

Reducing inequality: Neighborhood and school interventions

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Fifty years after the Civil Rights Act and the declaration of the War on Poverty, much has changed for the better in the United States, but substantial racial inequality persists. Large gaps remain between African Americans and whites in earnings, employment, family income, health, life expectancy, incarceration, teen pregnancy, educational attainment, and academic achievement. Substantial gaps also remain between Hispanics and whites in economic and educational outcomes.¹ Differences in socioeconomic status are increasingly linked to differences in neighborhoods and schools. Although residential racial segregation has substantially decreased since 1970, residential economic segregation has increased sharply, particularly for blacks and Hispanics, and school segregation by family income has

risen. With rising economic inequality in recent decades, the effects of which socioeconomic status one is born into are magnified. In this article I use findings from two large-scale projects, the Moving to Opportunity demonstration and the Harlem Children's Zone, to examine the effects of neighborhood and school interventions on health, education, risky behaviors, and economic outcomes.²

Effects of rising income segregation

Neighborhood residential segregation by income has been increasing in the United States since 1970 at a higher rate than can be explained by rising income inequality alone.³ Nearly nine million Americans live in neighborhoods of extreme poverty, defined as those in which at least 40 percent of residents are poor.⁴ As income segregation has increased, minority children from low-income families who live in increasingly economically isolated high-poverty neighborhoods appear to be particularly disadvantaged. For example, Figure 1 shows a strong positive correlation between mean residential neighborhood income and the academic performance of eighth-grade students in New York City during 2009 to 2010. Note that this correlation

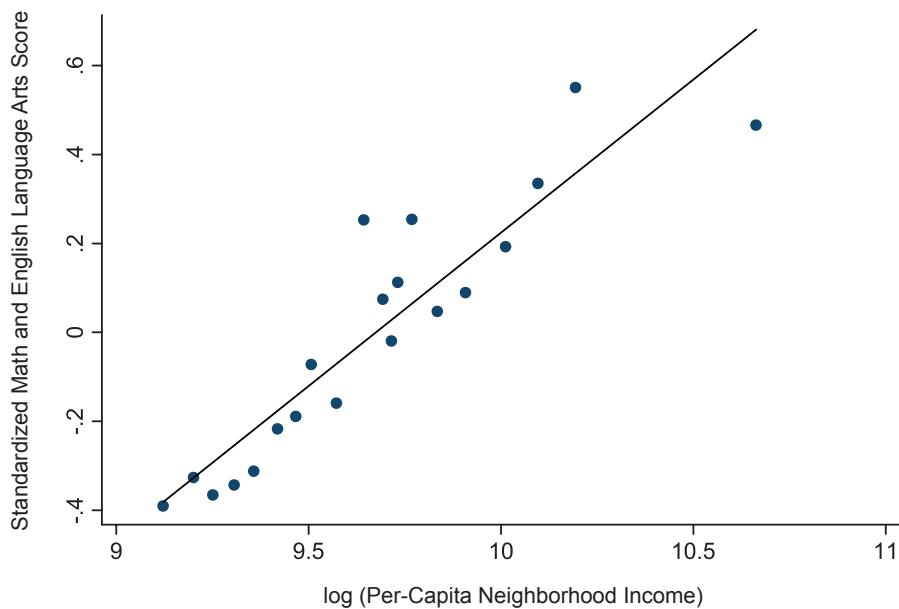


Figure 1. 8th grade math and English language arts performance by New York City neighborhood income.

Source: R. G. Fryer, Jr., and L. F. Katz, "Achieving Escape Velocity: Neighborhood and School Interventions to Reduce Persistent Inequality," *American Economic Review: Papers & Proceedings* 2013 103, No. 3 (2013): 232–237.

Notes: The figure plots mean eighth-grade standardized New York State Math and English Language Arts (ELA) achievement test scores of resident students against log (neighborhood per-capita income). The solid line shows OLS estimates for the underlying student-level data.

alone does not indicate causal effects; it could reflect direct neighborhood characteristics, school quality differences by neighborhood, or family background factors.

