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ABSTRACT

The belief that public schools produce better integration than private schools is deeply held by many people, but unfortunately, it is supported by little empirical evidence. A systematic look at integration is undertaken through a random sample of public and private schools in two cities. A total of 4302 students were observed, 2864 from public schools, and 1438 from private schools. Unlike previous studies of integration in schools, data are drawn from a setting in which racial mixing has greater meaning: the lunchroom. Also developed are new measures of integration that allow for easier, more meaningful comparisons between different school systems. Analyses suggest that private schools tend to offer a more racially integrated environment than do public schools. The primary explanation for private schools' success at integration is that private school attendance is not as closely attached to where a person lives as attendance at public schools. Public schools tend to replicate and reinforce racial segregation in housing. Because private schools do not require that their students live in particular neighborhoods, they can more easily overcome segregation in housing to provide integration in school. The strong religious mission and higher social class found in most private schools are also factors that contribute to better racial integration. Contains 7 tables of data, 6 notes, and 19 references. (Author/BT)

Integration Where it Counts:

A Study of Racial Integration in Public and Private School Lunchrooms

by

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Abstract

The belief that public schools produce better integration than private schools is deeply held by many people, but it is unfortunately supported by little empirical evidence. In this paper we take a systematic look at integration in a random sample of public and private schools in two cities. Unlike previous studies of integration in schools, our data are drawn from a setting in which racial mixing has greater meaning: the lunchroom. We also develop new measures of integration that allow for easier, more meaningful comparisons between different school systems. Our analyses suggest that private schools tend to offer a more racially integrated environment than do public schools. The primary explanation for private schools' success at integration is that private school attendance is not as closely attached to where one lives as attendance at public schools. Public schools tend to replicate and reinforce racial segregation in housing. Because private schools do not require that their students live in particular neighborhoods, they can more easily overcome segregation in housing to provide integration in school. The strong religious mission and higher social class found in most private schools are also factors that contribute to better racial integration.

Since Horace Mann's description of the "common school," one of the stated goals of American education has been to bring students of different backgrounds together in schools. The belief that government-operated schools would mix students better than private schools was one of the primary justifications for the development and growth of a universal system of public schools. As Secretary of Education Riley recently argued, "The 'common school' -- the concept upon which our public school system was built -- teaches children important lessons about both the commonality and diversity of American culture. These lessons are conveyed not only through what is taught in the classroom, but by the very experience of attending school with a diverse mix of students. The common school has made quality public education and hard work the open door to American success and good citizenship and the American way to achievement and freedom." (Riley, 1997, p. 1) While public control and government-operation of schools has been thought to be essential for producing integrated education, privately-run schools, based on the voluntarily association of individuals, have generally been held as not conducive to integration.

The belief that public schools produce better integration than private schools is deeply held by many people, but it is unfortunately supported by little empirical evidence. In this paper we take a systematic look at integration in a random sample of public and private schools in two cities. Unlike previous studies of integration in schools, our data are drawn from a setting in which racial mixing has greater meaning: the lunchroom. We also develop new measures of integration that allow for easier, more meaningful comparisons between different school systems. Our analyses suggest that private schools tend to offer a more racially integrated environment than do public schools. The primary explanation for private schools' success at integration is that private school attendance is not as closely attached to where one lives as attendance at public schools.

Public schools tend to replicate and reinforce racial segregation in housing. Because private schools do not require that their students live in particular neighborhoods, they can more easily overcome segregation in housing to provide integration in school. The strong religious mission and higher social class found in most private schools are also factors that contribute to better racial integration.

Defining and Measuring Integration

We care about integration in schools for a variety of reasons. As the Supreme Court observed in its 1954 *Brown v. Board of Education* decision, segregated schools raise serious concerns that the separate education received by different groups is unlikely to be equal. School policies aimed at reducing segregation, such as bussing and magnet programs, seek integration as a way to eliminate disparities in the quality of education provided to different racial and ethnic groups. But our hopes for integration go beyond avoiding segregation and unequal schools. Racial integration in schools has also been pursued to provide students with the experience of interacting with people who are different from them as an important educational goal in its own right. Our hope is that this proximity will help students learn about different kinds of people and become more tolerant of those differences.

