement, the class makeup of the student body matters more than the racial and ethnic composition. Many more recent studies have found that the class composition of the school affects individual achievement even after controlling for measures of individual students' family background (Chaplin, 2002; Chubb & Moe, 1990; Gamoran, 1996; Jencks & Mayer, 1990; Lee & Smith, 1997).

Charter Schools, Selectivity, and School Composition

In addition to analyzing schools' racial composition, poverty status, and test outcomes, this study also compares charter and non-charter schools. Our question is more limited than the one in the school effects literature: If a student enrolls in a charter school rather than a non-charter school in

the same district, what will the student encounter in terms of racial isolation, poverty level, and the school's performance?

Looking at aggregate outcomes does not allow us to assess school effects. Very likely the largest differences between charter and non-charter schools are due to selectivity. Charter schools do not admit students based on residential location, and consequently they have a potential to disrupt the tight connection between living in a poor minority neighborhood and attending a poor, minority, and low-performing school. However, since parents must choose to apply for a charter school, the preferences of parents and families play a heightened role in the eventual student composition of charter schools. These preferences may lead to different combinations of race, poverty, and achievement in charter schools than in traditional non-charter schools even within the same district.

Schneider, Teske, Marshall, and Roch (1998; see also Buckley & Schneider, 2005) surveyed parents in two elementary school districts in New York City where there were choices about where to enroll. They found that most parents had little knowledge of the statistics on school test scores, racial composition, or violent incidents at the schools attended by their children. But parents who had chosen a school rather than accepting the default offered to them had more information, and there was a strong association between how much they said they valued a given school characteristic and the actual measure in their child's school. Kleitz, Weiher, Tedin, and Matland (2000) surveyed parents of charter school children in Texas, finding that virtually all parents reported concern with "educational quality." They also found that minority and lower income parents were more likely also to care about safety, location, and being with friends.

Regardless of the precise reason for choosing a charter school, enrolling in any charter school requires an active application process and therefore takes more time and effort than accepting the default public school. This has led some researchers to focus on what they refer to as *creaming*—attracting the most motivated or most capable students in their area. However, recruitment, enrollment procedures, and location can vary dramatically across charter schools, even in the same district. This can lead to differences in enrollment demographics among charter schools. One study of the Washington, DC schools (Lacireno-Paquet, Holyoke, Moser, & Henig, 2002) distinguished more market-oriented charter schools (e.g., those with a partnership with a for-profit organization) from nonmarket, mission-based charters, and compared these to traditional public schools. A lower share of students in market-oriented charters were special education students, eligible for free or reduced price lunches, or had limited English proficiency than those in nonmarket charters, with traditional public schools in between (because of small sample sizes, these differences, though large in magnitude, were mostly not statistically significant). Other studies in Chicago show that market- and mission-oriented charter schools differ in their locations across the city. Mission-oriented schools tend to locate in more disadvantaged and minority neighborhoods, while market-oriented schools located in areas experiencing gentrification (Burdick-Will, Keels, & Schuble, 2013; Lipman, 2011). The important inference that we draw is that charter schools may vary greatly among themselves in their recruitment behavior, and it would be a mistake to compare them to non-charter schools without taking into account variation in demographic composition.

There is also evidence that parental choice leads to charter schools that are less racially diverse than nearby traditional public schools, but the extent of this effect varies across different states and districts (Ascher, Jacobowitz, & McBride, 1999; Cobb & Glass, 1999; Wells, Holme, Lopez, & Cooper, 2000). For example, in Texas, multiple studies have reported that segregation among charter schools is higher than in non-charter schools (Garcia, 2007; Weiher & Tedin, 2002). In some areas (Philadelphia and Texas) charter schools appear to increase overall school segregation levels, while in others (Chicago) they may reduce segregation (Zimmer et al., 2009). The predominant racial composition of charter schools varies by location. In some areas, larger shares of white students attend charter schools than non-charters and some argue that white parents use charter schools as a means of white flight from integrated traditional public schools (Renzulli & Evans, 2005). A specific question for this study is therefore the degree of racial isolation in charter and non-charter schools.

There is also substantial variation in the estimated impact of charter schools on individual students' achievement. After controlling for the potential selection bias generated by the choice to attend a charter school, many studies find no difference on average between comparable students

who attend charter and non-charter schools (Braun, Jenkins, & Grigg, 2006; Carnoy, Jacobsen, Mishel, & Rothstein, 2005; NAEP, 2005; Nelson, Rosenberg, and Van Meter, 2004). However, several review studies emphasize the variability in results across schools, states, and metropolitan locations (Fabricant & Fine, 2012; Fuller, 2007; Gleason, Clark, Tuttle, & Dwoyer, 2010; Lubienski & Lubienski, 2006; Silverman, 2013, 2014). For example, one recent study concluded that only 17% of charter schools provide superior quality schooling, whereas more than one-third of charter schools perform worse than comparable non-charter schools (Center for Research on Education Outcomes, 2009, p. 1). Raymond (2009) also finds that students in regular public schools have higher achievement levels than their peers in charter schools. Zimmer et al. (2009) show that the direction of the effect varies around the country. While most students who transfer to charter schools continue to perform as they had previously, middle school students in Chicago and Texas did worse in their new charter schools. Effects may also depend on the specific racial or ethnic group in question. In North Carolina, black students were more likely to enroll in predominantly black charter schools. Their achievement in these schools was negatively affected, while white students who attended more diverse charter schools did better (Bifulco & Ladd, 2006).

Again, in this study we do not make any claims about whether the students who attend charter schools benefit academically from that choice or whether they would have achieved similarly in a different setting. Instead, we document the joint contribution of parental selection and educational organization that results in higher or lower state test scores at the school level and how the schools that students of different races attend compare to one another.

DATA

This study analyzes the racial composition, poverty levels, and school-level achievement in charter and non-charter public elementary (represented by fourth graders) and high schools (represented by tenth graders) across the United States. We ask what are the characteristics of schools attended by students of different race or ethnicity, how does it matter whether it is a charter or non-charter school, and how do race and ethnicity, poverty, and charter status combine to predict the school's test scores and students' racial isolation. Data on all public schools in 2010–2011 are provided by the National Center for Education Statistics (NCES, 2012).

Testing data are drawn from the percent of students who meet state proficiency levels in reading and mathematics on tests administered by each state, reported to and made available by NCES (EDFacts 2013a, EDFacts 2013b). The content and scoring of these tests vary widely across states. However, these are the most comprehensive testing data. The National Assessment of Educational Progress (NAEP) provides scores that are comparable across states, but these are only available for a sample of students within a small sample of U.S. schools. In order to make the state test scores more meaningful, we have recalibrated the percent passing scores as percentiles of school performance within the state (following the approach of Logan, Minca, & Adar, 2012). This creates a rank ordering within every state.[1] From the perspective of a parent who is considering a range of school options, almost always within a state, these percentiles are meaningful. A school at the 20th percentile is much worse than one at the 50th percentile in any state, regardless of differences in the states' test content or proficiency cutoffs, which we suspect are considerable.