Adults in poor neighborhoods also have worse economic and health outcomes.⁵ These patterns have led to concern that the neighborhoods in which people live may have causal effects on their long-term life changes. Living in a disadvantaged neighborhood may negatively affect life outcomes by, for example, providing exposure to peer norms encouraging risky behaviors, or limiting access to resources such as schools or job referrals. Alternatively, moving to a more affluent area could mean greater discrimination and competition from more advantaged residents, and fewer social services for the poor.

Lower quality schools may also result in poorer life chances, independent of any neighborhood effects. An important policy question is whether either high-quality schools or broader neighborhood-based interventions alone are sufficient to weaken the cycle of intergenerational poverty for those growing up in high-poverty areas, or if both types of policies are needed. An ideal randomized experiment would compare: (1) a treatment of improving neighborhood quality while keeping school quality constant; (2) one that improved school quality while leaving the neighborhood unchanged; and (3) one that improved both school and neighborhood quality. Although no experiment taking exactly this form is currently available, there is a growing body of evidence using credible experimental and quasi-experimental sources of variation in neighborhoods and schools. I examine this literature to better understand which interventions may indeed be effective in combatting multigenerational poverty.

Prior research on neighborhood interventions

Isolating the causal effects of neighborhood environments on behavior and well-being is complicated by the fact that most people have some choice about where they live. Traditional cross-section observational studies have found strong neighborhood effects that weaken substantially with further controls for family background.⁶ However, unmeasured family background characteristics such as parenting style could be driving the effects rather than characteristics of the neighborhood itself; this would tend to lead to overestimated effects. Families who otherwise would have positive outcomes may be the ones more likely to move to a better neighborhood. Conversely, measurement error in defining meaningful neighborhoods could lead to underestimated effects.

Quasi-experimental studies of neighborhood effects on child outcomes exploiting housing mobility programs have generated a mixed set of findings. For example, early analyses of the Gautreaux program in Chicago found large effects on child outcomes of moving to the suburbs compared to central city Chicago.⁷ However, differential attrition and non-random sorting for moves to different locations raise concerns about these findings. Longer-term

follow-up studies of Gautreaux using administrative data find less strong effects.⁸ Studies of placements into public housing in lower-poverty vs. higher-poverty areas in Toronto and of moves following public housing demolitions in Chicago find little effect of neighborhood environments on educational outcomes or later earnings although such moves appear to have been associated with only modest change in school quality.⁹

Evidence on neighborhoods from Moving to Opportunity

The U.S. Department of Housing and Urban Development's Moving to Opportunity demonstration provides evidence from a large-scale randomized experiment about the long-term effects on low-income parents and children of moving from very disadvantaged to less distressed neighborhoods. The Moving to Opportunity demonstration was open to families with children living in public housing in high poverty neighborhoods in Baltimore, Boston, Chicago, Los Angeles, and New York. From 1994 to 1998, 4,600 families were enrolled and were randomly assigned to one of three groups: (1) the experimental group received housing vouchers that could only be used in areas with poverty rates below 10 percent, as well as help from a housing-mobility counselor in finding eligible housing; (2) the Section 8 group received conventional housing vouchers; and (3) the control group received no assistance through the program, but remained eligible for their current project-based housing assistance.

At program entry, one-quarter of household heads were employed, and over 85 percent of households were single-parent female-headed families. Most household heads were black or Hispanic; fewer than 40 percent had completed high school. The most common reason given by program applicants for wanting to move was fear of violent crime.

Final surveys were collected 10 to 15 years after random assignment. Response rates were very high, around 90 percent across all groups, so this study did not face the substantial attrition concerns of the early Gautreaux studies. Nearly half of those in the experimental group did in fact move to eligible housing, a higher than expected rate. One year after program entry, the average control group adult was living in a neighborhood with an average poverty rate of 50 percent. Those who moved with an experimental group voucher had their neighborhood poverty rates reduced by 35 percentage points on average, compared to a 21 percentage point reduction for those in the Section 8 group. Differences across the three groups narrowed over time as neighborhood poverty rates for those in the control group declined, but some differences persisted. As Figure 2 shows, in the 10 to 15 years following random assignment, about half of those in the experimental group who moved with a Moving to Opportunity voucher resided in neighborhoods with poverty rates that averaged below 20 percent, which was true for very few control group families. Those in the Section 8 group who