A considerable amount of research has examined the extent to segregated schools are unequal in the quality of their academics, the extent to which mutual understanding and tolerance are promoted by integration, and the extent to which bussing, magnets and other policies have succeeded in integrating schools (Schofield 1997, Yu and Taylor 1997, Taylor and Rickel 1981, Orfield et. al 1996, Rossell 1990, Armor 1995, Oakes 1985, Hochschild 1984, Crain, Mahard, and Narot 1982). These issues are not the ones directly addressed in this paper. For our purposes we will

assume that racial integration in schools is a desirable goal. The question we address is whether public or private schools are different in their ability to achieve integration.

Unfortunately, commonly used measures of integration were developed largely to address legal disputes about whether school systems are segregated and therefore whether they could be assumed to be providing different, and unequal, educational experiences to different groups. These measures were not used to address whether schools offer a positive integrated experience for those groups. Conventional measures, such as The Index of Dissimilarity (IOD) for example, do not focus on how likely it is that students will have the ability to meet and learn from students of different racial or ethnic backgrounds. Instead, the Index of Dissimilarity simply measures how evenly groups are distributed within a school system.[1] A school system that was 98% white would receive the highest score on the IOD if every school in that system were also 98% white, simply because whites and non-whites were perfectly evenly distributed. This measure would help us address the legal question of whether the school system was segregating a group of students with a presumably inferior education. But the perfect score generated by this measure does not tell us whether students in that school system are likely to come into contact with different types of students, an experience from which they might gain mutual understanding (Rossell 1990).

Another common measure, the Index of Exposure (IOE), is designed to address this problem by calculating the average percentage of one racial or ethnic group in the same school as the average member of another group.[2] Using the example above, the IOE could be used to calculate that the average white student had 2% non-whites in the same school and the average non-white student had 98% white students in the same school. One difficulty with this measure is that the IOE changes depending on which group is the focus of examination. The IOE is 2, for example, if we want to know the exposure of whites to others, yet the same district has a score of 98 if we want to know

the exposure of non-whites to others. That is, the IOE would say that integration is lousy in this hypothetical school system if you are white and wonderful if you are non-white (Crain 1984). But what if we wanted to know how well the school system is integrated in general? Or how could we compare this school system to another one with a different racial composition, one that was 50 percent white and 50 percent non-white for example? The IOE does not adequately address these questions. It is also limited by the fact that it can only measure exposure between two groups, thus not allowing an adequate analysis of multi-ethnic integration.

Sometimes researchers present a standardized IOE as a measure of the overall integration in a school system.[3] To standardize the IOE, the racial composition of the whole school system must be taken as a given. That is, the standardized IOE could tell us an overall measure of integration for our hypothetical school system given the fact that it has 98% whites and 2% non-whites. However, standardization just reintroduces the problems of the Index of Dissimilarity. The standardized IOE would tell us that our nearly homogeneous hypothetical school system is well integrated given that it is nearly homogenous in its racial composition. But how could we meaningfully compare this overall measure of integration to another school system that had more minority students but distributed them less than perfectly evenly? The standardized IOE would tell us that integration is better in the more homogeneous system with perfectly even distribution than in the more racially heterogeneous school system with a less than perfectly even distribution. Because the standardized IOE takes the racial composition of the system as a given, it shares the IOD's defect of describing evenly distributed but racially homogenous school systems as well integrated.

These measures of integration also suffer from the problem of measuring inputs not outputs. The Index of Dissimilarity and the Index of Exposure only measure the extent to which different racial groups are in the same school building; they do not

measure the extent to which those groups are in the same classrooms, get to know each other, and learn to like each other. The former is sufficient for addressing the legal questions of whether the school system provides the same quality of education to different racial or ethnic groups, but it is inadequate for addressing the extent to which the system achieves the positive socialization of an integrated experience. The introduction of different groups of students into a school is an input; learning and mutual understanding is an output. If we want to know how well schools achieve the ideals of the common school we should have a measure of integration that more closely captures that output.

In the early 1980's, James Coleman and colleagues (1982) employed a measure similar to the Index of Dissimilarity to determine whether public or private schools were better racially integrated. Their conclusion was that private schools were better integrated because the distribution of racial groups was more even there than in public schools. Taeuber and James (1982) and Page and Keith (1981) responded that private schools should not be described as contributing to integration because they have a lower percentage of minority students, on average, than do public schools. That is, they argued that private schools may have a more even distribution of minorities, but the general lack of minority students makes them relatively racially homogenous, not integrated. In 1984, Robert Crain employed the Index of Exposure in a comparison of Catholic and public schools in Cleveland and Chicago and concluded that Catholic high schools were better racially integrated than their public school counterparts. But his study is limited by the difficulties of conventional measures, and the fact that he examined only Catholic private schools which, while a large portion of all private schools, may produce results that are atypical of the universe of private schools. More recently, Jay Greene (1998) examined a national sample of public and private school classrooms to determine which tended to be closer to the national proportion of minority students.