In the following analyses, we present some tables that report average percentiles at a national level (Tables 1, 2, and 3). The reader should interpret these averages cautiously. A school at the 45th percentile in one state might actually be performing better than a school at the 55th percentile in another state. This is not necessarily a problem, but one could imagine scenarios under which it could affect our estimates of differences between charter and non-charter schools, or between schools attended by white and minority children. Our view is that these are the best possible national estimates at the current time and therefore they should be used now and replaced in the future if better measures become available.

Our final conclusions *are not* based on comparisons across states. In fact our multivariate analyses of test scores (Table 5) make comparisons only across schools within the same school district because we introduce district-level fixed effects into these models. This approach gives us more confidence

TABLE 1

Weighted Average Characteristics of Schools: National vs. Sample

	Elementary School					High School				
	National	Universe	Sample	Sample non-charter	Sample charter	National	Universe	Sample	Sample non-charter	Sample charter
Reading	45.7	40.9	40.9	40.8	42.4	50.8	45.8	45.9	46.4	41.0
Math	44.9	40.8	40.8	40.9	39.6	50.4	46.5	46.7	47.6	37.4
Free lunch	51.4%	59.2%	59.2%	59.9%	51.3%	41.3%	48.9%	48.8%	49.1%	46.0%
Percent white	50.1%	34.7%	34.6%	34.2%	39.0%	53.1%	35.6%	35.8%	35.7%	36.8%
Percent black	16.2%	22.2%	22.1%	21.4%	29.4%	16.5%	21.0%	20.7%	20.4%	23.6%
Percent Hispanic	25.0%	33.8%	33.8%	34.8%	23.8%	22.2%	33.7%	33.8%	34.0%	32.2%
Percent Asian	4.8%	5.3%	5.4%	5.5%	3.6%	4.9%	6.1%	6.2%	6.5%	2.9%
Percent Native American	1.1%	0.8%	0.8%	0.8%	0.8%	1.1%	0.9%	0.9%	0.9%	1.2%
Percent charter	3.7%	8.6%	8.5%	0.0%	100.0%	3.7%	9.4%	9.0%	0.0%	100.0%
City	31.6%	53.9%	54.1%	54.0%	55.4%	31.1%	55.7%	55.3%	55.1%	57.5%
Suburb	53.9%	42.2%	42.1%	42.3%	39.4%	54.1%	40.0%	40.4%	40.8%	36.7%
Nonmetro	14.6%	3.9%	3.8%	3.6%	5.3%	14.8%	4.3%	4.3%	4.1%	5.8%
Northeast	16.5%	10.9%	10.7%	10.6%	11.4%	17.1%	11.5%	11.0%	11.2%	9.1%
Midwest	21.8%	13.6%	13.1%	12.3%	21.9%	22.9%	12.4%	11.9%	11.2%	18.5%
West	38.2%	41.1%	41.2%	42.3%	28.9%	36.5%	37.8%	38.3%	39.4%	26.9%
South	23.5%	34.4%	35.1%	34.8%	37.8%	23.5%	38.3%	38.8%	38.1%	45.4%
Students	3,412,837	1,429,589	1,385,194	1,267,227	117,967	3,380,593	1,318,958	1,297,432	1,181,191	116,241
Schools	45,630	18,681	17,733	15,306	2,427	17,397	5,877	5,281	3,771	1,510
Districts	10,908	926	926	844	926	9,306	772	772	738	772

TABLE 2

Characteristics of Elementary Schools Attended by Children of Different Race/Ethnicity, Charter and Non-Charter

	White		Black		Hispanic		Asian		Native American	
	Charter	Non-charter	Charter	Non-charter	Charter	Non-charter	Charter	Non-charter	Charter	Non-charter
Poverty (% free lunch)	30.1%	42.9%	73.2%	74.7%	61.7%	69.1%	38.9%	52.5%	50.5%	63.1%
Racial composition										
% White	68.9%	61.0%	12.2%	17.3%	22.3%	18.6%	40.5%	30.4%	39.5%	36.6%
% Black	9.2%	10.8%	72.5%	56.1%	14.0%	12.5%	12.8%	12.8%	9.7%	13.0%
% Hispanic	13.6%	18.9%	11.3%	20.4%	57.7%	61.9%	19.4%	26.4%	18.2%	31.4%
% Asian	3.8%	4.9%	1.6%	3.3%	3.0%	4.2%	22.5%	24.2%	2.9%	4.5%
% Native American	0.8%	0.8%	0.3%	0.5%	0.6%	0.7%	0.6%	0.6%	25.9%	11.1%
Metropolitan location										
City	37.6%	38.4%	75.1%	64.9%	62.2%	62.4%	49.9%	60.9%	42.5%	52.6%
Suburb	52.8%	55.4%	23.3%	33.1%	35.6%	35.9%	47.7%	36.6%	34.8%	35.4%
Nonmetro	9.7%	6.1%	1.5%	2.1%	2.2%	1.8%	2.4%	2.5%	22.7%	12.0%
Region										
Northeast	7.2%	6.8%	19.7%	15.6%	8.9%	10.7%	8.8%	19.8%	2.8%	5.3%
Midwest	19.8%	15.7%	36.4%	17.9%	7.4%	5.9%	21.1%	8.8%	20.4%	11.0%
West	23.5%	39.7%	34.2%	56.1%	34.0%	40.2%	22.4%	25.0%	14.9%	25.4%
South	49.4%	37.8%	9.6%	10.4%	49.7%	43.2%	47.8%	46.5%	62.0%	58.3%
Reading score	53.5	54.9	27.9	27.5	40.4	33.1	54.0	51.8	36.8	37.4
Math score	46.6	52.4	28.5	28.2	40.6	35.5	49.7	51.9	34.7	37.1
Number of students	45,973	433,317	34,718	271,713	28,035	440,802	4,272	70,114	942	10,047
% students in charters	9.6%		11.3%		6.0%		5.7%		8.6%	
Number of schools	1,957	13,343	1,829	13,310	1,892	14,155	972	9,733	497	4,711

TABLE 3

Characteristics of High Schools Attended by Children of Different Race/Ethnicity, Charter and Non-Charter