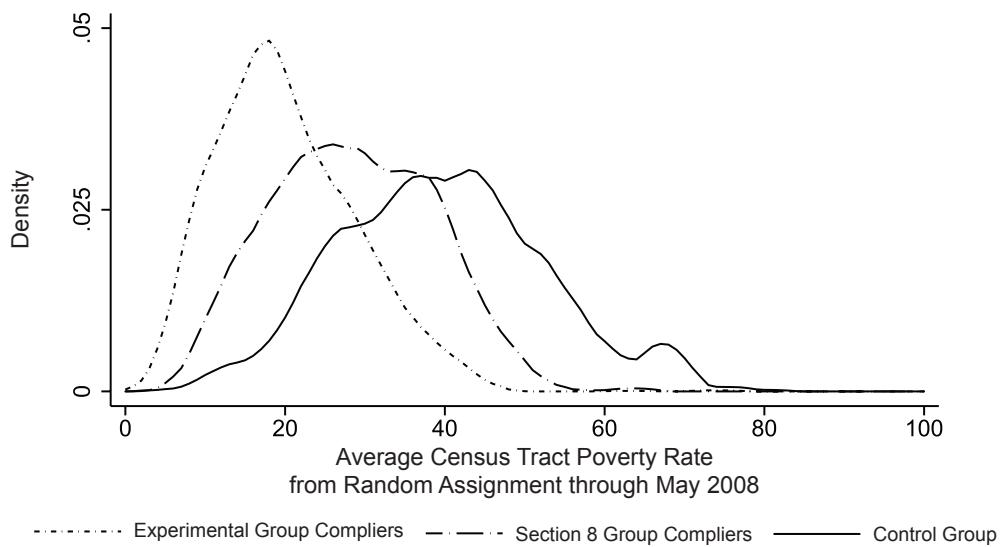


Figure 2. Neighborhood poverty distribution by treatment group.

Source and Sample: The sample is all adults who were interviewed as part of the long-term survey (with Experimental and Section 8 group adults limited to those who used a Moving to Opportunity voucher to move).

Notes: Duration-weighted average of census tract poverty at all addresses from random assignment through May 2008 (just prior to the long-term survey period), based on linear interpolation of 1990 and 2000 decennial census and the 2005–2009 American Community Survey data.

moved tended to have neighborhood poverty rates between those of the experimental group movers and the control group. Families offered Moving to Opportunity housing vouchers ended up in safer and lower-poverty neighborhoods with higher-quality housing. The Moving to Opportunity randomized treatments created large, persistent differences in neighborhood environments for otherwise comparable groups.

Nevertheless, the Moving to Opportunity treatments led to no detectable effects on adult economic self-sufficiency in the short-term (1 to 2 years), interim (4 to 7 years), or final (10 to 15 years) follow-up studies. In contrast, other interventions focusing on work incentives and skills have been found to improve employment and economic self-sufficiency for similar groups of adult public housing residents. For example, the Jobs-Plus program, which offered: (1) employment services to public housing residents; (2) changes in rent rules which increased work incentives; and (3) community support for work, produced sustained positive effects on earnings.¹⁰

The Moving to Opportunity program did, however, have beneficial effects on adult physical and mental health, and subjective well-being. Moving with an experimental group voucher reduced the prevalence of having a body mass index of 40 or more (an indication of extreme obesity) by 7 percentage points. Moving with an experimental group voucher also reduced the likelihood of diabetes among adults by 10 percentage points, or one-half of the control group's diabetes rate. One explanation for these beneficial effects on physical health is that the program increased neighborhood safety, and thus improved mental health, including measures of psychological distress. Overall, adults in the experimental

group were happier and experienced less stress than the control group. This hypothesis about safety, stress, and health is consistent with the finding that the majority of program applicants cited concerns about crime and violence as their primary reason for wanting to participate in Moving to Opportunity.