He concluded that private school classrooms, on average, were more representative of the national minority proportion than were public school classrooms, on average. But measuring the proportions of racial groups in classrooms is still a measure of the inputs of integration, not the output of successful racial exposure.

A New Measure of Integration

In this study we employ a new measure of integration, which we call the Index of Integration (IOI), that we believe better captures the extent of positive socialization resulting from racial integration. Quite simply, we observed school lunchrooms and recorded where students sat by race. We then calculated the percentage of students who had a student of a different racial group sitting next to them. We define sitting next to a person as sitting to the right, left, across, across and to the right, or across and to the left of the observed student. If any of those five seats was occupied by a student of a different racial group, then the observed student was coded as having an integrated lunchroom setting. From this, the percentage of students who have an integrated lunchroom setting can be calculated for an entire school system.

This Index of Integration does not focus on how evenly students are distributed in a school system nor does it adjust for the homogeneous or heterogeneous character of the system, as do the IOD and standardized IOE. For our purposes we do not want to know whether school systems evenly distribute the racial groups they have. Although if a system is racially homogenous or unevenly distributes racial groups, students will have fewer students of another race with which they can mix in the lunchroom and thus this information does weigh into the score. Our goal, however, is to determine whether students ultimately have a positive, heterogeneous racial experience. In everyday

usage, this is typically what we mean by integration. Do students have the experience of mixing with students of different backgrounds in a positive way?

Unlike the unstandardized Index of Exposure, this new measure does not generate different results depending on which racial group we choose to consider. The IOI looks at whether students sit next to students who are different, regardless of whether the student is African-American, white, Hispanic, or Asian. And the IOI is better in that it captures multi-ethnic integration more accurately by counting students in heterogeneous lunch settings regardless of which combination of racial groups produces that heterogeneity.

The Index of Integration also allows for more meaningful comparisons *between* school systems. If we want to compare integration in public and private school systems in the same area, we ought not to adjust for the racial compositions of those sectors. The racial composition of the sector is precisely what has a great influence on whether individual students are likely to have an integrated experience. To say that one school system is better integrated than another because it evenly distributes its racially homogenous population has little relationship to whether that school system actually offers a better integration experience. The IOI tells us whether students in public or private school systems in the same area are more likely to sit in racially heterogeneous groups; that tells us the system in which students are more likely to experience positive integration.

Lastly, the IOI has the advantage of more closely measuring the outcome of integration as opposed to the inputs. Schools are producing successful integration when students of different racial backgrounds are comfortable enough to sit next to each other in the informal setting of the lunchroom. Students of different backgrounds may be in the same school buildings but become re-segregated through tracking (Oakes 1985). Students of different backgrounds may even share the same classrooms, but fail to get

to know each other, learn about each other, or gain mutual respect and understanding (Gadsden, Smith, and Jordan 1996, Grant 1990). But the lunchroom is where the race-relations "rubber meets the road." We can have greater confidence that students are having a positive integrated experience if they choose to sit near each other in the lunchroom.

To be sure there are limitations to this approach to measuring integration. Collecting the data is labor intensive, involving the observation of scores of lunchrooms. Obtaining permission and scheduling visits took months in this project. Accurately identifying students' racial groups by their appearance also involves possible error. Race is a social construct, not an easily measured set of physical traits. But we have confidence that this error is minimal because the proportions of racial groups that we identified by observation matched the proportions in the data provided by schools based on self-identification of race. The Index of Integration is also sensitive to the racial categories that are considered. In this study we coded students as white, African-American, Latino, or Asian. Because race is a social construct, we could have split these categories more finely or combined some of them. We chose these categories because they are the ones around which people tend to organize themselves and therefore are considered politically relevant. Another potential weakness of the IOI is that it may cast the net too broadly by counting a student as having an integrated lunchroom setting if any one of the five students around him or her is of a different racial group. This broad definition may elevate the measure of integration for all schools, but it is unlikely to bias the comparison between school systems. In fact, the results of this study are not dependent on the particular way we have defined an integrated lunchroom setting; the race of the student or students to the right or across from the observed student could have been used instead with the same results. While any measure of integration will have some shortcomings, the one used in this study appears well suited

to capturing the comparative extent to which public and private schools in the same area produce a positive integrated experience for their students.

