

The American Family in Black & White: A Post-Racial Strategy for Improving Skills to Promote Equality

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Disparities between blacks and whites are persistent features of American society.¹ On many measures, blacks as a group perform worse than whites, and the trends are discouraging. These disparities, continuing reminders of America's troubled history of racial discrimination, clash with American ideals about equality, opportunity, and social mobility. Discussing these disparities is painful because American public policy has been so wrong in the past. The institution of slavery, the all-too-slow dismantling of segregation in the South and discriminatory practices elsewhere, prevented ready acceptance of blacks into mainstream American society. When the civil rights movement finally goaded the United States into abolishing state-sanctioned discrimination, integration of African Americans into the economy accelerated. Black economic status surged in the late 1960s and early 1970s, with especially rapid progress in the previously segregated South.²

The success of the civil rights movement in reversing state-sanctioned discrimination gave rise to the hope that active government intervention in the economy, schools, and the courts could produce full equality for blacks in the larger society. Some forty years later, despite the visible success of an elite group within the black population, the economic and social progress of a large segment of African Americans has lagged. If anything, official statistics overstate the progress of African American males.³

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Why have the hopes of the civil rights movement not been realized? What can we learn from this stalled progress about how public policy should respond? In light of evidence amassed since the 1960s, are the challenges to making headway in economic and social arenas distinctive to African Americans, or are they the consequences of common forces that operate equally on all Americans?

Black America has a unique history and now faces unique challenges. However, as William Julius Wilson has wisely observed,⁴ the first-order problems facing African Americans in contemporary society are shared by many other groups. In particular, the shortfalls in achievement in the twenty-first century among all groups stem from shortfalls in skills – including education and on-the-job training as well as cognitive and personality traits – not in the rewards accorded those skills.

Global economic forces challenge unskilled persons of all races and ethnicities. Secular trends in trade and technology have boosted the demand for skilled labor. Yet the supply of skills has responded slowly. The percentage of Americans with college degrees is the highest in history, yet the high school dropout rate, properly counted, has increased in the past forty years.⁵ American society is dividing into affluent haves and underprivileged have-nots, with differences in skills accounting for most of the disparity. For Americans of all racial and ethnic groups, the supply of skills has responded slowly to shifts in market demand. The response is particularly slow for African American males.

About the same time he was promoting the 1964 Civil Rights Act, President Lyndon Johnson launched the War on Poverty. The programs created by that initiative recognized the importance of enhancing skills for reducing poverty.

Many of the War on Poverty programs and policies designed to boost skills failed.⁶ Our understanding of which skills are important and how to foster them effectively has improved greatly since the 1960s. However, many who advocate skill enhancement programs to close racial gaps continue to support unsuccessful approaches. Just as we need to reexamine the sources of racial inequality in contemporary American society, we also need to rethink our strategies for promoting skills.

Public policy to promote skills must reckon with three essential truths, which have been distilled from a large body of research conducted in the wake of the War on Poverty. First, success in life requires more than cognition and intelligence: *soft skills* are important, too. Conscientiousness, perseverance, sociability, and other essential character traits matter a great deal, though they are largely neglected in devising and evaluating policies to reduce inequality.

Second, skill formation is a dynamic, synergistic process. Skills beget skills; they cross-foster and promote each other. A perseverant, curious child learns more, and early achievement fosters later success. Advantages cumulate. Young children are flexible and adaptable in ways that adolescents and adults are not. Preventing deficits from arising in early childhood is much easier than remediating them later. The War on Poverty took a scattershot approach to fostering the skills of disadvantaged persons and did not target the early years, where skill-promoting interventions are most effective.

Third, families play an essential role in shaping their children's abilities. The family plants and nourishes the seed that grows into the successful student and adult. Skill formation starts in the womb. Early childhood lays the foundation for the rest of life. Substantial gaps in abili-

ties between the advantaged and the disadvantaged form before children enter school. Unequal as they are, American schools do little to widen or narrow the gaps. We need to take into account the knowledge that has accrued since the 1960s about the powerful role of the family in shaping the skills children have as adults.