	White		Black		Hispanic		Asian		Native American	
	Charter	Non-charter	Charter	Non-charter	Charter	Non-charter	Charter	Non-charter	Charter	Non-charter
Poverty (% free lunch)	29.2%	35.8%	60.0%	61.7%	56.5%	56.4%	38.0%	46.9%	48.4%	49.0%
Racial composition										
% White	65.5%	59.1%	16.1%	20.5%	19.1%	21.1%	38.2%	29.0%	34.5%	38.0%
% Black	10.4%	11.7%	62.7%	50.7%	12.6%	13.1%	13.4%	14.6%	7.9%	12.1%
% Hispanic	16.7%	20.1%	17.1%	21.8%	62.1%	57.9%	28.0%	28.3%	26.3%	28.6%
% Asian	3.0%	5.3%	1.6%	4.6%	2.5%	5.4%	16.3%	22.8%	1.9%	5.0%
% Native American	1.1%	1.0%	0.4%	0.5%	1.0%	0.8%	0.8%	0.7%	26.7%	13.7%
Metropolitan location										
City	41.1%	40.9%	75.0%	67.3%	64.0%	62.0%	61.9%	63.9%	48.8%	49.0%
Suburb	47.4%	51.9%	23.0%	31.1%	34.0%	36.1%	36.1%	33.4%	34.9%	30.9%
Nonmetro	11.4%	7.2%	1.9%	1.6%	2.0%	1.9%	2.1%	2.7%	16.3%	20.1%
Region										
Northeast	9.3%	7.3%	14.9%	17.7%	5.5%	10.6%	6.9%	19.9%	2.6%	5.1%
Midwest	21.8%	14.6%	33.2%	18.2%	5.4%	4.4%	10.7%	7.3%	11.0%	8.6%
West	22.7%	37.9%	35.5%	51.6%	27.8%	38.1%	24.4%	21.9%	12.7%	22.7%
South	46.2%	40.2%	16.4%	12.5%	61.3%	46.9%	58.0%	50.9%	73.6%	63.6%
Reading score	49.7	59.0	27.3	33.5	38.8	39.4	63.5	52.6	35.9	46.0
Math score	41.9	59.5	26.9	32.7	38.3	41.9	62.0	56.4	30.9	48.5
Number of students	42,764	421,568	27,443	240,773	37,381	401,058	3,313	76,595	1,423	10,615
% students in charters	9.2%		10.2%		8.5%		4.1%		11.8%	
Number of schools	1,524	3,200	1,284	3,238	1,483	3,262	645	2,727	521	2,092

in our use of state tests. There is also a substantive reason: most parents are making choices within their school district, so within-district differences matter most.

NCES also provides data on the student body of each school through its Common Core of Data (NCES, 2012). Race and ethnicity are reported in the following categories: non-Hispanic white, black, Hispanic, Asian, and Native American/other races. NCES also reports for most schools the number of students who are eligible for free or reduced price lunches, which we use as an indicator of poverty. Eligibility for reduced price lunches is reported for the entire school. We assume that free or reduced price lunch eligibility of students in each grade mirrors that of the whole school.

Finally the metropolitan location of the school (central city, suburban, or non-metropolitan) was coded based on the school's geographic coordinates (reported by NCES). Geographic information systems (GIS) procedures were used to locate schools within principal cities of metropolitan statistical areas (MSAs), the suburban remainder of the MSA, or outside of an MSA using the Census Bureau's geographic definitions as of 2010.

The meaning of the categories of elementary and high school varies greatly around the country (e.g., elementary schools may or may not include the sixth grade, high schools may or may not include ninth grade, and some districts have K-12 schools). In this study we use fourth graders to represent the experience of elementary students. This is the elementary grade level for which test scores are most often available. When test score data were not available for fourth graders we used the scores from one grade above or below. Similarly we use tenth graders to represent high schools. The advantage of using tenth graders is that in many schools there is substantial attrition in higher grades. We determine the racial composition of the school before much of this attrition, which may be selective by race or ethnicity. NCES only reports test scores and free or reduced price lunch eligibility for the entire high school and we apply these values to tenth graders.

The universe of schools studied here omits states that had no charter school legislation in 2010. These states are Alabama, Kentucky, Maine, Montana, Nebraska, North Dakota, South Dakota, Vermont, Washington, and West Virginia. It also omits school districts in the remaining states that had no charter school operating within their boundaries (based on the 2010 school district boundary files provided by the Census Bureau). Geographic coordinates provided by NCES were used to place each charter school within the geographic boundaries of a traditional public school district (cybercharters without a fixed location are therefore not included in the study). Within this universe our sample includes all schools with complete data on racial composition, free or reduced price lunch, and reading and math test scores.

We limit our analyses to districts with at least one charter school. Table 1 shows the importance of this decision, because districts with charters are quite different from those without charters. The table presents the average characteristics of schools (weighted by fourth or tenth grade enrollment) for the nation, for districts with a charter school, for our final sample schools, and for charter and non-charter schools in the sample. In this table *national* refers to all public schools in the nation, *universe* refers to all schools in districts that include at least one charter school, and *sample* refers to schools in those districts for which all the data required by this study are available. Nationally, there were 3.4 million students in the fourth grade, of which 1.4 million (41.9%) were in districts with a charter school. Our study includes almost all of these children, of whom 117,000 (8.5% of those in sampled districts, but only 3.7% of the national total) were in charter schools. The corresponding numbers for tenth graders are similar. Charter schools are present in less than half of the school districts in the nation, and where they are present they enroll less than 10% of students in either elementary or high school grades.

Table 1 also reports average reading and math scores in schools. Because these averages are weighted by the number of students at a given grade level in a school, they can be read as the test score of the school where the average fourth or tenth grader in each category of district or school was enrolled. The universe (districts with a charter school) has lower average reading and math scores than the nation, suggesting that charters are more likely to be established in districts with lower performing schools. These districts at both the elementary and high school levels have a higher share of free or reduced price lunch–eligible students, a smaller share of white students, and considerably more blacks and Hispanics. They are much more likely to be located in central cities

than in suburbs or nonmetropolitan areas. They are concentrated in the South, and less likely to be found in the Northeast or Midwest. There are mixed results for charter school achievement levels. At the elementary level there are small differences: charters had slightly higher average reading scores but lower math scores. At the high school level the differences are much larger, and in both reading and math the average charter high school lagged several percentiles behind.

METHODS

Our model is a multilevel fixed-effects regression. Inclusion of district fixed effects ensures that all coefficients are based only on comparisons within districts. To estimate the model requires that we reorganize our school-level data as files for individual students. For example, if a given school has 100 white students, we treat it as providing 100 cases in which the student is white and all school characteristics are the same for every case. Effectively then our data set has about 1.3 million cases in which each student's race is known and each student is properly matched to characteristics of his or her school. With this file we can estimate a model predicting a school characteristic as the dependent variable.

We first predict poverty level as an outcome of the child's race (the only level 1 variable), plus whether the school is a charter school (the only level 2 variable) and interactions between race and charter status. We then estimate models where both test scores and racial isolation are predicted by the child's race (level 1), plus whether the school is a charter school and the poverty share of students in the school (level 2). We also include interactions among these predictors, and their inclusion turns out to be important. The interactions with charter status tell us whether the (possible) differences between charter and non-charter schools are the same for students of all races and in schools with varying poverty levels. The race*poverty interaction tells us whether poverty affects outcomes equally for students of each race or ethnic group.