The Sample

A randomly drawn sample of public and private schools in two cities provided subjects for this study. (The identity of the two cities is being kept confidential until reports can be prepared and reviewed by the public school officials in those cities.) In each city ten public schools were drawn from a universe of all public schools in those cities. Also in each city ten private schools were drawn from a universe of all private schools in those cities. The universe of private schools was identified by compiling a list from phone books and the Catholic Archdiocese. Data ultimately were collected from 38 (19 public and 19 private) schools due to difficulty gaining permission to observe the lunchroom.[4] The race and seat location of all students in the lunchrooms as well as certain information about the schools were recorded (See Tables 1 and 2 for descriptive statistics of key variables). In total, 4,302 students were observed, 2,864 from public schools and 1,438 from private schools. Comparisons of the students observed to aggregate information provided by the public schools suggests that our sample was representative of the population (aggregate information was not available for private schools in both cities).

While we are confident that our samples are representative of the public and private school populations in these two cities, it is always possible that the two cities are somehow unrepresentative of other cities. Only a nationally representative sample could fully address these concerns. Nevertheless, there are no obvious differences between the racial dynamics of these cities and other cities nationwide. It is true that one of the cities from which subjects were drawn has a large proportion of Latino students, but

many American cities have a plurality or even a majority of minority students. While some caution should be exercised in extrapolating from these results to public and private schools in the nation as a whole, we believe that the lack of obvious differences between these and other cities allows one to make general statements from the results of this study.

The Results

Of all students observed in private school lunchrooms, 63.5% were in an integrated setting. That is, 63.5% of private school students were sitting in a group where at least one of the five students immediately around them was of a different racial group. In public schools, 49.7% of all students were in a similarly integrated lunchroom setting (See Table 3). This difference is both substantively and statistically significant. Private school students are more likely to be sitting in racially heterogeneous groups than are public school students.

These relatively high-sounding numbers on the extent of integration may be misleading unless one remembers that the definition of integration only required that one of five students sitting nearby be of a different racial group. The numbers sound more bleak if we consider the extent of racially homogeneous lunchroom settings. Slightly more than a third (36.5%) of private school students sit in groups where everyone is of the same race. A little more than half (50.3%) of public school students sit entirely surrounded by people of their own racial group.

The difference between integration in public and private schools is larger once some of the basic characteristics of schools are controlled statistically. Because not all public and private school students in our sample shared schools with the same characteristics, it is possible that some or all of the difference in integration could be

attributed to those characteristics, not the public or private nature of the school. For example, the number of public and private school subjects in each city was not even, allowing for the possibility that one city with worse racial relations might skew the results. Public and private schools also differed slightly in the extent to which students were assigned to their lunch seats. If seating was assigned or restricted by class, then the observed integration might be a function of that school policy and not really an output of positive racial socialization. The size of the school and the grade level of the students observed also differed in public and private schools. Controlling for all of these factors (city, seating restrictions, school size, and student grade level) in a logistic regression yields an adjusted integration result for public and private school students (See Table 7 for a presentation of all logistic models used in this paper). As is clear from Table 3, adjusting for all of these differences between public and private schools produces an even larger integration advantage for private schools. After adjusting for these factors, 78.9% of private school students are in a racially heterogeneous lunchroom setting compared to 42.5% of public school students.

These results clearly show that private school students are more likely to have a positive, integrated school experience than public school students. In the following sections we will consider possible explanations for this fact, but they do not alter the fact itself. Regardless of why private schools may better produce integration, the fact that they do is contrary to widely help assumptions about race and private schooling and is therefore an important finding.

Possible Explanation: Income and Social Class

Students in private schools may mix more easily with students of other races because they may have a greater tendency to come from families with higher incomes

and social class. Perhaps the obstacle to racial integration is really class segregation. Middle and upper-class whites may feel more comfortable mixing with middle and upper-class minorities than with lower class minorities. Perhaps higher-class students in general are more favorably inclined to the idea of integration. To the extent that private schools have students of higher social class and to the extent that integration level is altered by class, then the private school advantage may be partially or fully explained by the social class composition of private schools.