Across all racial and ethnic groups, the American family is under strain.⁷ This reality has substantial implications for the next generation. More than 40 percent of all American children are born out of wedlock; more than 12 percent live in families where the mother has never married. Such families have fewer financial and parenting resources for child development. It is well documented that on many outcomes, the children of lone-parent families perform worse than those of dual-parent families.⁸ Any effective policy to foster skills must recognize the importance of the family, the mechanisms through which families create child skills, and the stress under which many families operate.

In 1965, when politician and sociologist Daniel Patrick Moynihan wrote his famous analysis of the state of the African American family (dubbed the Moynihan Report), roughly 26 percent of all African American children were born out of wedlock.⁹ (The figure is now 72 percent.) He met a venomous reception and was falsely charged with “blaming the victim” because he pointed out the adverse consequences for children born out of wedlock. For years, to discuss the family as a contributor to black disparity was considered politically incorrect. Fortunately, and due in no small part to the writings of William Julius Wilson, it is now possible to discuss this delicate issue.¹⁰

Moynihan used strong language and focused on “the pathology of the Negro family,” an unfortunate choice of words

that obscured an important insight. Moynihan’s writings apply more generally to all American families. Dysfunctional families, which are increasingly prevalent in many quarters of American society, often produce dysfunctional children and greatly contribute to social inequality.

In 2011, the problems many African Americans face are also confronted by other Americans. Acknowledging this fact reframes the policy discussion and helps move past traditional flash points. Indeed, many American children across all races and ethnicities are in the same sinking boat. Policies that recognize the importance of the early childhood years, the central role of the family in producing skills, and the importance of skills other than those measured by achievement tests are likely to be far more effective than current school-based strategies and adolescent remediation programs.

Policies based on these three essential truths prevent problems rather than remediate them. By assisting families in creating and supporting capable, achievement-motivated students, they bolster school performance and relieve the burden on other social institutions. Moreover, strategies that address inequality by recognizing problems shared by all Americans shift the dialogue about disparity beyond racial boundaries. For this reason, such strategies are likely to gain more political support than race-based policies.

The failures of programs launched under the War on Poverty shed light on how to construct effective alternatives. In an era of massive government deficits at all levels, strategies for promoting skills must be cost effective. They must harness resources in the private sector, including the love mothers have for their children, to promote skill development.

In this essay, I first summarize a substantial body of evidence that shows that

Table 1

Shortfalls in Hourly Wages for Blacks and Hispanics in the Last Twenty Years: Actual Disparity and Disparity Adjusted for Ability

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	Males		Females	
	Actual	Adjusted	Actual	Adjusted
Black	-25%	-6%	-17%	12%
Hispanic	-15%	3%*	-7%	17%

*Denotes not statistically significant from zero, that is, the adjusted gap is likely to arise from chance. Source: Author's calculations from the National Longitudinal Survey of Youth. For details, see the Web appendix at http://jenni.uchicago.edu/understanding_b-w_gap/. The wages are adjusted for age.

discrimination in the labor market is no longer a first-order cause of racial disparity. Second, I discuss the skill gap: which skills matter and how the family plays an important role in producing them. Third, I consider the consequences of adverse trends in American families that retard skill formation and increase inequality. Finally, I propose effective policies to supplement the resources of disadvantaged families. The true measure of child poverty is parenting, and an effective skills-oriented policy bolsters the parenting resources of the disadvantaged.

Overt Discrimination is No Longer a First-Order Problem in American Society. Discrimination exists and should be eliminated. The evidence suggests, however, that discrimination in how skills are rewarded does not account for much of the achievement gap in contemporary America. Rather, inequality in skills is the first-order problem. The skills individuals bring to the market, to school, and to other quarters of society determine their success. In the labor market, one group may earn lower wages than another because payments per unit skill

are lower, skills are lower, or both. Recent research addresses the relative importance of each factor.