The model predicting poverty is as follows:

$$P_{jk} = \alpha_0 + \alpha_1 C_{jk} + \alpha_2 R_{ijk} + \alpha_3 C_{jk}{}^* R_{ijk} + u_k + e_{ijk}, \quad (1)$$

and the model predicting test scores or racial isolation is as follows:

$$Y_{jk} = \beta_0 + \beta_1 C_{jk} + \beta_2 R_{ijk} + \beta_3 P_{jk} + \beta_4 C_{jk}{}^* R_{ijk} + \beta_5 C_{jk}{}^* P_{jk} + \beta_6 R_{ijk}{}^* P_{jk} + \beta_7 C_{jk}{}^* R_{ijk}{}^* P_{jk} + u_k + e_{ijk}. \quad (2)$$

In these models, Y_{jk} is the test score (reading or math) percentile of the school j in district k that the student i attends, or the proportion of school j students that is the same race as student i. C_{jk} is an indicator for charter status for school j in district k. R_{ijk} is a series of indicators for race or ethnicity for each student i in school j and district k. P_{jk} is the percent of students in school j and district k receiving free or reduced school lunch. The u_k are school district fixed effects that control for all unmeasured characteristics of school districts, such as metropolitan location and region. Having controlled for u_k, all school variables become deviations from the district mean. This means we compare each school to the others in its own district. This is desirable because most children attend schools within their own district boundaries, and our primary interest is in comparing non-charter schools with the charter schools that are equally available to them. Charter schools located within other districts are not, for most children, a realistic option. Finally, e_{ijk} is the individual-level error term. We adjust standard errors of coefficients to take into account clustering of cases within schools.

Two organizational factors apart from charter status have been postulated to affect school performance: school size and grade configuration. We have added to our basic models indicators of both variables. It has been speculated that large schools are less effective, and there is some evidence for this hypothesis, especially for schools with larger shares of low-income students (Bickel, Williams, & Glascock, 2001; Friedkin & Necochea, 1988; McMillen, 2004; Weiss & Kipnes, 2006). Our measure

of school enrollment has a mean of 533 in elementary schools (standard deviation 276) and 999 in high schools (standard deviation 890). Another concern of educators is whether mixing elementary students with older youth (as in a K-9 or K-12 school) is educationally disruptive. However Weiss and Kipnes (2006) found that once school size was taken into account, grade configuration had no significant effect on student outcomes. We include a dichotomy for schools with standard vs. nonstandard configurations (21.1% of elementary schools, those mixing K-6 students with Grades 7 or higher, are nonstandard; 31.1% of high schools, those including students in Grades 8 or lower, are nonstandard).

RESULTS

Descriptive Comparisons

We begin with a comparison of the schools attended by different racial groups in our sample districts (as defined in Table 1). In Table 2 the values are weighted by the number of white, black, Hispanic, Asian, or Native American children who attend each school. The table also reports the number of students of each race or ethnicity in the sampled schools. Table 3 provides corresponding data for high schools.

These tables for the 2010–2011 academic year offer a current national accounting of the disparities between schools attended by white and Asian students, on the one hand, and black, Hispanic, and Native American students on the other. These new findings for districts with a charter school are consistent with previous reports for all districts (Logan, Minca, & Adar, 2012). The charter vs. non-charter differences shown here for the first time are small in comparison to those between racial or ethnic groups. Since most children of every group attend non-charter schools, we will use the non-charter values to illustrate the disparities. All of these school characteristics are interrelated, and in our multivariate analyses below we seek to separate out their independent effects.

Racial and Ethnic Disparities

1. **Poverty concentration.** Among elementary students in public schools (fourth graders) the average white student is in a school where 43% of classmates are eligible for free or reduced price lunch. This value is moderately higher for Asians (53%), higher still for Native Americans (63%), and highest for Hispanics (69%) and blacks (75%). Disparities for high school students (tenth graders) are somewhat smaller (likely because high schools draw students from a wider geographic area) but they rank groups similarly.
2. **Racial composition.** Reflecting regional patterns and residential and school segregation, children of every group attend schools where their own group is greatly overrepresented. White fourth graders attend non-charter schools that average 61% white; black children, 56% black; Hispanic children, 62% Hispanic. Though less than 6% of fourth graders are Asian, on average those children attend schools that are 24% Asian. Less than 1% of fourth graders are Native American, but their schools average 11% Native American. The degree of racial isolation as measured in this way is almost the same at the high school level.
3. **Metropolitan and regional location.** Location in central cities, suburbs, or nonmetropolitan (rural) areas is a contributing factor to these differences. A majority of white children attend suburban schools, while an even larger majority of black and Hispanic children (and also Asian children) attend schools in central cities. Native Americans are distinctive in their much higher share in nonmetropolitan areas, though the largest number are in city schools. There is also a distinctive regional pattern. Of those in non-charter schools, the majority of black students attend schools in the South. Other groups have larger shares in the West, where only 10% of black fourth graders are found. Due to these potential geographic differences, our multilevel models include district fixed effects that eliminate any constant differences across districts and essentially compare schools to others in the same district.

4. **Test scores.** Finally, Tables 2 and 3 provide data on racial and ethnic differences in the average test scores of the schools that children attend. The gaps are great. Using the non-charter school reading scores to illustrate this point, white fourth graders attend schools that perform at the 55th percentile and Asians at the 52nd percentile. Corresponding percentiles are much lower for blacks (28th), Hispanics (33rd), and Native Americans (37th).

Charter vs. Non-Charter Schools

These patterns offer a context within which to evaluate differences between charter and non-charter schools that are shown in these same tables. We note that in the districts included in Tables 2 and 3 (i.e., districts with at least one charter school), a small minority of students attend a charter school. Among fourth graders this share ranges from about 6% for Hispanics and Asians to 10%–11% for whites and blacks. Charters differ in several ways from non-charter schools. We focus on test performance, poverty concentration, and racial composition.

1. **Test scores.** These comparisons vary according to the group, the subject area, and grade level. At the elementary level we find small differences (less than three percentile points) for blacks, Asians, and Native Americans. Reading and math scores in schools attended by Hispanics favor charter schools; math scores in schools attended by whites favor non-charter schools. At the high school level, in contrast, there are only small differences for Hispanics, but some very large differences for other children. Those favoring non-charter schools are reading and math for whites, blacks, and Native Americans. But charter schools attended by the average Asian student have higher math and reading scores than non-charter schools. These variations suggest to us that *charter* is a complex category, and that charter schools may recruit very differently or function very differently for students in different racial or ethnic groups.
2. **Poverty concentration.** One reason why Hispanic fourth graders' charter schools have higher test scores is that they have fewer free or reduced price–lunch eligible students (high in either case, but 62% in charter schools and 69% in non-charter schools). However, the concentration of poverty is also lower in elementary charter schools attended by whites, Asians, and Native Americans. The only exception is blacks. At the high school level whites' and Asians' charter schools have lower poverty rates than the non-charter schools that they attend, but there is no difference for other groups.
3. **Racial composition.** Differences in the degree to which children are racially isolated also vary by group and school level. Consistent with previous studies cited above, black students are more racially isolated in charter schools (on average they attend charter schools that are 73% black in the fourth grade and 63% black in the tenth grade, compared to 56% and 51% in non-charter schools). White students also are more racially isolated at both levels, and the same is true for Native Americans. Asian students are slightly less isolated in charter schools, and they have greater exposure to white students in those schools. There are only small differences for Hispanics, and these differences are in mixed directions.

