Quality above All Else? Examining Whites' School Choice Decisions

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Abstract

The number of educational options available to families has grown substantially over the past 25 years, and this proliferation of school choice options raises important questions about how parents select schools for their children, and what effect these choices have on school segregation. Are Whites' school choice decisions racially motivated, or do they reflect a desire to avoid low-performing schools, many of which are majority poor and non-White? I use a conjoint survey experiment to test between the racial proxy and pure race hypotheses. I find that Whites are less likely to choose the hypothetical school for their child as the percent of Black students enrolled in the school increases, net of many indicators of school quality and other characteristics parents likely weigh in their search for schools (e.g., distance from home).

Introduction

Nearly 65 years have passed since the Supreme Court issued the *Brown v. Board of Education* ruling, yet segregation remains troublingly high in K-12 schools in the U.S. Scholars agree that, due to efforts such as busing, segregation declined significantly throughout the 1970s and reached its nadir in the 1980s. Although there is some debate regarding its trajectory since the 1990s (Logan and Oakley 2004; Orfield and Lee 2007), there is general consensus that by all measures, segregation remains high and continues to create schools that are not only separate, but vastly unequal in terms of both their quality and educational outcomes (Logan, Minca, and Adar 2012).

Beginning in the 1990s, a series of Supreme Court cases ruled that desegregation mandates – such as busing and racial quotas – were never intended to be permanent, and as a result, many districts across the nation were declared "unified" and released from court oversight (see *Board of Education v. Dowell,* 1991). Recent work has examined districts that were at one point under court order to desegregate and has found that, upon release, these districts

subsequently experienced increases in school segregation (Reardon et al. 2012). The widespread return to using geographically defined attendance boundaries has combined with entrenched residential segregation to produce segregated schools. Additionally, a recent Supreme Court ruling (*Parents Involved* [2007]) has limited the ability of school districts to formally use race to assign students to schools to achieve racial balance.

In addition to these structural factors, however, individual preferences for certain residential and schooling environments ultimately shape larger patterns of segregation, and in the wake of exponential school choice expansion, examining the characteristics on which parents select schools for their children, and whether these choices result in segregating outcomes, is important for understanding why school segregation persists. School choice has emerged as a popular policy reform because of its promises to deliver high-quality educational options to families and its potential to promote racial integration in an era when districts have a limited ability to do so. A free-market reform, school choice introduces competition into the educational "marketplace" by giving parents multiple school options beyond their neighborhood public school. It is contended that poorly performing public schools will then be incentivized to improve, lest they lose enough unsatisfied families and are forced to close. In this way, it has been argued that competition can foster innovation in otherwise stagnant and underperforming public schools and the overall quality of education available to families will increase. Moreover, proponents of school choice posit that it can promote integration since it is intended to be disproportionately used by families who are zoned to poorly performing public schools, which often have high levels of poverty and racial segregation (Archbald 2004). By giving families zoned to these schools the opportunity to choose a better school outside the bounds of their neighborhood and into ones that are higher performing, which are often Whiter and more

affluent (Reardon, Kalogrides, and Shores 2017), they will be contributing to the overall integration of the school system (Archbald 2004).

Although school choice was intended to decrease segregation in public schools, its expansion has generally had the opposite effect. Empirical work that compares the racial and economic composition of catchment areas to their local schools finds that the local schools are often *more* segregated than the catchment area they are in. Moreover, White families and wealthier families are among those who disproportionately opt out of their assigned public schools, and they do so with higher frequency as the proportion minority in the catchment area increases (Saporito and Sohoni 2006, 2007). What remains unclear, however, is whether this opting out is a reaction to the racial composition of the school in and of itself, or if they are opting out due to concerns about the quality of the school. Given the strong association between school racial composition and academic performance, it is possible that what appears to be "White flight" could be explained by a desire to avoid low-performing schools. In this paper, I test between the "racial proxy" and "pure race" hypotheses (Billingham and Hunt 2016; Krysan et al. 2009) to determine whether racial composition will have an independent effect on Whites' enrollment decisions, even after accounting for characteristics that are correlated with race, such as test scores, AP course offerings, school safety, school poverty status, and teacher quality, in addition to other characteristics that parents likely consider in their search for schools, such as distance from home.

Prior Research on Parents' School Preferences

A large body of literature has examined parents' stated preferences for schools and has found that parents' desired qualities vary by their racial and class backgrounds. However, in survey research, much of the variation across studies likely comes from differences in

measurement (ex., asking parents to rate their preferences on a Likert scale versus asking them to rank their preferences), the population interviewed (ex., choosers versus non-choosers), and the specific school qualities they are asked about. In a sample of 704 respondents from the 1991 Detroit Area Study, parents were asked to rank the importance of seven measures of school quality (Lee, Croninger, and Smith 1996). The authors found that these parents valued the same school characteristics, with the exception of three: Detroit (city) residents, who had significantly lower levels of education and household incomes than the suburban Detroiters, rated school safety and discipline as more important than did the Detroit-area (suburban) residents. Additionally, the Detroit-area residents rated "the school offers a wide variety of courses" option higher than did Detroit residents, but both groups of parents ranked "The children's parents have educational and occupational backgrounds similar to mine" as least important. Similarly, in interviews with 1,600 parents who lived within four school districts in the New York metropolitan area, Schneider et al. (1998) found that parents with the lowest levels of education were most likely to say that discipline was important to them when choosing a school. Black parents and parents with a high school degree (but without any college education) were most likely to say that test scores were important to them. This finding echoes more recent work which found that among low-income families in Mobile, AL, safety and strictness, in addition to the school being close to the parents' workplace, were the qualities parents considered when choosing a school (Rhodes and DeLuca 2014). In his interviews with parents in a large northeastern school district, Weininger (2014) found considerable variation among middle- and upper-middle class parents' reliance on test score data: some rejected their importance, others consulted them constantly as they weeded out schools, and others combined the test score data with information from their family and friends. Blacks in the same income categories

consistently relied on them. Despite all of the working-class families having Internet access, none consulted test scores or other performance data in their search.