In Table 1, the columns labeled “actual” show the percentage shortfalls in hourly wages of all employed blacks and Hispanics compared to the wages of all employed whites. The shortfalls for blacks relative to those of Hispanics indicate whether disparity in wages is a uniquely African American experience. (A negative number denotes a shortfall.) Black males earn 25 percent less than white males; Hispanic males earn 15 percent less. For females, wages are 17 percent lower for blacks and 7 percent lower for Hispanics. The gaps in annual earnings are generally larger because minorities tend to be employed for fewer hours.¹¹ These gaps are large and statistically significant – that is, they are unlikely to arise solely by chance.

The pattern of disparity is replicated in many other measures of social and economic achievement, including schooling, health, incarceration, and occupational success.¹² Blacks and Hispanics have worse outcomes than whites in American society. Further, blacks, on average, fare worse than Hispanics.

Are these disparities the result of pervasive labor market discrimination or of gaps in skills? The two possible interpretations of the evidence in Table 1 (and their counterparts for other outcomes, presented in the Web appendix) have profoundly different implications for public policy. On the one hand, if persons of identical skill are treated differently in the market on the basis of race or ethnicity, a more vigorous enforcement of civil rights and affirmative action policies is warranted. If, on the other hand, the gaps arise from the level of skills that individuals bring to the labor market, then policies that foster skills should be emphasized.

To resolve this issue, I adjust adult wages by scores on scholastic ability tests measured in the teenage years.¹³ (See the columns labeled “adjusted” in Table 1.) After adjustment, the gaps substantially diminish for black males and are essentially zero for Hispanic males. The gaps are reversed for females: that is, adjusting for their ability, minority females *earn more* than their white counterparts. (A positive number means that, on average, the ability-adjusted wages of minorities are higher than those of whites.)

There are gaps in educational attainment as well. High school dropout rates are higher for minorities, and college attendance and graduation rates are lower. As shown in Table 2, the proportion of blacks entering college is twelve points lower than that of whites. The corresponding figure for Hispanics is fourteen points.

Adjusting for their differences in scholastic ability (using the same measure as was used to adjust wages in Table 1), blacks are sixteen points *more likely* to go to college; and Hispanics are fifteen points more likely. After accounting for differences in adolescent ability, family income in the college-going years and

tuition costs play only minor roles in explaining the gaps.¹⁴

Any serious analysis of economic and social disparities must reckon with the importance of skills in American society.¹⁵ This contention does not deny the validity of numerous studies showing the discriminatory inclinations of firms in the labor market; certainly, America is not yet a color-blind society.

A distinction between group- and individual-level discrimination clarifies the role of discrimination in the labor market. Racial discrimination at the individual level involves treating a job candidate differently than otherwise identical candidates by virtue of his or her race, when race has no direct effect on productivity. For instance, audit pair studies at various firms, in which auditors of different races and ethnicities pose as equally qualified job candidates, show evidence of pervasive discrimination against individuals.¹⁶

Racial discrimination at a randomly selected firm does not, however, provide an accurate assessment of the discrimination that takes place in realized market transactions.¹⁷ Participation in the labor market is selective: that is, minorities seek the more tolerant firms. Measured wages reflect this sorting. Therefore, the impact of market discrimination on wages is determined not by the most discriminatory participants in the market, or even by the average level of discrimination among firms, but rather by the level of discrimination at the firms where minorities actually work. Numerous studies that measure discrimination by audit pair methods do not detect the margin at which market transactions occur. Thus, the discrimination reported in audit studies does not conflict with the small gap in ability-adjusted wages. Blacks constitute roughly 12 percent of the U.S. population; if nondiscriminatory or less-discriminatory firms have 12 percent or more

Table 2

Differences in College Entry Proportions between Minorities and Whites, mid-1990s

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	Black-White	Hispanic-White
Actual	-0.12	-0.14
Adjusted	0.16	0.15

Source: Stephen V. Cameron and James J. Heckman, "The Dynamics of Educational Attainment for Black, Hispanic, and White Males," *Journal of Political Economy* 109 (3) (2001).

of the jobs, the contribution of discrimination to overall wage gaps will be small.