To test this explanation, we employ a rough measure of social class. From public schools we collected information on the percentage of students who receive free or reduced-price school lunch as an indicator of the average social class in that school. None of the private schools participated in the government free lunch program, so collecting comparable data from them was difficult. We simply asked them to estimate the percentage of their students who would qualify for a lunch program if they had one. As it turns out, the income limit that private school administrators believed was necessary for qualifying for a government lunch program is much lower than is actually the case. Therefore, the estimate of low-income students in private schools is almost certainly an underestimate. This measure of social class is also limited in other ways. Income and class are not necessarily the same thing, and moreover, free or reduced price lunch eligibility is a crude measure of income because it only has two categories.

Despite the limitations of this measure, including free or reduced price lunch eligibility as a variable in the logit model interestingly does not do much to close the gap in integration between private and public schools (See Table 3). Controlling for this rough measure of social class as well as the city, seating restrictions, school size, and grade-level observed in each school yields an adjusted percentage of 67.5% of private school students in an integrated setting compared to 49.9% of public school students. The advantage of private schools at integration is still large and statistically significant.

Possible Explanation: Mission

Perhaps many private schools produce better results because their religious mission is conducive to integration. Perhaps the political ideology attached to many U.S. religions (e.g., we are all equal in the eyes of G-d) prompts religious private schools to make extra efforts at practices that reflect this ideology, such as integration. It is also possible that a private school's adherence to a religious or other strongly held mission may help the parents of that school's students overcome anxieties about integration. Shared support for the private school's mission may be an over-arching objective that reduces resistance to mixing with people of other races.

One way to test this explanation is to examine the extent to which schools with a religious component to their curriculum are better integrated than secular private schools or secular public schools. A logistic regression that controls for the same factors as the models above yields the following adjusted rates of integration: 48.9% of public school students are in integrated settings compared to 44.1% of secular, private school students and 67.9% of religious, private school students (See Table 4). The difference between secular public and private schools is not close to being statistically significant, while the religious private schools are significantly better integrated.

From these results we can conclude that a religious education is positively related to integration. The existence of an advantage only for religious and not for secular private schools, however, is a conclusion that is difficult to make with great confidence from these data. It is difficult to verify this conclusion because of the limited number of private secular schools in our sample. In addition, private secular schools would have been significantly better integrated than public schools had we not controlled for our rough measure of social class. To the extent that the school lunch measure

underestimated the number of low-income students in the secular private schools, we are underestimating the rate of integration in those schools. Nonetheless, religious mission appears to be an important component of school success in promoting integration.

Possible Explanation: Segregation in Housing

Private schools may be better integrated than public schools because they depend less on racially segregated housing patterns for selecting their student body. Public schools tend to replicate and reinforce racial segregation in housing. Public policies and private housing decisions have created patterns of racially homogenous neighborhoods. Because public schools overwhelmingly select their student population based on where students live, these schools reproduce the racial segregation evident in housing. (Orfield et al, 1996)[5] Private schools, on the other hand, are only constrained in the geographic location from which they can draw students by the practical limits of transportation difficulties.

But if families resist integration in housing, why would they voluntarily integrate in private schools? By detaching schooling from housing, private schools may greatly reduce the anxiety that parents feel about the consequences of an effort at integration that goes badly. For most home-owners their house is their largest, highly-leveraged, asset. The financial repercussions for those home-owners should the area in which they reside become undesirable due to problems with local school integration are enormous. Families must then not only suffer with an undesirable school from which they cannot easily exit, but they risk losing a large amount of their highly-leveraged asset. If integration goes poorly in a private school, families suffer no more than the disruption of moving their child to a different school. They do not have to sell their house, re-locate,

and suffer the financial consequences. By reducing the possible costs of integration, private schools may make families more open to the benefits of an integrated education.

Evidence from our analysis strongly supports this explanation. We collected information on the proportion of students in each public school who lived outside of the normal attendance zone for that school. This figure would include students who participate in magnet or other public school choice programs. While fewer than 5% of all public school students attended schools outside of their attendance zone, we can use a logit model to simulate how integration would change if a larger proportion of students attended schools outside of their neighborhood. With just under 5% of students attending public schools outside of their attendance zones, the Index of Integration is only 49.5%. But if we statistically increase the number of students who choose schools outside of their housing area to 50%, the IOI increases to 74.3%. That is, if half of all public school students came from housing outside of the attendance zone, the percentage of students who would have racially integrated lunchroom settings would increase to 74.3%. (See Table 5) By simulating the detachment of housing from schooling in public schools, we generate an estimated rate of integration in public schools that is comparable to that observed in private schools.