In their study of 1,006 charter households in Texas, Weiher and Tedin (2002) found the opposite: whites said that test scores were the most important, blacks said moral values, and Hispanics said discipline. Similar to the finding from Schneider et al. (1998), as parents' education levels increased, the importance they gave discipline decreased. In a survey of 1,100 parents of children who attended charter schools, Kleitz et al. (2000) found that educational quality, broadly defined ("How important was educational quality to you when you chose your child's charter school?") was equally important to whites, blacks, Hispanics, and across all income levels.

In contrast to studies of parents' stated preferences, observational studies of parents' school choice decisions are potentially more reliable indicators of the qualities that are most important to them, as they show the decisions they actually made. Using data from parents' choice forms in Charlotte-Mecklenburg Schools, Hastings, Kane, and Staiger (2005) found that families with higher incomes were more likely to select schools with higher test scores. Additionally, the more the family valued test scores, the more likely they were to travel outside of their neighborhood to attend a school with higher test scores. Schools with high tests scores attracted higher-income families, while the schools with lower test scores served families who valued proximity to the school, regardless of its test scores. In their study of the choice applications of families in Denver Public Schools, Denice and Gross (2016) add important nuance to this finding. While they also find that proximity was very important to the choices Black and Hispanic families made, these families were more likely to end up in lower-performing schools than Whites because high-quality educational options were not evenly

distributed throughout the city – they did not live near high-performing schools, and they did not have the ability to access them. Similarly, Rich and Jennings (2015) found that even when Chicago Public Schools introduced a new accountability system that informed parents when their school was on "probation" for having 85 percent or more of their students falling below the 50th percentile on the ITBS, students who left probation schools were most likely to enroll in another probation school than students who left non-probation schools. Although these families were aware that their children were attending low-performing schools, structural factors, such as poverty and entrenched racial segregation, prevented them from sending them to better-performing schools. Moreover, even among the families who are able to move to the suburbs to access the "package deal" of good housing and good schools, Black families often fall short of achieving their desired neighborhoods and schools. In their study of the residential and school selection processes of families in the Cleveland metro area, Rhodes and Warkentien (2017) find that Black families landed in suburbs with lower quality school districts than did Whites and often resorted to using some form of school choice, despite living in the suburbs, because they were unsatisfied with their home school. A combination of a lack of financial resources that could secure them access in the best suburbs, a lack of knowledge about the heterogeneity of school district quality in the suburbs, and a desire to be near family already in the suburbs led Black families to move to suburbs with lower quality school districts. These findings demonstrate that there are substantial structural constraints that poor and non-White families face when trying to realize their school preferences.

How Do Parents Get Information About Schools?

For the school choice marketplace to work as intended, parents must have equal access to school quality information so that they can make informed choices. Some states and school districts published their school quality information, such as test scores, prior to the passage of the No Child Left Behind Act (2001), but NCLB required all schools to publish "report cards" that detail their AYP in an effort to reduce information asymmetry and to encourage parents to hold schools accountable for their performance (Dee and Jacob 2011; Rich and Jennings 2015). School report cards are easily accessed through a Google search, which typically direct users to a state education agency's or a district's website. There, parents can compare their schools to others nearby or to others across the state. More informal outlets, such as GreatSchools.Org, gather data on test scores, graduation rates, teacher quality, and demographics and allow parents to compare school-level information to state averages.

Some studies have found that low-income families do not choose schools for academic quality, suggesting that low-income parents do not value high academic standards for their children (Carnegie Foundation 1992). Others have argued that low-income families have high barriers to gathering information, but if given reliable data on school quality, they would choose better schools for their children. Hastings and Weinstein (2008) analyzed the choice forms of families in Charlotte-Mecklenburg who attended schools that had failed AYP two years in a row. Under NCLB, families who are attending these schools have the option to transfer to a higher-performing school. In the spring of 2004, families were notified that their schools had failed AYP and were given a list of alternative schools they could attend. In July, parents received more detailed information on the test scores of their school options. The authors found that when parents were given clear information on test scores, significantly more parents zoned to low-

performing schools chose schools with higher test scores, and this behavior was strongest for the families who lived closest to high-performing schools. This finding suggests that transparent and readily available information on school quality will result in parents, regardless of economic background, to choose high-performing schools for their child. However, as suggested in this study and others (Denice and Gross 2016; Rich and Jennings 2015), structural constraints, such as not living near a high-performing school, will prevent parents from being able to send their child to that school.

In addition to official school quality data, parents' social networks are crucial sources of information about schools. Lareau (2014) found that middle-class parents – the same parents who practiced concerted cultivation in other aspects of their children's lives – were uninformed about the quality of their children's schools. Instead of aggressively and thoroughly searching for information, they relied on their friends and family members to tell them where the "good" schools were. Working-class parents also relied on their social networks to gather information, and because the middle- and working-class parents had different networks, they chose schools from different choice sets. Holme (2002) conducted interviews with 36 parents who bought their homes "for the schools." Of these parents, less than one-fourth had visited the school the new neighborhood provided them access to, and 25 of these parents had not searched for any test score data on their new schools. The information passed through these networks was anecdotal ("The horror stories I have heard of the schools over there…") and devoid of actual discussions of metrics like test scores and graduation rates. However, in their study of the decision-making process among high-income, suburban parents, Altenhofen, Berends, and White (2016) find, in contrast to Lareau (2014), that these parents *did* rely on test score data, in addition to their social networks, to make decisions. In their survey of over 500 parents, over 90 percent said that they

used both their social networks and school websites for performance data to gather information on schools.