Although the program was quite effective at reducing neighborhood poverty for those in the treatment groups, there was much less change in the quality of the schools attended by children in the treatment groups as indicated by school mean test scores, study participants' self-reports of school climate, and by only modest reductions in the low-income share of school peers. The final evaluation of Moving to Opportunity detected no systematic effects of moves to better neighborhoods on the academic achievement, educational outcomes, or risky behaviors for children in the study at 10 to 15 years after program entry. However, there were some beneficial effects on female (but not male) youth in other areas. Assignment to the experimental and Section 8 groups resulted in improved physical health for girls, while girls in the experimental group also had improved mental health outcomes. The reason for these gender differences remains unclear; they do not appear to be attributable simply to gender differences in the likelihood of these outcomes. There were some study sites where school quality did improve substantially for the treatment groups, so for a subsample it was possible to assess the effects of school quality while holding neighborhood poverty roughly constant. In this analysis, the treatment groups in sites where moves led to larger improvements in school quality were also found to have improvements in educational outcomes and reductions in risky behavior. It should be noted that it was

still too early at the time of final evaluation in 2008 to 2009 to assess the effects of the Moving to Opportunity treatments on the adult outcomes of the younger children in the study.

Neighborhood environments have important effects on the quality of life and well-being of low-income families, even if the moves to better neighborhoods for the Moving to Opportunity treatment groups do not appear to have improved the economic or educational outcomes of adults and older children. Estimates from the Moving to Opportunity data imply that a decline in neighborhood poverty of one standard deviation (13 percentage points) is associated with an increase in adult subjective well-being equivalent to that associated with an increase in household income of \$13,000. This represents a very large difference, given that the average control group's family income is only \$20,000.

Prior research on school interventions

Although the Moving to Opportunity study does provide some evidence that moves to areas with higher school quality can improve students' outcomes, it is necessary to turn to other data sources to fully explore this area. Prior work by David Deming and colleagues has shown that a public school choice lottery in the Charlotte-Mecklenburg school district resulted in lower crime and higher college enrollment and degree completion for those gaining access to higher-quality schools without moving neighborhoods.¹¹

An experiment in Tennessee found that reduced class size and higher-quality classes in kindergarten through third grade led to better test scores in the short run, and longer-run effects on college attendance and adult earnings.¹² The effects of reduced class size were largest for minority and free lunch students.

Finally, the quality of teachers also appears to matter. The Tennessee experiment also showed that having more experienced teachers in kindergarten through third grade results in higher adult wages.¹³ In addition, students assigned to a high value-added teacher in grades four through eight earn more at age 28, are less likely to be teen parents, and are more likely to enroll in college and to attend a high-quality college.¹⁴

Evidence on schools from the Harlem Children's Zone

The Harlem Children's Zone is a 97-block area in Harlem, New York, that combines "No Excuses" charter schools with neighborhood services designed to create a positive and supportive social environment for children from birth to college graduation.¹⁵ The Harlem Children's Zone was created to address a large range of issues faced by children in Harlem, including housing, schools, crime, and asthma. The approach is based on the belief that it is necessary to improve

both neighborhoods and schools in order to raise student achievement.

Since admission to the Harlem Children's Zone Promise Academy charter school was done on a lottery basis, and because many of the students live outside the boundary of neighborhood supports, it is possible to determine the causal effect of being offered admission to the charter school, and also attempt to separate out the effects of schools, neighborhoods, and their interaction, on youth outcomes. Dobbie and Fryer found that six years after admission, lottery winners have an increase in math achievement of over one-quarter of a standard deviation and a 14 percent increase in college enrollment.¹⁶ Females are 12 percentage points less likely to be teen mothers, and males are 4 percentage points less likely to be incarcerated. Overall, winning the charter school lottery resulted in large and significant increases in human capital, large and marginally significant decreases in risky behaviors, and no effect on health outcomes. Since lottery effects were similar for students living within and outside the zone boundaries, it appears there is little interaction effect of neighborhood and school quality. There also appear to be little or no direct neighborhood effects on youth outcomes for those not attending the charter school.