This is not to deny that minorities experience bigotry or to downplay the real costs of locating nondiscriminatory employers. But unequal reward to skills is not the first-order explanation for observed gaps in racial achievement in contemporary American society. Any serious attack on the problem of racial and ethnic disparity must address disparity in skills.¹⁸

Gaps in Skills. The data reveal an uncomfortable fact: minorities *as a group* are generally less skilled than whites. The gap is especially pronounced for the measure of scholastic ability used to adjust wages and schooling in Tables 1 and 2.¹⁹

One possible explanation for the racial gap in test scores is that the tests are culturally biased. However, a large body of literature refutes such claims.²⁰ The tests used to make the adjustments in Table 1 predict performance in a number of activities for all race and ethnic groups.

In part, the test scores reflect the differences in the years of schooling attained at the time individuals are tested. Minorities generally have lower levels of education when they take the test and hence earn lower scores. Accounting for this disparity does not change the main message of

Table 1: that gaps in skills, not gaps in payments according to skill level, determine the lion's share of racial wage disparity.²¹

Another possible explanation for the gap in test scores is that expectations of discrimination in the labor market substantially reduce the educational aspirations of African American children and their parents. The evidence shows otherwise.²²

It has been argued that "stereotype threat" is a major factor. It is said to arise from the response of minority test takers to the information that their performance on a test will be used as part of a study to gauge differences in minority and majority abilities. Some claim that this factor causes much of the gap in test scores between minorities and whites. Evidence shows that telling minority students that the tests they are taking are being used to compare the abilities of minorities with those of whites reduces their performance on tests.²³

The test used to produce the evidence in Tables 1 and 2 does not frame the exam in a way that triggers stereotype threat. In addition, the quantitative importance of stereotype threat in accounting for test score gaps is slight.²⁴ Test score gaps between minorities and majorities are real, and they measure something that

matters for performance in economic and social life. However, they do not estimate all that is important.

Gaps in Soft Skills. Most discussions of racial and ethnic achievement gaps focus on measures of scholastic ability. Indeed, many analysts measure the achievement gap exclusively by differences in scores on standardized academic tests. This emphasis reflects a broad consensus in American society about the value of achievement tests that are used to monitor the success and failure of schools and students. The No Child Left Behind Act has pushed this focus to what some have described as a mania. The program has created a culture of “teaching to the test” in schools, with consequent neglect of the subjects and by-products of schooling that are not tested.²⁵

Success in life requires more than book learning or high scores on achievement tests.²⁶ As filmmaker Woody Allen put it, “Eighty percent of success is showing up.”²⁷ While the cognitive skills measured by achievement tests are powerful predictors of life success, so are socio-emotional skills. Sometimes called “soft skills” or character traits, these include motivation, sociability (the ability to work with and cooperate with others), attention, self-regulation, self-esteem, and the ability to defer gratification. Good schools and functional families foster soft skills as well as cognitive skills.²⁸ Soft skills are as predictive, if not more predictive, of educational success, wages earned, and participation in crime or in healthy behaviors as are cognitive skills.²⁹ Disadvantaged children of all race groups possess lower levels of soft skills.³⁰

The Early Emergence of Skill Gaps. Gaps in skills between the advantaged and the disadvantaged emerge at early ages and persist. Figure 1 shows achieve-

ment scores by age for white children classified by their mothers’ education level, a measure of social advantage. More-educated mothers marry more-educated men, have access to greater financial resources for their children, and provide their children with more nurturing and supportive environments than do less-educated women.³¹