Does School Racial Composition Matter for Choosing a School?

School choice opponents voice concern that if whites and those of higher SES are most able to choose schools, they will avoid low-status schools – those populated by racial minorities and poor families – and select into whiter and wealthier schools, thereby exacerbating the racial and economic segregation of schools. However, a key debate in this literature is whether White parents in particular are avoiding non-White students in and of themselves, or if their avoidance behavior reflects a desire to avoid low-performing schools, which tend to be poorer and have fewer White students. The racial proxy hypothesis posits that what appears to be out-group avoidance on the part of Whites can be explained by a desire to avoid characteristics that are proxies for race, such as the school's class composition or its academic performance (Billingham and Hunt 2016; Krysan et al. 2009). School characteristics such as test scores, the poverty level of the school, and teacher quality are often highly correlated with its racial composition, so if not accounted for in observational studies, what appears to be White avoidance may just be the result of Whites selecting schools on non-racial characteristics. The pure race hypothesis, in contrast, argues that racial composition in and of itself drives Whites' avoidance.

A number of observational studies of Whites' school choice decisions suggest that race matters in their decisions. In analyses of the elementary, middle, and high school catchment areas in the 22 largest school districts in the 1999-2000 and 2000-2001 school years, Saporito and Sohoni (2006) and Sohoni and Saporito (2009) found that neighborhood schools were *more* segregated than their catchment areas because whites disproportionally left to schools of choice

as the catchment area became more racially balanced. In an analysis of charter schools in over 300 school districts, Renzulli and Evans (2005) found that, even after controlling for a host of district quality measures, whites disproportionately fled to charter schools as their districts approached racial balance. In an analysis of an intra-district transfer program, Phillips, Larsen, and Hausman (2015) find that white students and economically advantaged students living in low-poverty, mostly white catchment areas were the groups least likely to participate in the program. Conversely, these same groups were *most* likely to participate in choice when they were living in racially and economically heterogeneous catchment areas. Research on parental preferences also found that, compared to their sending school, students' new schools had higher proportions of their own race (Henig 1990; Hastings et al. 2005; Weiher and Tedin 2002).

In-depth interviews with parents who are navigating the school choice process also provide insight into the importance of race in their decision making. Saporito and Lareau (1999) conducted in-depth interviews with parents of 8th-grade students who were deciding among 22 magnet high schools in Philadelphia. After eliminating the "black schools," or schools where over 90 percent of the student body was black, white parents began combing over the school quality data of the remaining schools in their narrowed choice set. Because there was a significant presence of poor whites in the district, white parents chose worse schools – those with higher poverty, more crime, and lower test scores – than if they had they considered the majority black schools. In interviews with 75 white parents in the St. Louis area, Johnson and Shapiro (2003) found race to be central to these families' construction of what the "good" neighborhoods and schools were. In none of the interviews did parents mention having consulted actual data, beyond anecdotes from friends and family, to justify these assumptions.

In contrast to studies of Whites' actual enrollment decisions or in-depth interviews with parents, findings from close-ended surveys suggest that race does not matter to Whites. Schneider et al. (1998) asked parents two questions regarding the racial composition of the school in question: first, parents were asked how important it was to them that their child attend a school populated "mostly" by students of the same race as their child. Second, they were asked how important it was to them that their child attend a racially and economically diverse school. Less than 1 percent of the parents said that it was important to them that the school match the race of their child, so it was dropped from the analysis. Instead, almost 10 percent of parents ranked diversity as the first or second attribute that made a school a "good school." The White and most highly educated parents were among those that said diversity was most important to them. However, as noted by a number of scholars (Pager and Shepherd 2008; Quillian 2006), traditional survey methods have become less effective at measuring racial attitudes and preferences due to the significant social desirability bias they introduce in the era of colorblind racism (Bonilla-Silva 2003).

As an alternative to surveys, Schneider and Buckley (2002) analyzed parents' use of DCSchoolSearch.com, a website that provided school quality information on all schools in the district, and found large gaps between what parents said they valued and what their school searching behavior suggested. Parents viewed information on teacher quality much less than previous survey data would suggest, and highly educated parents viewed information on student demographics significantly more often than less-educated parents. In their study of the school preferences of families in Denver Public Schools, Denice and Gross (2016) find that, even when controlling for measures of academic achievement and other characteristics, such as distance

from home, the predicted probability that a White parent applies to a school peaks at schools that are 50 percent Hispanic or Black, but drops at subsequently higher levels.

Additionally, in a recent factorial survey experiment, Billingham and Hunt (2016) find that net of a school's test scores, safety, and building conditions, as the percent Black in the school increases, White parents' likelihood of saying they would enroll their child in the school declines. These findings suggest that race continues to be central to white and highly educated parents' decisions around school selection. In this paper, I build upon this work by using a conjoint experimental design and including additional measures of school characteristics that parents are likely to consider in their search for schools. In contrast to factorial experiments, the conjoint leverages substantial within-person variation: the same respondents are asked to evaluate multiple pairs of schools whose qualities have all been randomized. By design, it allows me to include more characteristics than I could manipulate in a factorial design.

