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**Article**

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# Improving the Life Chances of Disadvantaged Children

Jens Ludwig\*

Improving the schooling outcomes for disadvantaged children is central to efforts to reduce overall inequality and for increasing economic growth. Around 78 percent of white high school students graduate within four years, compared to 58 percent of Hispanics and 55 percent of blacks.<sup>1</sup> In the federal government's 2007 National Assessment of Educational Progress, only 16 percent of fourth-grade students who were eligible for free lunch scored at proficient levels in reading, compared with 44 percent of those with higher family incomes.<sup>2</sup> These large disparities understandably have intensified concern about how to improve our system of public schools.

The possibility that some of the most effective ways to improve school outcomes might not have anything to do with elementary or secondary schools first was raised in a landmark 1966 study named after its lead investigator, the distinguished sociologist James S. Coleman.<sup>3</sup> The "Coleman Report" made several remarkable claims, including: the black-white gap in school "inputs" was much smaller than generally perceived; school inputs were only weakly correlated with student test scores; among the strongest correlates of test scores were family background and the socio-economic composition of the child's school; and, disparities in test scores open up very early in life, so that for example the black-white test score gap was already 1.5 standard deviations by first grade. Subsequent studies have shown that these disparities are

evident in the pre-school years, in part because of disparities in early learning environments. By age three, children in professional families have larger vocabularies than the *parents* of children in families on welfare.<sup>4</sup>

My research and that of other NBER family members suggests that segregation, poverty, and other aspects of the out-of-school environment, particularly early in life, indeed seem to matter for children, but apparently more so for behavioral outcomes like schooling attainment and criminal behavior than for achievement test scores.

## Social Context

Since at least the 1920s, social scientists have thought that child development may be heavily influenced by the child's social context, including the interactions with peers that shape the returns to different behaviors, the information that local adult role models convey about the value of schooling and formal labor market involvement, and the quality of local institutions such as schools and police. These beliefs are consistent with the substantial cross-sectional variation observed in children's learning and other outcomes across schools and neighborhoods of differing socio-economic and racial compositions. Yet in practice, isolating the causal effects of social context on children's life chances has been quite difficult because of the endogenous sorting of families across schools and neighborhoods.

To identify and estimate the causal effects of neighborhoods on children and families, the U.S. Department of Housing and Urban Development

(HUD) sponsored the Moving to Opportunity (MTO) residential mobility experiment. Started in 1994 in five cities (Baltimore, Boston, Chicago, Los Angeles, and New York), MTO enrolled a sample of 4600 public housing families with children and via random lottery offered some families the chance to use a housing voucher to move into a less distressed neighborhood. Random assignment in MTO generated very large changes in neighborhood conditions among otherwise comparable groups of families. For example, families with MTO vouchers moved into census tracts with average poverty rates of just 12 percent in the year 2000, much lower than the average baseline tract's poverty rate of 50 percent.

Data collected on MTO families about five years after a baseline revealed no detectable differences in average achievement test scores across randomly assigned MTO mobility groups. However, my study with Jeffrey Kling and Lawrence Katz shows that arrest rates for violent crime among youth who relocated through MTO were around 40 percent lower than those for youth in the control group.<sup>5</sup> MTO also reduced arrest rates for other types of crimes among young females, but it seems to have increased property-crime arrests for young males. Other studies using data from randomized public-school choice lotteries also have found that moving to a higher-quality or less segregated school has more pronounced effects on behavioral outcomes, like crime, than on achievement test scores. However, the school choice studies do not find signs of adverse effects on property offending or other criminal behaviors of male youth.<sup>6</sup>

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These various studies of randomized housing-voucher or school-choice lotteries identify partial-equilibrium effects by focusing on those who move to a new social context. To learn more about the general-equilibrium effects on crime from large-scale government efforts to re-sort people across social contexts, David Weiner, Byron Lutz, and I study the largest and arguably most important policy initiative in this area: court-ordered school desegregation, which has been of increasing interest to economists in recent years.<sup>7</sup> Most of the nation's largest urban districts were forced to desegregate by local federal court order; differences across these districts in the timing of the court orders provide our source of identifying variation. Our analysis suggests that re-sorting children across social settings is not just a zero-sum game. Court-ordered school desegregation seems to generate substantial declines in homicide victimization and offending among black youth and, interestingly, seems to generate beneficial spillovers to other groups as well (such as whites and black adults), at least in the short term.