Multivariate Models

These descriptive tables show large differences across racial and ethnic groups and smaller differences between charter and non-charter schools for students in each group. To move toward understanding these relationships better, we turn to multivariate analyses. We begin with models predicting poverty level of schools, since there are strong reasons to suspect that poverty level in turn affects test scores. As stated above, these models include district-level fixed effects, so all comparisons are made across schools in the same district and any influence of factors that are constant across schools, such as metropolitan location, are removed.

The model coefficients are reported in Table 4. The explained variance is .18 for elementary school poverty and .13 for high school poverty. As expected, children from all minority groups are predicted

TABLE 4

Multilevel Model Predicting Schools' Poverty Level (% Free Lunch) by Child's Race and Schools' Charter Status

	Elementary		High school	
Charter	−0.925[a]	(0.12)	−1.226[a]	(0.18)
Race (white omitted)				
Black	2.030[a]	(0.10)	0.997[a]	(0.08)
Hispanic	2.062[a]	(0.09)	0.997[a]	(0.07)
Asian	0.648[a]	(0.17)	0.380[a]	(0.06)
Native American	1.576[a]	(0.11)	0.575[a]	(0.07)
Charter by race interactions				
Charter*Black	0.542[a]	(0.17)	0.405	(0.25)
Charter*Hispanic	0.491	(0.35)	0.726[a]	(0.25)
Charter*Asian	0.134	(0.24)	−0.261	(0.24)
Charter*Native American	0.355	(0.48)	1.135**	(0.47)
Nonstandard configuration	−0.364[a]	(0.08)	−0.039	(0.14)
School size (100s)	−0.056[a]	(0.02)	−0.052[a]	(0.01)
Constant	4.823[a]	(0.06)	4.401[a]	(0.04)
Observations	1,338,512		1,239,782	
R-squared	0.18		0.129	
Number of districts	958		772	

[a] $p < 0.01$; ** $p < 0.05$; * $p < 0.1$
Note: Robust standard errors in parentheses; models include district fixed effects.

to attend higher poverty schools than whites, though the differential is much smaller for Asians than for blacks or Hispanics. This effect is smaller for high schools than for elementary schools, which reflects the larger catchment areas of high schools and their consequent greater heterogeneity. Most relevant to the possibility of selective recruitment, charter schools are predicted to have 9%–12% lower poverty than non-charter schools. This differential is conditioned by the child's race (as shown by the charter*race interaction terms). The charter effect is less than half as great for black elementary children and Hispanic high school children, and it is absent for Native Americans (the main effect of −.123 is counterbalanced by the interaction term of +.114).

We now turn to models predicting test scores and racial isolation, reported in Table 5. The explained variance is between .330 and .478, reflecting the power of these three predictors. The main coefficients are substantial on their own.After controlling for all variables in the model we continue to find large disparities between groups, with whites and Asians able to attend the highest performing schools at a given poverty level and charter/non-charter category, and blacks and Hispanics generally in the worst performing schools. This is in addition to the disadvantage that blacks and Hispanics attend higher poverty schools to begin with. Because white is the omitted category for the race variable, the main effects of charter and poverty apply specifically to whites. The difference between charter and non-charter schools for white students (elementary or high school) shows that whites' charter schools have lower average math scores, though there is no significant difference on reading.

To determine effects of the independent variables on other groups requires also taking into account the interactions among charter status, race, and poverty. The number of significant two-way and three-way interaction effects makes it difficult to assess separately the influence of each predictor by inspecting the coefficients in this table. For this reason we summarize their effects in Figures 1 and 2. The figures show the predicted reading score (vertical axis) for elementary and high schools attended by white, black, Hispanic, and Asian children—a separate box for each group. (The results for math scores are almost identical and not shown separately.) The horizontal axis is the percentage of students in the school who are free or reduced price–lunch eligible. The black lines represent non-charter schools and the gray lines represent charter schools. Each line extends only from the 10th to the 90th percentile of school poverty for each group, so the horizontal positioning of the lines reveals where most schools fall for that group. The vertical dotted line represents the median school poverty for schools attended by children in that group.

TABLE 5

Multilevel Model Predicting Schools' Test Scores and Racial Composition by Child's Race and Schools' Poverty and Charter Status