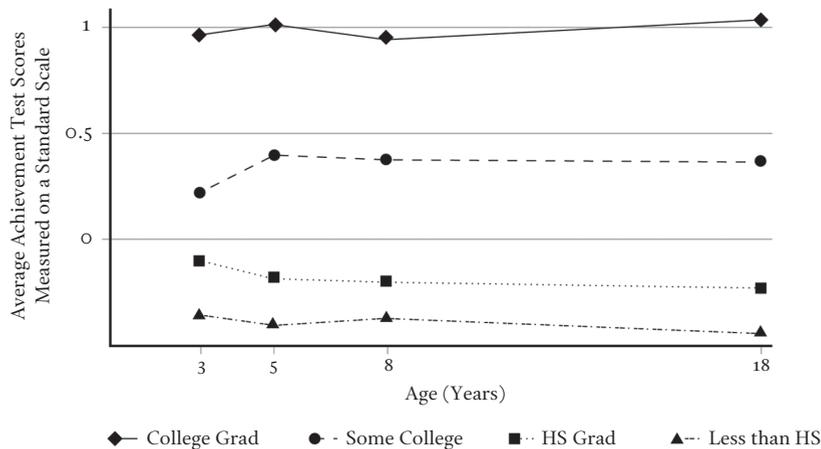
Figure 1 has two noteworthy features. First, gaps in achievement test scores by children of different social backgrounds are substantial. The gap between more-educated whites and less-educated whites is similar to the gap in test scores between blacks and whites.³² Second, the gaps arise early and persist throughout adolescence. Schools have little impact on these disparities, even though the quality of schooling attended varies greatly across social classes.³³ As multiple studies have shown, children from socially and economically disadvantaged families fall behind their more well-off counterparts before schooling starts, and low achievement scores persist throughout their education.³⁴ Similar gaps emerge and persist in indices of soft skills when children are classified by parental, social, and economic status.³⁵ Again, schooling does little to widen or narrow these gaps.³⁶

Biology and Genetics. Genetic determinists argue that inherited genes explain the link between children’s abilities and the level of privilege that parents are able to provide them. From this standpoint, Figure 1 would indicate the power of genes to perpetuate inequality across generations. In *The Bell Curve*, psychologist Richard Herrnstein and political scientist Charles Murray implicitly attribute black-white gaps in scholastic achievement test scores to genetic differences between blacks and whites. Their 1994 book raised a firestorm of criticism that, ironically,

Figure 1

Average Achievement Test Scores of Children by Age and by Maternal Education

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Scores are reported in standardized units (they are transformed to “z” scores, that is, normalized scores with unit variance). Source: Jeanne Brooks-Gunn, Flavio Cunha, Greg Duncan, James J. Heckman, and Aaron Sojourner, “A Reanalysis of the IHDP Program,” unpublished manuscript (Infant Health and Development Program, Northwestern University, 2006).

convincingly discredited the idea that genetics are the sole or even main source of black-white disparity.³⁷

The standard estimate of heritability in behavioral genetics is 50 percent.³⁸ That is, genes inherited from parents account for 50 percent of the variability in measured behaviors across individuals. Genes do not fully determine life outcomes; neither do environments. Extreme claims about the influence of either are at odds with the evidence.

Culture and environment can powerfully impact child outcomes. A striking example is the gap in achievement test scores between genetically similar, but culturally different, Ashkenazi and Sephardic Jews in Israel. The discrepancy between the two groups is roughly two-thirds of the gap in measured achievement between blacks and whites.³⁹ The results from the intervention analyses discussed below further strengthen the

conclusion that environments help shape outcomes – and that environmental improvements can boost achievement.