Conclusions

As illustrated in Figure 3, these results from credible quasi-experimental and experimental sources of variation in neighborhoods and schools suggest that neighborhood improvements are more effective than school improvements at reducing physical and mental health inequalities and improving well-being. Improvements in school quality, however, are more effective in decreasing persistent economic and educational inequalities and reducing risky behaviors. This distinction indicates that it is important for policymakers to choose the appropriate intervention for the outcome to be addressed.

Note that it is important to consider the possibility of differences in the macro versus micro effects of neighborhood and school policy interventions, and that this distinction is difficult to assess in an experiment. At the micro level, we have good evidence that if the distribution of schools and teachers is held constant, then attending a better school or having better teachers results in better outcomes. However, on a macro level, those effects could be balanced out by negative effects for those left with the poorer schools or teachers.¹⁷ What is needed is a way to generate large-scale improvements in school and teacher quality for low-income students growing up in high-poverty neighborhoods. That is, how can one increase the supply of talented teachers, principals, and school practices? It is necessary to consider all of these together, since changing just one aspect could have unintended consequences. For example, simply mandating smaller class size could have the unintended effect of reducing teacher quality in poorer districts that had less ability to compete in hiring. Since teacher quality is

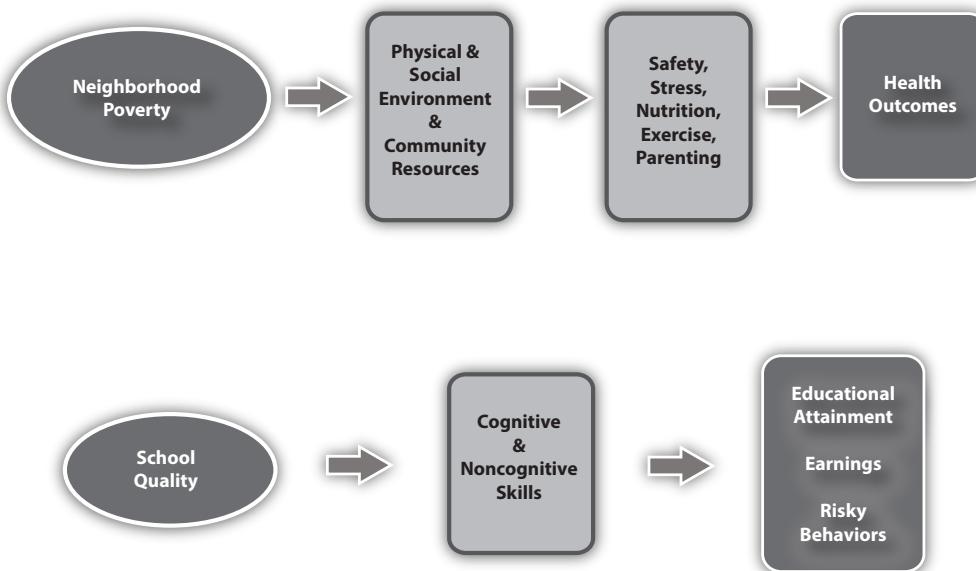


Figure 3. Pathways and effects of neighborhood and school interventions.

likely more important to student outcomes than class size, this could result in a net negative effect of a smaller class size mandate. There is some older evidence supporting the idea of a macro approach to school interventions. For example, historical statewide efforts to increase public school inputs have been found to improve long-run economic outcomes.¹⁸

For economic outcomes, the state of the local labor market appears to matter more than the particular neighborhood of residence. So, a stronger macroeconomy in a particular metropolitan area will improve economic outcomes for everyone. It does appear that the overall level of segregation in a metropolitan area matters; recent work has suggested that neighborhoods with less residential segregation (by race or income) are more likely to have better schools, and to have a higher level of upward mobility.¹⁹ High-return investments in schools and neighborhoods are clearly worthwhile, but support for such investments is difficult in the currently weak macro environment. While a rising tide may not automatically lift all boats, it may be much easier to effect change while the tide is rising. ■

¹⁸R. G. Fryer, Jr., “Racial Inequality in the 21st Century: The Declining Significance of Discrimination,” In *The Handbook of Labor Economics*, Volume 4B, eds. O. Ashenfelter and D. Card (Amsterdam: Elsevier, North Holland, 2011).