We can simulate the effect of housing on integration in public schools in another way as well. When schooling is based primarily on attendance zones, the size of a school reflects the size of the geographic area from which it draws students. If we statistically increase the number of students in a school, we can simulate the effect of including additional neighborhoods in a school's attendance zone. Attendance zones that cover more neighborhoods would likely decrease the influence of segregated housing on school integration. Using a logit model of integration in public schools, we can simulate the importance of expanding current attendance zones on schools by increasing statistically the number of students in the schools. If we double the average

size of the public schools in our sample from 887 to 1,774, we increase the rate of integration from 49.5% to 82.9%. (See Table 6) Simulating larger schools, thereby modeling the decreased influence of housing on schooling, shows that integration would be significantly higher if the specific neighborhood in which one lives did not determine the school to which one's children must attend.

Conclusion

These simulations can only be suggestive of the influence of segregation in housing on integration in public and private schools. It may not be realistic or desirable to increase school size or draw half of school populations from outside of an attendance zone. But the point is that these simulated effects of housing on public school integration can generate predicted rates of integration that are comparable to those found in private schools. This suggests that one of the more important advantages for private schools in integration is that they do not determine their student population based on racially segregated housing patterns. The higher social class of students and strong religious missions of private schools may also contribute to their higher rates of integration.

Observing a national sample of school lunchrooms and collecting more detailed information on the class, mission, and housing factors that may influence integration would allow for stronger conclusions. While not definitive, the evidence presented here should help redefine how we think about integration in public and private schools. We should no longer accept unquestioningly the widely held view that public schools are better at integration than private schools. We should seriously consider policy proposals that would detach schooling from housing. This could include magnet schools and other public school choice programs as well as school choice programs that include private

schools. If we include private schools in choice programs we should seriously consider including religious schools among the available options because the religious mission of those schools may further advance racial integration in schools. In short, if we are serious about the benefits of racially heterogeneous school experiences, we need to consider abandoning or modifying the long held view that the traditional public schools is equivalent to the ideal of the common school.

Table 1: Descriptive Statistics for all Public and Private School Subjects			
Variables	N	Mean	Std Deviation
City	4302	.547	.4978
Private school	4302	.3343	.4718
Seating restrictions (Students assigned or restricted in where they sit)	4302	.3357	.4723
School size (Total number of students in school)	4302	723.4035	370.9198
Student grade level (Average grade observed in lunchroom)	4302	5.1738	3.3235
Low-income (Percent receiving free or reduced-price lunch)	4253*	51.5126	38.9063
Religious curriculum (Students attending school with religious curriculum)	4302	.31	.46
Index of Integration (likelihood of sitting in a racially heterogeneous group)	4302	.5430	.4982
*N for this variable is smaller because one private school did not provide information.			

Table 2: Descriptive Statistics for Public School Subjects			
Variables	N	Mean	Std Deviation
City	2864	.5168	.4998
Seating restrictions (Students assigned or restricted in where they sit)	2864	.4330	.4956
School Size (Total number of students in school)	2864	886.9679	333.0814
Student grade level (Average grade observed in lunchroom)	2864	4.7291	3.0681
Low-income (Percent receiving free or reduced-price lunch)	2864	73.2124	26.9376
Zoned (Percent living in school attendance zone)	2864	95.1166	8.3727
Index of Integration (Likelihood of sitting in a racially heterogeneous group)	2864	.4969	.5001

Table 3: Rates of Integration in Public and Private Schools		
Measure	Public	Private
Index of Integration (IOI)	49.7%	63.5%
IOI, Adjusted for effect of city, seating restrictions, school size, student grade level	42.5%	78.9%
IOI, Adjusted for effect of city, seating restrictions, school size, student grade level, and income	49.9%	67.5%

Table 4: Effect of Religious Mission on Integration in Public and Private Schools			
Measure	Public	Private, Secular	Private, Religious
Index of Integration (IOI), Adjusted for effect of city, seating restrictions, school size, income, student grade level	48.9%	44.1%	67.9%

Table 5: Simulated Effect of Increasing Student Population in Public Schools Drawn from Outside of School Attendance Zone		
Measure	Public Schools with almost 5% outside of attendance zone	Public Schools with 50% outside of attendance zone
Index of Integration (IOI), Adjusted for effect of city, seating restrictions, school size, student grade level	49.5%	74.3%