My research questions are:

Research question 1: Does a school's racial composition influence Whites' school choice decisions *independently of* other correlated characteristics?

Research question 2: Is there a threshold of racial composition at which Whites' will say they will no longer enroll in the school?

Data and Methods

I fielded the survey on Amazon's Mechanical Turk in January 2019. My final dataset included 476 respondents of various races. However, because requesters are not allowed to select on racial characteristics, I removed all non-White respondents, yielding a final analytic sample of 365 respondents, almost 60 percent of whom were parents. Each respondent rated 10 schools,

generating a total of 3,650 observations. Because each respondent rated multiple pairs of profiles, all models use clustered standard errors.

The introduction to the survey asked respondents to imagine that they were searching for high schools for their child. All respondents were shown five pairs of hypothetical schools (ten schools in total) whose qualities and characteristics were randomly varied (see Table 1 in Appendix A for all profile attributes and attribute values). These attributes were selected based on the literature about what parents want from schools (Altenhofen et al. 2016; Schneider and Buckley 2002; Schneider et al. 1998). For each pair, respondents were asked to choose one school that they would prefer their child attend, and two additional questions asked them to rate each school on a 1-7 scale, with 1 indicating that it was very unlikely they would choose the school and 7 indicating that it was very likely they would choose the school. Appendix A displays the first high school profile pair. After responding to the three questions regarding Schools 1 and 2, respondents were presented with the second profile pair and asked to evaluate Schools 3 and 4 by once again answering the forced choice and ratings questions. Respondents then repeated this process for Schools 5 and 6; Schools 7 and 8; and Schools 9 and 10.

The conjoint design is well suited to studying respondents' school choice preferences for three key reasons. First, the emergence of colorblind racism as the dominant racial ideology in the U.S. has made it difficult to measure racial preferences and attitudes (Bonilla-Silva 2003; Pager and Shepherd 2008; Quillian 2006) since respondents, and Whites in particular, if directly asked about their racial preferences, are likely to say that race does not matter to them. The conjoint design considerably minimizes this social desirability bias by showing respondents multiple attributes at once and thereby allowing them to justify their preferences with non-racial reasons. Second, choosing a school is a complex, multifaceted, and multistage process (Saporito

and Lareau 1999). The approach of the current study is to evaluate parents' choices early on in their search for schools, when they are likely to search school websites, such as GreatSchools.Org, before narrowing down their choice set and using other resources, such as their social networks, or visiting the school in person, to vet schools (Lareau 2014; Weininger 2014). This study is designed to mimic both the information and the format in which parents would see the information on school search websites. Finally, in the school selection process, parents have to consider multiple school characteristics at once, and because an optimal choice on all attributes is rarely available, parents have to make trade-offs and prioritize what matters most to them. Unlike a factorial experiment, which only allows for the manipulation of a few characteristics at a time, the conjoint allows for the manipulation of many attributes all at once, thereby mimicking the complex nature of school selection, forcing respondents to make trade-offs, and increasing external validity.

I use both OLS and logistic regression models to estimate the effect of the percent Black on Whites' likelihood of choosing the school and their ratings of the school. Importantly, results are not contingent on the model used (Hainmueller, Hopkins, and Yamamoto 2014), and the effect of any attribute can be interpreted as the difference in the means of two attributes, holding all other attributes in the model constant. Three assumptions have to be met in order to make causal claims. First, past choices and past evaluations of profiles cannot influence future choices. If respondents see information in the first profile pair that they do not understand and gather information about how to evaluate the school on a particular attribute as they continue with the survey, the results could be biased by profile order effects. For example, I include the maximum value a student could score on the SAT in the attribute description to give respondents a metric on which to objectively evaluate the schools and to avoid them using later profiles to infer what

is a high or a low score. Second, the attributes must be fully randomized, and I make no restrictions on what attributes can appear together. Although this will result in some schools having what may be unlikely combinations of characteristics (for example, a school with high SAT scores but significant discipline problems), these combinations of characteristics are not impossible. Moreover, the potential for uncommon attribute combinations is precisely what allows me to estimate the separate effects of various attributes. Racial composition and school outcomes are often assumed to be highly correlated (and often are), but not all majority minority schools are of low quality. The conjoint allows me to test whether racial composition matters to Whites' enrollment decisions independently of attributes like its test scores or AP course offerings. Finally, the order in which attributes are presented to respondents (ex., "Student diversity" followed by "Total enrollment") cannot affect respondents' evaluations of the profiles. In order to minimize cognitive burden but address the concern about row order effects, following Schachter (2016), I keep the row order consistent within respondents but randomly vary it across respondents.[1]

Independent Variables

School racial composition is a continuous variable ranging from 0 percent Black to 70 percent Black. The percent Asian and Hispanic in the school were fixed at 10 and 20 percent, respectively, to reflect the growing diversity of the school-age population in the U.S. Measures of academic quality include the percent of students scoring below the state average on all subject

[1] I tested for profile- and row-order effects (by interacting profile order and row order with each attribute), and there was some evidence for profile and row order effects. I controlled for profile and row order in alternative models, and the effect size of racial composition diminished slightly but was still significant at the same levels presented in the results. Because my sample size is so small, it is unclear whether this is just noise, so I present the models without controls for profile and row order. The results of these tests for ordering effects and the alternative model specifications are available upon request.

tests, the school's Advanced Placement (AP) course offerings, and the school's average SAT score. Other measures that are often related to academic achievement were included, including total school enrollment, the number of students per teacher, the percent of teachers with three or more years of experience, and the percent of low-income students. Additionally, I included two measures – school safety and distance from home – that parents are likely to consider when deciding between schools. Table 1 in Appendix A details all profile attributes and attribute values.