	Elementary schools						High schools					
	Reading		Math		Isolation		Reading		Math		Isolation	
Charter	1.37	(1.11)	−0.78	(1.35)	0.35[a]	(0.13)	1.28	(2.43)	−6.75**	(2.69)	0.06[a]	(0.57)
Poverty (10 point change) [a]	−8.03[a]	(0.16)	−7.09[a]	(0.16)	−0.51[a]	(0.02)	−9.85[a]	(0.44)	−9.32[a]	(0.43)	−0.07[a]	(0.70)
Charter*Poverty	2.89[a]	(0.34)	3.10[a]	(0.39)	0.15[a]	(0.03)	7.27[a]	(0.69)	6.83[a]	(0.69)	0.04[a]	(0.38)
Race (white omitted)												
Black	−4.18[a]	(0.66)	−4.55[a]	(0.89)	−0.79[a]	(0.18)	−2.80[a]	(0.88)	−4.03[a]	(0.81)	−0.08[a]	(0.83)
Hispanic	−2.67**	(1.08)	−1.62	(1.02)	0.02	(0.24)	−2.15**	(0.99)	−1.60**	(0.81)	0.02	(0.17)
Asian	3.69**	(1.69)	5.71**	(2.27)	−2.29[a]	(0.43)	2.73[a]	(0.42)	3.79[a]	(0.54)	−0.22[a]	(2.21)
Native American	−2.13[a]	(0.67)	−1.85[a]	(0.69)	−3.91[a]	(0.18)	−0.33	(0.79)	0.31	(0.90)	−0.40[a]	(3.99)
Charter by race interactions												
Charter*Black	−4.34[a]	(1.44)	−1.06	(1.87)	1.18[a]	(0.21)	−15.29[a]	(2.48)	−7.13[a]	(2.46)	0.04	(0.42)
Charter*Hispanic	3.01	(2.14)	3.70	(2.46)	−0.43*	(0.23)	−5.27**	(2.57)	−1.031	(2.56)	−0.03	(0.29)
Charter*Asian	−2.33	(2.02)	−2.36	(2.50)	0.12	(0.65)	10.00[a]	(2.75)	15.52[a]	(3.33)	−0.14[a]	(1.38)
Charter*Native American	−5.90**	(2.61)	−4.06*	(2.46)	2.61[a]	(0.78)	−12.21[a]	(3.60)	−11.45[a]	(3.71)	0.15[a]	(1.49)
Poverty by race interactions												
Poverty*Black	0.09	(0.24)	0.36	(0.26)	1.15[a]	(0.04)	1.01**	(0.50)	1.11**	(0.51)	0.13[a]	(1.30)
Poverty*Hispanic	0.91*	(0.52)	1.24**	(0.49)	1.10[a]	(0.05)	1.60[a]	(0.37)	1.74[a]	(0.34)	0.12[a]	(1.24)
Poverty*Asian	0.67*	(0.35)	0.98*	(0.55)	0.60[a]	(0.11)	0.67[a]	(0.24)	1.03[a]	(0.26)	0.08[a]	(0.78)
Poverty*Native American	0.79**	(0.36)	0.86[a]	(0.32)	0.69[a]	(0.05)	1.49[a]	(0.40)	1.82[a]	(0.68)	0.09[a]	(0.91)
Three−way interactions												
Poverty*Charter*Black	0.98**	(0.48)	0.78	(0.50)	−0.33[a]	(0.07)	−0.47	(0.78)	0.55	(0.84)	−0.07[a]	(0.67)
Poverty*Charter*Hispanic	−0.24	(0.41)	0.37	(0.51)	−0.32[a]	(0.08)	0.20	(0.80)	1.47*	(0.78)	−0.06[a]	(0.64)
Poverty*Charter*Asian	−2.28[a]	(0.46)	−2.25[a]	(0.62)	0.05	(0.15)	−1.93**	(0.94)	−1.67*	(0.90)	−0.04[a]	(0.37)
Poverty*Charter*Native American	0.46	(1.09)	−0.64	(0.90)	0.29	(0.27)	−2.51**	(1.09)	−1.207	(1.29)	−0.04**	(0.39)
Nonstandard configuration	−2.45[a]	(0.60)	−4.05[a]	(0.70)	0.13**	(0.06)	−0.73	(1.65)	−2.99*	(1.69)	0.00	(0.03)
School size (100s)	−0.26**	(0.12)	−0.23	(0.15)	−0.02**	(0.01)	0.00	(0.07)	0.00	(0.08)	0.00[a]	(0.02)
Constant	42.04[a]	(0.36)	42.35[a]	(0.46)	5.47[a]	(0.10)	47.18[a]	(0.48)	48.57[a]	(0.42)	0.51[a]	(5.13)
R-squared	0.476		0.353		0.332		0.405		0.371		0.348	
Observations	1,338,512						1,239,782					
Number of districts	958						772					

[a] $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.
Note: Robust clustered standard errors in parentheses. All models include district fixed-effects. [a] Poverty is centered on the sample mean.

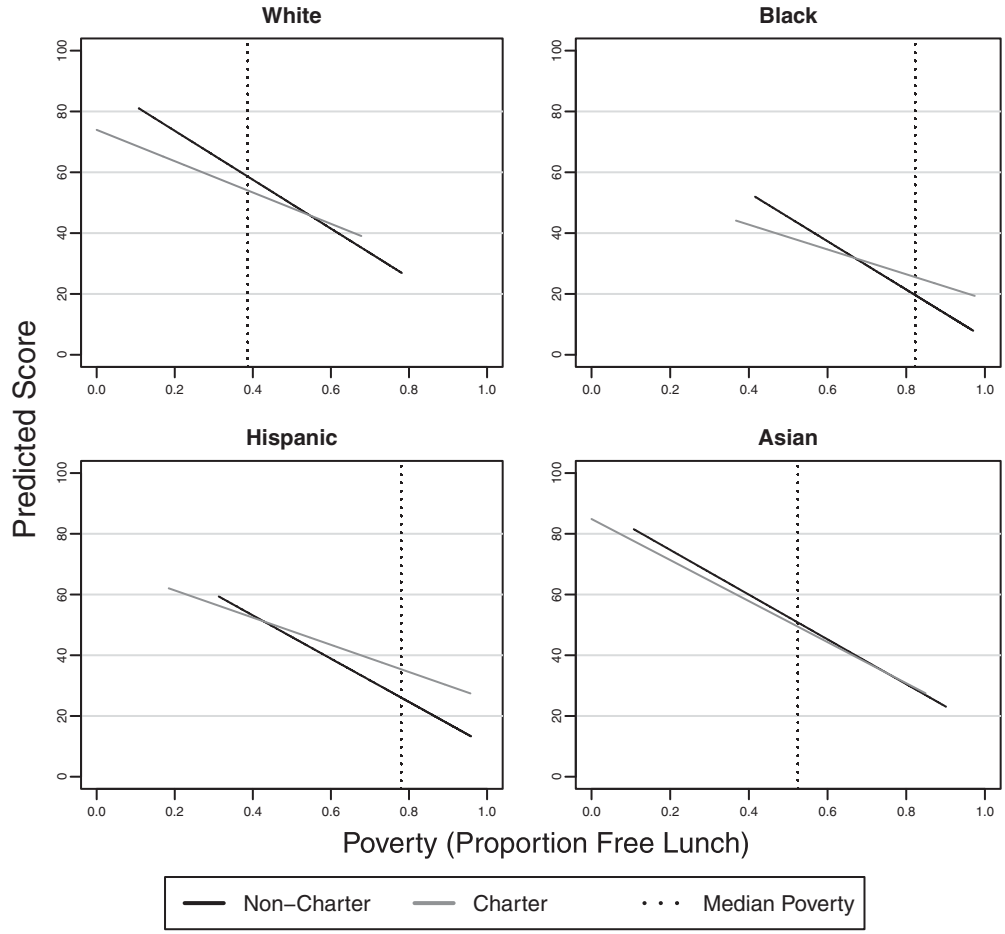

FIGURE 1

Predicted Elementary School Reading Scores By Race and Charter Status: 10th to 90th Percentiles

The figures show that poverty has a clear monotonic relation with the school-level achievement within categories of race or ethnicity and charter status. Almost invariably schools with higher poverty have lower test scores. In charter high schools this relationship is weaker than in non-charter schools or elementary schools, but it is still true. Looked at another way, however, poverty is involved in a substantial interaction effect. In every charter vs. non-charter comparison of test scores in low-poverty schools, non-charter schools do better. In almost every comparison between in high-poverty schools, charter schools do better. Because the poverty–achievement slope in charter high schools is so much more shallow, these differences are larger in high schools than in elementary schools.