¹⁹In addition to the Lampman lecture, this article draws from two papers: R. G. Fryer, Jr. and L. F. Katz, “Achieving Escape Velocity: Neighborhood and School Interventions to Reduce Persistent Inequality,” *American Economic Review: Papers & Proceedings* 2013 103, No. 3: 232–237; and J. Ludwig, G. J. Duncan, L. A. Gennetian, L. F. Katz, R. C. Kessler, J. R. Kling, and L. Sanbonmatsu, “Long-Term Neighborhood Effects on Low-Income Families: Evidence from Moving to Opportunity,” *American Economic Review* 103, No. 3 (May 2013): 226–231.

²⁰S. F. Reardon and K. Bischoff, “Income Inequality and Income Segregation,” *American Journal of Sociology* 116, No. 4 (2011): 1092–1153.

⁴E. Kneebone, C. Nadeau, and A. Berube, “The Re-Emergence of Concentrated Poverty: Metropolitan Trends in the 2000s,” The Brookings Institution Metropolitan Policy Program, Washington, DC, 2011.

⁵R. J. Sampson, *Great American City: Chicago and the Enduring Neighborhood Effect* (Chicago: University of Chicago Press, 2012).

⁶See, for example, J. Brooks-Gunn, G. J. Duncan, P. K. Klebanov, and N. Sealand, “Do Neighborhoods Influence Child and Adolescent Development?” *American Journal of Sociology* 99, No. 2 (September 1993): 353–395.

⁷J. E. Rosenbaum, “Changing the Geography of Opportunity by Expanding Residential Choice: Lessons from the Gautreaux Program,” *Housing Policy Debate* 6, No. 1 (1995): 231–269.

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¹⁰J. A. Riccio, *Sustained Earnings Gains for Residents in a Public Housing Jobs Program*, Policy Brief, MDRC, New York, NY, January 2010.

¹¹D. J. Deming, “Better Schools, Less Crime?” *Quarterly Journal of Economics* 126, No. 4 (2011): 2063–2115; and D. J. Deming, J. S. Hastings, T. J. Kane, and D. O. Staiger, “School Choice, School Quality, and Postsecondary Attainment,” *American Economic Review* 104, No. 3 (2014): 991–1013.

¹²A. B. Krueger, “Experimental Estimates of Education Production Functions,” *Quarterly Journal of Economics* 114, No. 2 (1999): 497–532; and R. Chetty, J. N. Friedman, N. Hilger, E. Saez, D. W. Schanzenbach, and D. Yagan, “How Does Your Kindergarten Classroom Affect Your Earnings? Evidence from Project Star,” *Quarterly Journal of Economics* 126, No. 4 (2011): 1593–1660.

¹³Chetty et al., “How Does Your Kindergarten Classroom Affect Your Earnings?”

¹⁴R. Chetty, J. N. Friedman, and J. E. Rockoff, “Measuring the Impacts of Teachers II: Teacher Value-Added and Student Outcomes in Adulthood,” *American Economic Review* 104, No. 9 (2014): 2633–2679.

¹⁵“No Excuses” schools typically allow the principal considerable administrative freedom, set measurable goals that are regularly tested, emphasize parental participation, and create a culture of universal achievement that makes no excuses based on students’ background.

¹⁶W. Dobbie and R. G. Fryer, Jr. “The Medium Term Impacts of High-Achieving Charter Schools on Non-Test Score Outcomes,” NBER Working Paper 19581, National Bureau of Economic Research, October 2013.

¹⁷Since school and teacher effects appear to be greater for more disadvantaged students, there might indeed be net benefits to redistributing resources in a way that favors poorer students, but this may not be a politically feasible policy.

¹⁸D. Card and A. B. Krueger, “Does School Quality Matter? Returns to Education and the Characteristics of Public Schools in the United States,” *The Journal of Political Economy* 100, No. 1 (February 1992): 1–40.

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