Dependent Variables

I measure respondents' likelihood of choosing the school with two questions. The first question – "If you had to choose between these two schools, which school would you choose for your child?" asked respondents to make a forced choice between the two schools that appeared in the profile pair. The second question – "On a scale from 1 to 7, where 1 indicates that it is extremely UNLIKELY you would choose the school and 7 indicates that it is extremely LIKELY you would choose the school, how would you rate School 1?" - was asked for each school the respondent viewed. The forced choice question was estimated using logistic regression, and the ratings question was estimated using OLS regression.

Results

Table 2 displays the demographic characteristics of the White respondents. Almost 60 percent of the sample (59.73 percent) were parents, and among those who were parents, approximately 83 percent had children who were 17 years old or younger. Over 50 percent

(53.71) had a bachelor's degree or higher. Approximately 60 percent (61.92) of the sample had an annual household income between $30,000 and $89,000.

Table 3 displays the main results. The racial proxy hypothesis would be supported if the coefficient for student diversity is not significant in predicting both Whites' selection of the school and their ratings of the schools after accounting for all variables that are correlated with racial composition. Conversely, the pure race hypothesis would be supported if, even after accounting for the racial proxy variables, student diversity is significant. Model 1 reports the results from the logistic regression model. Many of the racial proxy variables were significant. School safety, AP course offerings, SAT scores, state test scores, and students per teacher were among the variables with the largest statistically significant effect sizes. Results indicate that respondents were concerned about academic quality and in part selected schools based on these indicators. Respondents' odds of choosing the school increased by 77 percent ($e^{.569} = 1.766$) when the school had "many" AP courses compared when schools had no AP courses (the reference category, $p<.001$), and their odds of choosing the school decreased by 58.8 percent ($e^{-.885} = .412$) when the school had 70 percent of their students scoring below the state average on state exams compared to when it had only 10 percent scoring below the state average (the reference category, $p<.001$). Respondents were also concerned about how far the school was from their home. Respondents' odds of selecting the school declined by 41.3 percent ($e^{-.532} = .587$) when the school was "very far" from their home compared to when it was "very close" to their home (the reference category, $p<.001$). Additionally, while respondents were concerned about school safety, they were less concerned about the poverty levels in the school. Respondents' odds of choosing the school decreased by 26.7 percent ($e^{-.310} = .733$) when the school was 95 percent low-income compared to when the school was only 5 percent low income

(the reference category, p<.05), but their odds of choosing the school decreased by 62.5 percent ($e^{-.980} = .375$) when the school had a "significant" discipline problem compared to when it had no discipline problems (the reference category, p<.001). No value for percent low income was significant except 95 percent, indicating that it was only at very high levels of poverty that respondents were deterred by the class composition of the school. Lending support to the pure race hypothesis, student diversity is significant even after accounting for the racial proxy and other related variables that parents likely take into account when choosing a school (such as distance from home). For every percentage-point increase in percent Black in the school, respondents' odds of choosing the school declined by .8 percent ($e^{-.008} = .992$, p<.001). For every rank-order increase in percent Black (seen in 5-percentage point increments by respondents), their odds of choosing the school declined by 4 percent (.8*5).

Model 2 reports the results from the OLS regression for the school ratings. Generally speaking, school safety, AP course offerings, student-teacher ratios, and test scores were among the most important racial proxy characteristics to respondents. The school's total enrollment was not significant across any condition, and teacher experience (a proxy for teacher quality) was only significant (p<.05) at very high levels (90 percent of teachers with three or more years of experience). Schools with moderate discipline problems were rated .39 points lower than schools with no discipline problems (p<.001), and schools with significant discipline problems were rated .85 points lower than schools with no discipline problems (p<.001). These findings suggest that parents are very much concerned with the safety of the school. Similar to the results of the logit model, none of the coefficients for total enrollment were statistically significant. The class composition of the student body had some effects on Whites' school ratings, though only at higher levels of poverty: compared to schools with only 5 percent of students on free or reduced-

price lunch, schools with 75 percent of students on FRPL were rated .23 points lower ($p<.05$). However, schools with 95 percent of students on FRPL were rated .39 points lower than schools with only 5 percent of students on FRPL ($p<.001$). In terms of academic quality, SAT scores, AP course offerings, student-teacher ratios, and scores on state exams were very strong predictors of school ratings, in addition to distance from home. As the school's distance from home increased, Whites' ratings of it declined. Similarly, as the number of students per teacher increased, Whites' ratings of the school declined. The same inverse relationship was seen for state test scores – as more students scored below the state average, Whites rated them lower. Conversely, as the number of AP courses offered or the school's average SAT scores increased, Whites' ratings of the school increased. Teacher experience, operationalized as those with three or more years of experience, was largely unimportant to respondents, with the exception of high proportions of those with substantial experience – schools with 90 percent of teachers with three or more years of experience were rated .25 points higher than schools with 10 percent of teachers with three or more years of experience ($p<.05$). However, even when controlling for all of these racial proxy attributes, the percent Black enrolled in the school had a negative effect on Whites' ratings of the school. For every one-percent increase in the percent Black enrolled in the school, Whites rated the school about .006 points lower ($p<.001$). For every rank-order increase in percent Black (5 percentage-point increments), Whites rated the schools about .03 (-.006*5) points lower.