Based on prior studies we did not anticipate this result or have a theoretical expectation about this interaction. The general pattern is similar for all groups. In low-poverty schools, non-charter schools have higher average scores, but the lines converge or cross at some point. Higher poverty in all cases is associated with lower scores, but the slope of that line for charter schools is flatter than for non-charter schools (this is especially apparent in high schools, not shown here). The figures help to illustrate two salient conclusions. First, as described above, white students tend to enroll in lower poverty schools. At the 10th percentile for whites the poverty share is under 10% and the median is about 40%. The black distribution is at the other extreme. The level of 40% poor is at the 10th percentile for blacks, and the 90th percentile reaches to nearly 100%. The Hispanic distribution is similar to the black distribution. Asians fall in between with a very wide range of

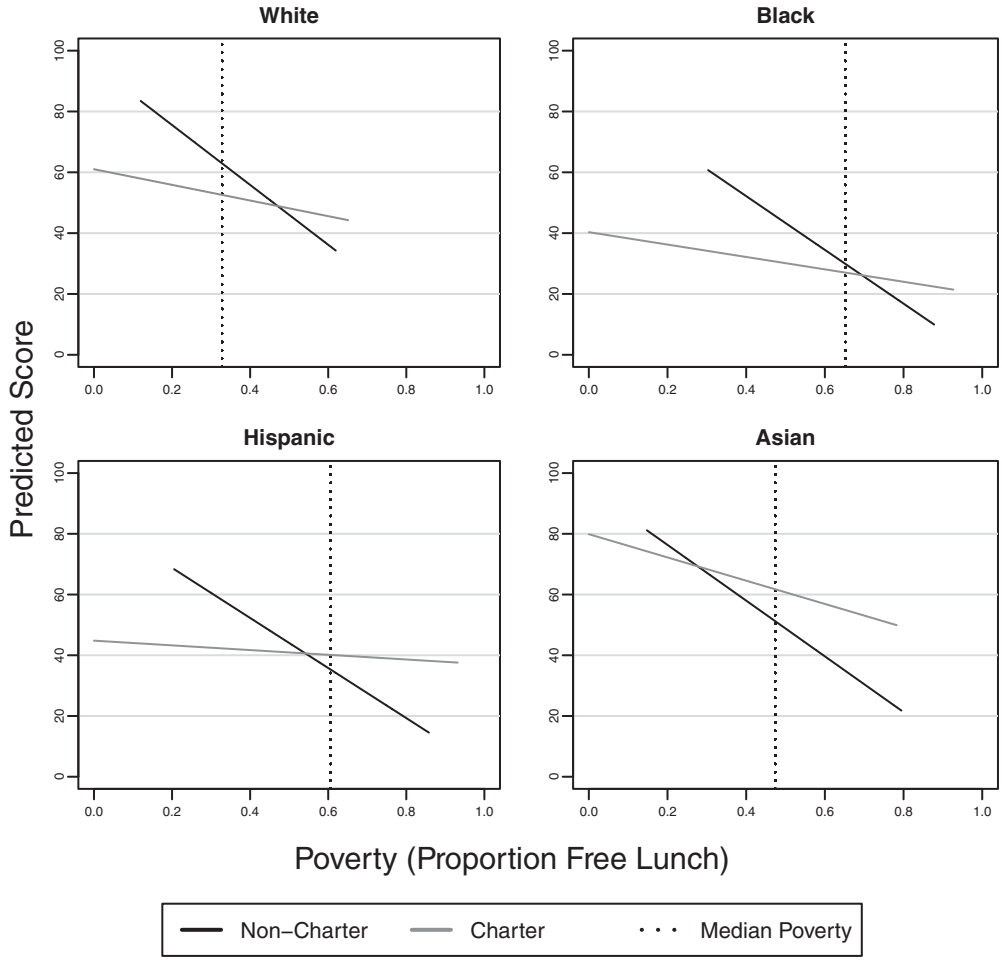

FIGURE 2

Predicted High School Reading Scores By Race and Charter Status: 10th to 90th Percentiles

poverty in their schools. Second, the lines all cross at some point, but the point at which lines for charter and non-charter schools cross varies somewhat. More relevant to understanding the charter vs. non-charter difference is where the majority of students of each race are located in the poverty distribution. Almost all white students are in schools with low enough poverty that non-charters outperform charters. But for blacks and Hispanics well over half of students are in schools that are poor enough for a charter school advantage to take effect.

The patterns of predicted racial isolation (not shown here) are not as uniform across racial groups. Whites have higher racial isolation overall compared to blacks, Asians, and Native Americans (all of the main coefficients for race are negative). This difference may seem surprising, because one generally thinks of racial isolation as a condition faced by minorities. In fact white children are very racially isolated because they attend schools that are so predominantly white. But when they are in high-poverty schools (elementary or high school), white students are less isolated (their schools have more non-white students) and their schools have greatly reduced reading and math scores. Compared to whites, black, Hispanic, and Native American children are in schools with lower test scores and lower isolation. In this sense white "isolation" indicates white "privilege"—attending a more affluent, better performing, and (perhaps not coincidentally) whiter school. This same relationship is found in both charter and non-charter schools.

The black*charter interaction shows that black students in both elementary and high schools are more racially isolated in charter schools than in non-charter schools regardless of their poverty level. Native Americans are also more isolated in charter schools, but as noted earlier there are very few Native Americans in charter schools. In contrast, Asians in charter high schools are significantly less isolated than in non-charter schools, but again this may be because there are very few Asians in charter schools in general.

DISCUSSION AND CONCLUSION

This is a study about the schools attended by children of different racial and ethnic backgrounds. The multivariate models are multilevel: students' own race or ethnicity is an individual-level predictor, and other school characteristics (such as poverty level and charter/non-charter status) are group-level predictors. Individual students' own test performance is not measured here, and no direct inference is made about whether attending a charter or non-charter school affects the student's performance. It is a study of school quality to the degree that attending a school with a lower poverty concentration, a more diverse mix of students of different race and ethnicity, and where fellow students perform better on standardized tests can be considered advantages.

The strongest and most consistent findings here are about the disparities in schools attended by children of different racial and ethnic backgrounds. Progress toward desegregating schools in the 1970s is now four decades in the past, and it is important now to be aware that the high remaining levels of segregation also place black, Hispanic, and Native American children in the most disadvantaged schools. Their schools, charter or non-charter, are poorer, more racially homogeneous, and lower performing on standardized tests than those attended by white and Asian students. The overall differences are striking. Even in our multivariate models with district fixed effects—meaning that differences are assessed only within the same district—significant racial and ethnic differences remain. And of course our control variables are set equal only in the statistical model. In fact, relatively few white and Asian children are enrolled in very high-poverty schools, and few black, Hispanic, and Native American children are found in low-poverty schools. So race and poverty combine to produce large disparities in the performance of schools attended by children with different backgrounds.