### Early Childhood Education

Early disparities in children's outcomes and the possibility that certain learning can take place only at specific times in a child's development have generated considerable interest in early childhood interventions. Because getting parents to behave in more developmentally productive ways seems to be quite difficult in practice, most of the policy attention has been devoted to center-based early childhood education (ECE) programs. Intensive, small-scale model programs from the 1960s and 1970s—such as Perry Preschool and Carolina Abecedarian—have been shown to improve important adult economic and other outcomes, despite some “fade out” in test score gains. While these programs seem to generate benefits far in excess of their costs,<sup>8</sup> there remains the important policy question of whether these small-scale

model programs can be taken to scale effectively.

Head Start is the main example of such a scaled-up program, and has consistently generated debate about whether it produces lasting benefits to program participants. Head Start was launched in 1965 by the Office of Economic Opportunity (OEO) and provides low-income children aged 3–5 years, and their parents, with schooling, health, nutrition, and social welfare services. The first study arguing that Head Start benefits to children fade out rapidly was released in 1966, which meant there was a very short honeymoon period. The main concern with that early study, and many subsequent ones, is the possibility that relatively more disadvantaged families may select (or be selected) into program participation, so that naïve regressions that simply compare participants and non-participants may understate the benefits of the program.

My work on Head Start with Douglas Miller tries to identify its causal effects on children's life outcomes by taking advantage of a discontinuity in program funding across counties that resulted from the way the OEO initially implemented the program.<sup>9</sup> During the spring of 1965, OEO provided technical assistance to the 300 poorest counties in the United States to develop Head Start funding proposals. We show that program funding and participation rates are 50–100 percent higher in counties with poverty rates just above OEO's cutoff (the “treatment” group) than in those just below (the control group). This funding difference, which is the key to our regression discontinuity (RD) research design, appears to have persisted through the late 1970s. The estimated discontinuity in other federal social spending is small and not significant.

Our main finding is that this large “jump” in Head Start funding at the OEO threshold is mirrored in a large “drop” in mortality rates to children 5 to 9 years of age over the period 1973–83 from causes addressed as part of

Head Start's health services. Our estimates imply that a 50–100 percent increase in Head Start funding reduces mortality rates from relevant causes by 33–50 percent of the control mean, enough to drive mortality rates from these causes in the treatment counties down to about the national average. There do not appear to be drops for other causes-of-death or birth cohorts that should not be affected by Head Start. We also find suggestive evidence of a “jump” at the OEO threshold in educational attainment, but no statistically significant discontinuities in achievement test scores measured during middle school.<sup>10</sup>

### Implications for Policy and Next Steps

The growing body of research about the beneficial effects on disadvantaged minority children from reducing segregation of schools and neighborhoods is relevant to ongoing policy and legal debates about government efforts in this area. While there would be great value in learning more about the general-equilibrium effects of large scale re-sorting policies, the evidence we have to date suggests that helping poor families move out of high-poverty high-rise public housing projects may help to improve at least certain aspects of child well-being.

What else policy might do to reduce the segregation of low-income minority children in schools or neighborhoods is not clear. While many public housing families appear eager to move to less-distressed areas when given the chance, some of my ongoing work with Brian Jacob suggests that other low-income families who are already in the private housing market are reluctant to move out of their old neighborhoods, even when provided with large rental subsidies. Re-sorting children across schools without changing residential patterns is difficult given how segregated our cities are, and given past U.S. Supreme Court decisions that make it extremely difficult to re-sort children across school

district boundaries. Consider, for example, that in the Chicago Public School system, just 9 percent of students are white, and fully 86 percent of students are eligible for free or reduced price lunches.

Whether local, state, or federal governments will increase investments in early childhood education despite their current budget difficulties remains to be seen. At least as important for public policy is the question of whether Head Start is as beneficial for today's poor children as it was in the past. In principle, the net effects of Head Start may have changed over time, as the developmental quality of the program and its alternatives have changed substantially.

The federal government recently sponsored a randomized experimental study of Head Start that found impacts on test scores measured at the end of the program year on the order of 0.1 to 0.2 standard deviations. These results led to considerable criticism of Head Start for not doing more to eliminate the test score gap between minority and white children or between rich and poor. But Deborah Phillips and I note that these initial impacts are about the same as what was found for previous cohorts of children, for whom we observed lasting benefits into adulthood.<sup>11</sup> More puzzling are the latest results from the experiment's first-grade follow-up, which showed almost complete "fade out" of these initial gains—a more rapid decline in Head Start effects than what was observed for previous cohorts of program participants.