Figures 1 and 2 present the predicted margins for both respondents' likelihood of choosing the school and their school ratings, respectively. In Figure 1, the solid lines surrounding the point estimates indicate 95 percent confidence intervals. Profiles with confidence intervals above the dashed line were significantly more likely to be chosen, while profiles with confidence intervals below the dashed line were significantly less likely to be chosen. Schools that are 0-10

percent Black were most likely to be chosen and were rated most highly, but thereafter, the likelihood of choosing the school declined, and they were also rated lower. Together, these findings support the pure race hypothesis.

Discussion and Conclusion/Limitations

Almost 65 years have passed since *Brown v. Board* dismantled legal racial segregation in public schools in the U.S., but in the 21st century, schools are stubbornly segregated. Structural factors – such as housing segregation by race and income, particularly among families with children (Owens 2016); the inability of districts to bus across neighboring district lines (see *Milliken v. Bradley*, 1974); the rollback of desegregation policies; and districts' limited ability to assign students within districts to school using racial criteria (see *Parents Involved*, 2007) have made it so that school districts have little ability to disrupt the relationship between schools and housing. These factors, combined with the growth of school choice, have generally exacerbated school segregation. Moreover, the findings of this study indicate that in addition to structural factors, Whites' preferences for schools with few to moderate levels of Black students is a potential cause of persistent school segregation. Although findings from observational studies have provided very suggestive evidence that Whites sort their children into schools based on its racial composition (Denice and Gross 2016; Renzulli and Evans 2005; Saporito and Sohoni 2006; Sohoni and Saporito 2009), the potential for omitted variables is high and prevents causal inference. In an experimental setting, however, I am able to tease out the relative influence of school racial composition *net of* its many correlated characteristics. I find that the racial composition of the school *in and of itself*, net of its quality or other characteristics (such as distance from home), are important to Whites when choosing among schools to which to send

their children. This finding confirms Billingham and Hunt's (2016) study (although my effect size is slightly smaller) and indicates that racial preferences for Whiter schools play a central role in Whites' school selection.

A number of limitations warrant further discussion. First, my study uses a small sample of respondents from Amazon's Mechanical Turk and is not representative of White parents of school-age children in the U.S. This study was intended as a pilot test, and for future iterations of this project, I am working to secure funding to purchase a representative sample of White parents from an established polling firm. Future work would also benefit from sampling parents of other racial groups to understand whether these racial preferences are exhibited only by Whites, or if other groups also use racial composition to determine their school choices, and if so, what racial groups increase or decrease their willingness to use the school. For example, future work should examine whether higher percentages of certain racial groups – such as Asians – increase the likelihood of enrollment, while others – such as Hispanics – might decrease the likelihood of enrollment, at least for Whites. Additionally, since I kept percent Asian and percent Hispanic constant at 10 and 20 percent, respectively, for each treatment condition, I was not able to estimate the effect of percent Black in a school beyond 70 percent. In future work, I plan to correct this by fixing percent Asian and Hispanic at lower levels, such as 5 and 10 percent, so that I could estimate percent Black up to 85 percent. Finally, while the school selection process is much more complex than choosing among hypothetical options in a survey, I sacrifice some external validity with the hypothetical design in order to isolate the effect of racial composition on enrollment behaviors.

Research indicates that schools play a much more important role in organizing residential segregation than the residential segregation literature has heretofore suggested, with recent

studies finding that as school choice options in central cities expand, higher SES White households are more likely to move into low-income, non-White neighborhoods (Pearman and Swain 2017). This finding suggests that, if neighborhood and school options are decoupled, families with children will be more likely to move into low-income, non-White neighborhoods, so long as they don't have to send their child to the school zoned to that neighborhood. This finding also begs the question – does the racial composition of the school matter more to families with children than the racial composition of the neighborhood? Studies of Whites' residential mobility have consistently found that Whites are more likely to move into Whiter tracts, relative to other racial groups (Pais, South, and Crowder 2012; South and Crowder 1998), but studies have rarely considered the influence of educational contexts on mobility behavior, especially for Whites with children. A fruitful area of future research would be to examine the more "upstream" causes of school segregation by studying the residential mobility decisions of families with children with data on the educational contexts of leaving and receiving tracts. Given that most school segregation is due to residential segregation and that most segregation is between school districts (Reardon and Owens 2014), understanding how families sort into these areas would shed additional light on the maintenance of school and residential segregation.

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Table 1: Profile Attributes and Attribute Values

Attributes	**Values**
Percent of students scoring below the state average on all subject tests	10%, 20%, 30%, 40%, 50%, 60%, 70%
Advanced Placement (AP) course offerings	Offers no AP courses; Offers a few AP courses; Offers many AP courses
Average SAT score (out of 1600)	750, 890, 970, 1100, 1350
Total school enrollment	About 350 students; About 500 students; About 750 students; About 1,500 students; About 2,300 students
Students per teacher	12, 17, 20, 25, 30
Safety	Does not have a discipline problem; Has a moderate discipline problem; Has a significant discipline problem
Student diversity	10% Asian, 0% Black, 20% Hispanic, 70% White; 10% Asian, 5% Black, 20% Hispanic, 65% White; 10% Asian, 10% Black, 20% Hispanic, 60% White; 10% Asian, 15% Black, 20% Hispanic, 55% White; 10% Asian, 20% Black, 20% Hispanic, 50% White; 10% Asian, 25% Black, 20% Hispanic, 45% White; 10% Asian, 30% Black, 20% Hispanic, 40% White; 10% Asian, 35% Black, 20% Hispanic, 35% White; 10% Asian, 40% Black, 20% Hispanic, 30% White; 10% Asian, 45% Black, 20% Hispanic, 25% White; 10% Asian, 50% Black, 20% Hispanic, 20% White; 10% Asian, 55% Black, 20% Hispanic, 15% White; 10% Asian, 60% Black, 20% Hispanic, 10% White; 10% Asian, 65% Black, 20% Hispanic, 5% White; 10% Asian, 70% Black, 20% Hispanic, 0% White
Percent of low-income students	5%, 20%, 35%, 50%, 75%, 95%