This analysis has broken new ground in showing how the option of attending a charter school affects children's choice set. This is our main purpose. Charter enrollment has expanded greatly in the last decade, and it is becoming possible now to gain a better sense of their profile—where they are, who enrolls in them, and how they compare to non-charter schools. As much as scholars are drawn to the question of whether charters do a better job of teaching, it is also important to understand how their presence affects school choice. Simply put, are students who actually attend charter schools in more or less racially isolated, more or less poverty-concentrated, and better or worse performing institutions? By selecting only districts that include a charter school and by including district fixed effects in our multivariate model, we are able to answer these questions from the perspective of the parent who wants to evaluate her choice. What position is the average white or minority parent in? Our key result is that *charter schools mean different things in different contexts and for different types of students*.

First, we found that charter schools exist in distinct locations. They are more likely to be located in urban districts with high proportions of minority students but lower poverty. They are also more likely to be located in Southern states. It would be misleading to compare charter schools to all other non-charter schools. Second, poverty is significantly lower in the charter schools attended by white children, especially in comparison with the charter schools attended by elementary black children and Hispanic high school students. Third, there is greater racial isolation in charter schools than in non-charter schools in the same district. This effect is found for white children (represented by the main effect of charter status in Table 5), but even more for elementary black and Native American students (represented by the race*charter interactions). In a period when progress toward desegregating schools has been stopped for the last three decades, any development that may push segregation noticeably in the other direction should be closely watched and compared with its potential for positive impacts in other dimensions.

For many readers the most salient question is school performance. Controlling for other factors, does the charter school represent a higher performing alternative? For white and Hispanic students overall, it is no better than non-charter schools, except that it is actually considerably worse in terms of high school math performance. For blacks and Native Americans, the charter option is considerably worse, especially at the high school level. Only for Asians is there a more positive result. For them (taking into account both the charter main effect and the Asian*charter interaction) there is no net difference at the elementary level, but charter high schools are substantially higher performing in both math and reading. This is a result of a combination of factors, both in what districts Asian children have a charter option and in which charter and non-charter schools they actually enroll.

An unexpected result is that the relation between charter status and performance depends strongly on the school poverty context. A charter school can be the better choice among high-poverty schools, and this is the usual situation for black, Hispanic, and Native American children. Yet attending a charter school is associated with going to a lower performing school in low-poverty areas, and this is the usual situation for white students. Understanding this complexity is a new question for studies of educational inequality.

There are two likely explanations for this observed pattern. With our study design we are unable to distinguish them. One is that there could actually be something about the organization or functioning of charter schools that is educationally more effective in high-poverty areas or for poor children, but that these distinctive features do not work well in low-poverty environments. A weakness of this type of explanation is that we have no idea what makes the difference.

An alternative explanation would emphasize selection mechanisms. We have demonstrated that there is much selectivity to take into account in studying charter schools, selectivity in which districts have charters as well as differences in race and class composition between charters and non-charters. There is likely also selectivity in which parents choose a charter school and for what reasons. We suspect that in high-poverty areas, it is the most ambitious and motivated parents who will be aware of and able to navigate enrollment in charters. These parents will understand that schools in their district are underperforming and their intention will be to find a feasible alternative. Without the financial resources to select a private school, perhaps the charter school is the fallback choice. In contrast, in lower poverty areas, parents who are dissatisfied with traditional public schools are more likely to have a private school option. Since the traditional public schools generally have higher performance in such areas, their concern about the fit of their child to the school may not hinge as much on academic performance *per se* as on other features (concerns about discipline and peer groups or interest in specialized curricula). If so, selective recruitment into charter schools may not place the best test takers in those schools. To understand the causal processes underlying our results would require both longitudinal data and information about parents that is not available from standard sources.

Finally we emphasize that in the extreme case—in very high-poverty schools attended by black or Hispanic students, where charters have the greatest edge over non-charters—the difference is at most around 10 points. For example an average fourth-grade black student at the 90th percentile of poverty for black students (approximately 95% free or reduced price lunch–eligible in the school, the farthest point shown in Figure 1) has predicted test scores in a traditional public school at the 10th percentile. A black student in a charter school with similar poverty levels would be around the 20th percentile. For Hispanics the corresponding rankings would be around the 18th vs. the 30th percentile. At the median levels of poverty for each group, these differences are smaller.

A 10-point difference certainly can be important. Yet, compared to the differences in exposure to poverty and school level test scores across racial groups, these charter and non-charter differences are small. Perhaps the most striking difference from the figures and model results is the almost complete lack of overlap between the school quality and poverty levels experienced by white and black elementary school students in these districts. Almost all white students attend schools in the lower three quarters of the poverty distribution and the top half of the achievement distribution in their state, while almost all black students attend a school in the top half of the poverty distribution and the lower half of the achievement distribution. In fact, the 10th percentile of black students' school poverty barely reaches the median poverty level experienced by white students (approximately 40%).

To some degree, charter schools appear to offer better options among high-poverty minority schools and worse options for low-poverty white students, but these differences are small compared to the overall racial disparities in access to quality educational opportunities.

From the perspective of educational policy, these results underline the continuing substantial disparities in opportunities available to students of different racial or ethnic background. In comparison our findings have few implications for the debates over charter schools. We found no evidence that charters are inherently better or worse educators. Our view is that most of the differences that we found are probably explained by parental selection—after all, what charters evidently do is to expand parents' range of choice. And if selection is the main driver of the results, the most important finding here is that selection operates differently in rich and poor areas. This means that policy evaluation of charter schools should also be context-dependent. If selection accounts for the lower test scores of charters in more affluent areas, then those lower test scores don't mean that charters are failing. More attention should be given to the reasons parents choose these schools and whether they meet other needs. To the extent that parental selection underlies the better performance of charter schools in high-poverty areas, by the same token, that doesn't mean charters are better. They may offer a partial solution for some children, but possibly at the cost of undermining the neighboring non-charter schools. Policy should be guided by better knowledge of how each school fits into a system of schools and whose needs are being served by that system.

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ENDNOTE

1 A complication in using these scores is that in many cases NCES reported a score range (sometimes a range as large as 15 or 20 percentage points) rather than a specific score. For each reported range we determined the average score among schools in the nation with reported specific scores in that range. A control variable for the original range for each school is not statistically significant and does not change the results of the models. There are other ways to assess relative ranking within a state. We then use the imputed precise scores to calculate a percentile within each state. Compared to percentiles, the alternative of using *z*-scores (standardizing by the mean and standard deviation within the state) would tend to reduce differences between schools with similar scores near the middle of the distribution and accentuate the high or low values at either tail. It is likely that our approach is therefore somewhat conservative in measuring the disparities across groups, since whites/Asians and other groups tend to lie at opposite ends of the distribution. One disadvantage of using *z*-scores is that school test scores are not normally distributed. For example, for fourth-grade reading in Texas, the state with the largest sample of elementary schools, scores have a significant negative skew. However, choice of statistic is unlikely to have much effect on the results: the correlation between *z*-scores and percentiles in this case is .935.

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