Table 6: Simulated Effect of Increasing Student Population by Doubling the Neighborhoods from Which Public Students are Drawn		
Measure	Public Schools with 887 students	Public Schools with 1774 students
Index of Integration (IOI), Adjusted for effect of city, seating restrictions, school size, student grade level	49.5%	82.9%

Table 7: Regression Results Derived from Logistic Models of the Effect of Various Factors on Integration

Variable	Model 1	Model 2	Model 3	Model 4
Constant	.2741 (.1546)	1.0758* (.1990)	1.1604* (.2008)	2.4587* (.5534)
City	-.0754 (.0664)	.2054* (.0779)	.1914* (.0780)	.1149 (.0965)
Private	1.6216* (.1393)	.7340* (.1918)	-.1927 (.3078)	
Seating restrictions	.0162 (.0866)	.0460 (.0877)	-.0025 (.0888)	.0350 (.1196)
School size	.0012* (.0002)	.0012* (.0002)	.0011* (.0002)	.0018* (.0003)
Student grade level	-.2722* .0149	-.2760* (.0160)	-.2840* (.0162)	-.3948* (.0288)
Low-income		-.0126* (.0017)	-.0123* (.0017)	
Zoned				-.0240* (.0056)
How religious			.9851* (.2579)	
N	4253	4253	4253	2864

*significant at the p <.05 level
standard errors are in parentheses

Models 1 is the logistic regression used to compute the first set of adjusted Index of Integration results presented in row 2 of Table 3. Model 2 was used to compute the second set of adjusted IOI results (controlling for income as well) that are presented in row 3 of Table 3. Model 3 was used to compute the IOI results in Table 4, which presents the effect of religious curriculum on integration. And Model 4, which draws only on public school data, was used to calculate IOI results for Tables 5 and 6 on the simulated effect of changing public school attendance zone practices.

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Endnotes

[1] Valuable research assistance for this project was provided by Jonathan Rude. The research was made possible by financial support from the Lynde and Harry Bradley Foundation, Larry Bernstein, and the University of Texas at Austin

[2] The Index of Dissimilarity has been widely used by researchers since the 1950s. The formula for calculating index scores is:

$$D = \frac{{}_{i=1}\Sigma^{n} \mid Bi/B - Wi/W \mid}{2}$$

Where Bi and Wi are equal to the number of blacks and whites in the ith school and B and W are equal to the number of African-American and white students in the district as a whole (African-American and white students are used for this illustration although any two ethnic or racial groups could obviously be compared).

Social scientists use this formula to calibrate the degree of racial imbalance within a particular school district, with 0 representing perfect desegregation (or balance) and 1 representing a perfectly segregated district (Duncan and Duncan 1955, Taueber 1965, Crain, et al. 1984, Rossell 1990).

[3] Designed to calculate the amount of exposure students of different races have to each other, the Index of Exposure is based on the following formula:

$$\text{Unstandardized: } Ewb = \frac{{}_{i=1}\Sigma^{n} Biwi}{{}_{i=1}\Sigma^{n} Bi}$$

Where Bi is equal to the number of African-Americans in the ith school, wi is the percentage white in that school, and w is, the percentage white in the district as a whole (again using African-American and white categories for ease of discussion, though any two groups could be compared). The score generated by this formula is interpreted as the percentage white in the average African-American student's school in that particular school district. To calculate the percentage African-American in the average white student's school, one would simply need to substitute percentage African-American for percentage white and vice versa (Crain 1984, Rossell 1990).

[4] This formula is as follows:

$$\text{Standardized: } Swb = 1 - \frac{Ewb}{w}$$

Where Ewb is the unstandardized IOE and w is the percentage white in the district as a whole.

[5] Two public schools and two private schools declined to participate. One additional public and one additional private school were then randomly selected to partially replace the schools that declined to participate. Because the rate of decline was both low and evenly split between the sectors, we have no reason to believe that our results have been biased by non-compliance.

[6] In a 1996 study, Gary Orfield, et al., found that the nation's public school districts are accelerating away from desegregation goals by returning to the practice of "neighborhood" or zoned schools, which effectively re-segregate students along segregated housing lines. He argues that this is a result of legal and legislative actions that have excused districts from federal oversight once they are declared unitary (i.e. no longer operating a dual, segregated, educational structure).

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