Percent of teachers with 3 or more years of experience	10%, 24%, 36%, 53%, 77%, 90%
Distance from your home	Very close to your home; Close to your home; Far from your home; Very far from your home

Table 2 - Respondent Characteristics

	White Respondents (n=365)
	Percentage
Age	
18-24	3.56
25-29	23.56
30-34	24.38
35-39	13.97
40-44	12.88
45-50	9.86
51 or above	11.78
Parental status	
Has child	59.73
No child	40.27
Gender	
Male	55.49
Female	44.51
Education	
Less than HS	0.55
HS degree or equivalent	12.05
Some college	21.37
Associate	12.33
Bachelor's	41.92
Master's	9.59
Professional	1.10
Doctorate	1.10
Income	
Less than $30,000	19.73
$30,000 to $59,000	39.73
$60,000 to 89,000	22.19
$90,000 to $109,000	8.22
$110,000 to $129,000	3.56
$130,000 and above	6.03
Prefer not to say	0.27

Table 3: Average Marginal Component Effects of Chosen School and School Ratings, Coefficients and (SEs), Logistic and OLS Regression Results

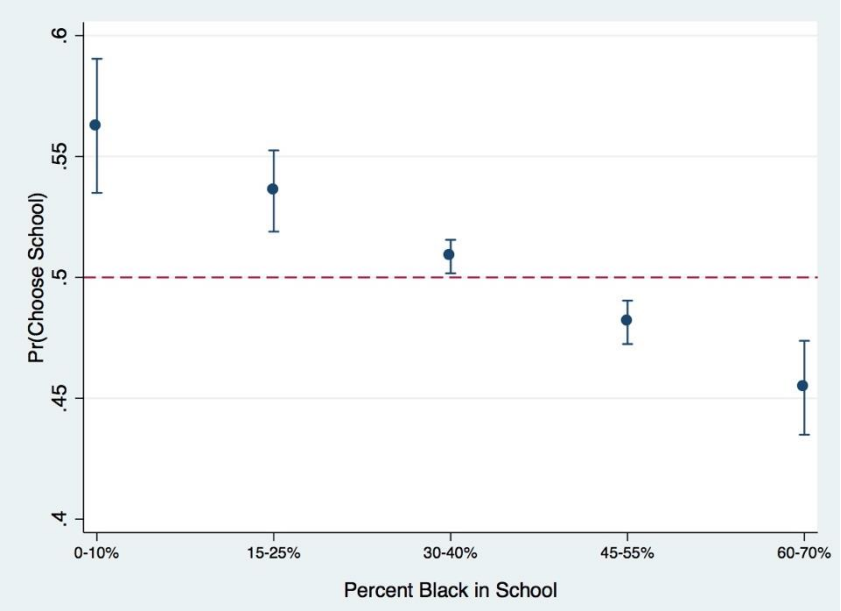
Dependent Variables	(Model 1, Logit) Choose School	(Model 2, OLS) Rate School
Safety		
No problem (ref.)		
Moderate problem	-0.301***	-0.393***
	(0.089)	(0.068)
Significant problem	-0.980***	-0.859***
	(0.103)	(0.076)
Total enrollment		
About 350 (ref.)		
About 500	0.088	0.002
	(0.112)	(0.085)
About 750	0.043	0.001
	(0.111)	(0.081)
About 1,500	0.118	0.011
	(0.111)	(0.083)
About 2,300	0.007	0.028
	(0.108)	(0.081)
% Low Income		
5 percent (ref.)		
20 percent	-0.102	-0.101
	(0.120)	(0.093)
35 percent	0.062	-0.173*
	(0.119)	(0.087)
50 percent	-0.208+	-0.141
	(0.123)	(0.096)
75 percent	-0.108	-0.234*
	(0.122)	(0.092)
95 percent	-0.310*	-0.392***
	(0.122)	(0.093)
Student diversity	-0.008***	-0.006***
	(0.002)	(0.001)
Distance from home		
Very close (ref.)		
Close	-0.247*	-0.140+
	(0.100)	(0.078)
Far	-0.498***	-0.354***
	(0.103)	(0.075)
Very far	-0.532***	-0.432***
	(0.105)	(0.084)

AP Course Offerings		
None (ref.)		
A few	0.316***	0.166*
	(0.091)	(0.069)
Many	0.569***	0.430***
	(0.091)	(0.067)
SAT Scores		
750 (ref.)		
890	0.228*	0.152+
	(0.108)	(0.088)
970	0.383***	0.225*
	(0.115)	(0.094)
1100	0.616***	0.441***
	(0.117)	(0.088)
1350	1.024***	0.766***
	(0.118)	(0.089)
% of teachers with 3 or more years of experience		
10 percent (ref.)		
24 percent	0.136	0.007
	(0.122)	(0.099)
36 percent	0.217+	0.060
	(0.116)	(0.093)
53 percent	0.320*	0.015
	(0.127)	(0.096)
77 percent	0.303*	0.083
	(0.128)	(0.100)
90 percent	0.310*	0.225*
	(0.129)	(0.095)
Students per teacher		
12 students (ref.)		
17 students	-0.021	-0.081
	(0.103)	(0.088)
20 students	-0.312**	-0.211*
	(0.114)	(0.086)
25 students	-0.452***	-0.250**
	(0.110)	(0.085)
30 students	-0.557***	-0.373***
	(0.115)	(0.081)
Percent scoring below state average		
10 percent (ref.)		
20 percent	-0.283*	-0.123
	(0.137)	(0.101)