The recent Head Start experiment highlights the great value for social policy in learning more about the mapping between short- and long-term ECE impacts. Ideally, we would be able to use short-term effects from ECE studies in a manner analogous to what medical researchers call "surrogate clinical endpoints" (for example, using changes in blood cholesterol levels to understand effects on long-term risk for cardiovascular disease). It would certainly

be less than ideal to have to wait 30 or 40 years to understand the long-term effects of today's early childhood interventions.

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<sup>1</sup> C.B. Swanson, *Cities in Crisis, 2009 — Closing the Graduation Gap: Educational and Economic Conditions in America's Largest Cities, Bethesda, MD: Editorial Projects in Education, 2009.*

<sup>2</sup> The Nation's Report Card, *Reading 2007: National Assessment of Educational Progress at Grades 4 and 8, National Center for Education Statistics 2007-496, Washington, DC: U.S. Department of Education, Institute for Educational Sciences, 2007.*

<sup>3</sup> J.S. Coleman, E. Q. Campbell, C.J. Hobson, et al, *Equality of Educational Opportunity, Washington, DC: Office of Education, U.S. Department of Health, Education, and Welfare, 1966.*

<sup>4</sup> B. Hart and T. Risley, *Meaningful Differences in the Everyday Experience of Young American Children, Baltimore, MD: Paul Brooks, 1995.*

<sup>5</sup> See L. Sanbonmatsu, J.R. Kling, G.J. Duncan, and J. Brooks-Gunn, "Neighborhoods and Academic Achievement: Results from the Moving to Opportunity Experiment", *NBER Working Paper No. 11909, January 2006, and Journal of Human Resources, XLI, (2006), pp. 649–91; J.R. Kling, J. Ludwig, and L.F. Katz, "Neighborhood Effects on Crime for Female and Male Youth: Evidence from a Randomized Housing Voucher Experiment", NBER Working Paper No. 10777, September 2004, and Quarterly Journal of Economics, 120(1), (2005), pp. 87–130.*

<sup>6</sup> See J.B. Cullen, B.A. Jacob, and S. Levitt, "The Effect of School Choice on Student Outcomes: Evidence from Randomized Lotteries", *NBER Working Paper No. 10113, November 2003, and Econometrica 74(5) (2006), pp. 1191–1230; and D. Deming, "Better Schools, Less Crime?" working paper, Carnegie-Mellon University, 2009.*

<sup>7</sup> D.A. Weiner, B.F. Lutz, and J. Ludwig, "The Effects of School Desegregation on Crime", *NBER Working Paper No. 15380, September 2009. See also, for example, J. Guryan, "Desegregation and Black Dropout Rates," NBER Working Paper No. 8345, June 2001, and American Economic Review, 94(4) (2004), pp. 919–43.*

<sup>8</sup> See, for example, C.R. Belfield, M. Nores, W.S. Barnett, and L. Schweinhart, "The High/Scope Perry Preschool Program: Cost-Benefit Analysis Using Data from the Age-40 Follow-up," *Journal of Human Resources, XLI(1), (2006), pp. 162–90; and W.S. Barnett and L.N. Masse, "Comparative Benefit-Cost Analysis of the Abecedarian Program and its Policy Implications," Economics of Education Review, 26, (2007), pp. 113–25.*

<sup>9</sup> J. Ludwig and D.L. Miller, "Does Head Start Improve Children's Life Chances? Evidence from a Regression Discontinuity Design", *NBER Working Paper No. 11702, October 2005, and Quarterly Journal of Economics, 122(1) (2007), pp. 159–208.*

<sup>10</sup> See also J. Currie and D. Thomas, "Does Head Start Make a Difference?", *NBER Working Paper No. 4406, July 2003, and American Economic Review, 85(3) (1995), pp. 341–64; E. Garces, D. Thomas, and J. Currie, "Longer Term Effects of Head Start," NBER Working Paper No. 8054, December 2000, and American Economic Review, 92(4) (2002), pp. 999–1012; and D. Deming, "Early Childhood Intervention and Life-Cycle Skill Development: Evidence from Head Start," *American Economic Journal: Applied Economics, 1(3) (2009), pp. 111–34.**

<sup>11</sup> J. Ludwig and D.A. Phillips, "The Benefits and Costs of Head Start", *NBER Working Paper No. 12973, March 2007, and Society for Research in Child Development Social Policy Report, 21(3) (2007), pp. 3–18.*