30 percent	-0.233+	-0.020
	(0.128)	(0.096)
40 percent	-0.293*	-0.153
	(0.131)	(0.098)
50 percent	-0.643***	-0.327***
	(0.135)	(0.095)
60 percent	-0.815***	-0.290**
	(0.140)	(0.098)
70 percent	-0.885***	-0.482***
	(0.134)	(0.101)
Constant	0.836***	5.142***
	(0.203)	(0.165)
Observations	3,650	3,648
R-squared		0.114

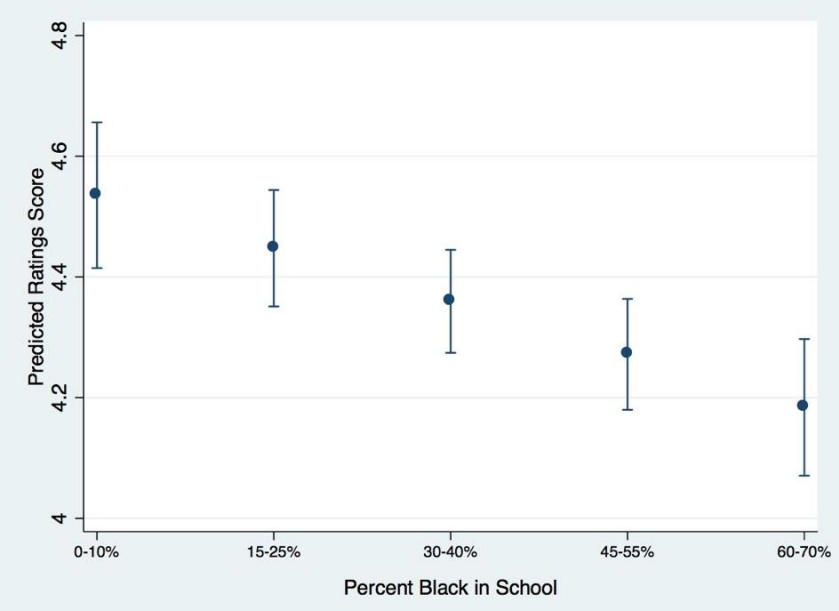
Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, + p<0.10

Figure 1: Predicted Probabilities of School Selection



Note: Based on Model 1, Table 2. The solid lines surrounding the point estimates indicate 95 percent confidence intervals. Profiles with confidence intervals above the dashed line were significantly more likely to be chosen, while profiles with confidence intervals below the dashed line were significantly less likely to be chosen.

Figure 2: Predicted Probabilities of School Ratings



Note: Based on Model 2, Table 2.

Appendix: Survey Experiment Questionnaire

The next questions will assess what qualities parents look for when choosing high schools for their children. Imagine you are a parent who is searching for a high school for your child. You will be presented with five pairs of hypothetical school profiles that describe potential school options available to you in your city. For each pair of schools, please indicate which school you would like for your child to attend. Even if you don't like either option presented, please indicate which one of the two schools you would prefer they attend. You will receive the following information about each potential school:

Percent of students scoring below the state average on all subject tests
Advanced Placement (AP) course offerings
Average SAT score (out of 1600)
Total enrollment
Students per teacher
Safety
Student diversity
Percent of low-income students
Percent of teachers with 3 or more years of experience
Distance from your home

Please click to continue with the survey.

Please carefully evaluate the school profiles shown below. Then, please indicate which of the two schools you would personally prefer that your child attend.

	School 1	**School 2**
Percent of students scoring below the state average on all subject tests	10%	20%
Advanced Placement (AP) course offerings	Offers no AP courses	Offers many AP courses
Average SAT score (out of 1600)	1300/1600	1000/1600
Total enrollment	About 350 students	About 1,500 students
Students per teacher	20	25
Safety	Has a significant discipline problem	Does not have a discipline problem
Student diversity	10% Asian, 0% Black, 20% Hispanic, 70% White	10% Asian, 40% Black, 20% Hispanic, 30% White
Percent of low-income students	75%	50%
Percent of teachers with 3 or more years of experience	10%	36%
Distance from your home	Very close to your home	Far from your home

1. If you had to choose between these two schools, which school would you choose for your child? *School 1; School 2*
2. On a scale from 1 to 7, where 1 indicates that it is extremely UNLIKELY you would choose the school and 7 indicates that it is extremely LIKELY you would choose the school, how would you rate School 1? *Response options: 1, Extremely unlikely; 2, Unlikely; 3, Somewhat unlikely; 4, Neither likely nor unlikely; 5, Somewhat likely; 6, Likely; 7, Extremely likely*
3. On a scale from 1 to 7, where 1 indicates that it is extremely UNLIKELY you would choose the school and 7 indicates that it is extremely LIKELY you would choose the school, how would you rate School 2? *Response options: 1, Extremely unlikely; 2, Unlikely; 3, Somewhat unlikely; 4, Neither likely nor unlikely; 5, Somewhat likely; 6, Likely; 7, Extremely likely*