Schooling raises scores on achievement tests that measure acquired knowledge along with “pure ability.” On the test Herrnstein and Murray used to measure intelligence (the same test used to adjust for scholastic ability in the analyses in Tables 1 and 2),⁴⁰ personality traits account for a substantial portion of the variability in scores.⁴¹

The lessons of modern genetics are more subtle than what is presented by the genetic determinists. The “nature versus nurture” debate is over,⁴² replaced with the understanding that the two factors are intertwined. Indeed, environmental conditions affect gene expression. Substantial evidence shows that early adversity affects biology and human development. Disadvantage literally shapes the biology of disadvantaged children.⁴³

By studying the gene expression of genetically identical (monozygotic) twins, scientists have observed how environmental conditions trigger gene expression.⁴⁴ Early environments are especially important. By age three – and certainly by age fifty – the genetic expressions of identical twins differ as a result of their separate life experiences, producing diverse life outcomes.⁴⁵

One study of gene-environment interactions shows that a variant of a particular gene predicts male conduct disorder and violence. However, the variant of the gene is most strongly expressed in individuals from adverse child-rearing environments. Many other studies have demonstrated that home life substantially modifies gene expression.⁴⁶

The effects of adversity do not always work toward accentuating the influence of genes. The heritability of many behaviors in children from less-advantaged environments drops to 30 percent, as opposed to the standard 50 percent reported in behavioral genetics.⁴⁷ This evidence is consistent with the notion that genes become relatively more important sources of variability in life outcomes after sufficient environmental resources are available. Under adverse conditions, environments are more determinative of many child outcomes.

Recent research suggests a form of Lamarckian evolution, namely, that adversity is partly heritable. The mother's social and economic hardship affects the gene expression of the child; early environmental influences are especially important.⁴⁸ History is embedded in gene expression. Failing to address early disadvantage produces a biological legacy that persists over generations.⁴⁹

How Best to Foster Skills. What are the best ways to promote skills and reduce achievement gaps? Fixing schools? Sup-

plementing family resources? In the current fiscal climate, we cannot afford to repeat the mistakes of the War on Poverty by trying to do everything. Prioritization is essential. Low-performing schools should be improved, but supplementing the parenting resources of disadvantaged families is an effective and less commonly understood way to improve educational outcomes.

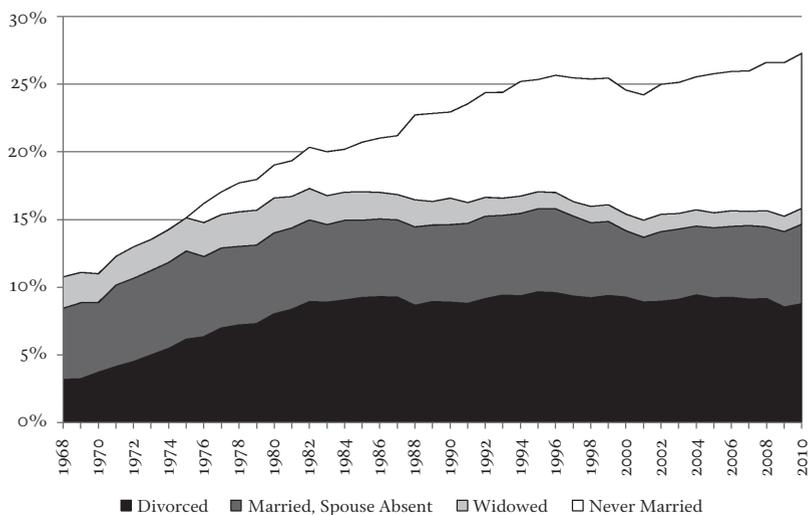
One year after the Moynihan Report discussed family structure as a determinant of life chances, the eminent sociologist James Coleman and his colleagues⁵⁰ published a study that challenged a central premise of American policy. The Coleman Report, as it came to be known, showed that families, not the attributes of schools (the focus of much current public policy), were the principal determinants of the educational success of children as measured by their performance on achievement tests. After forty years, American public policy has yet to learn from the wisdom of Coleman's and Moynihan's recommendations. But their message is clear: family matters, American families are in trouble, and families are the main drivers of children's success in school.

At present, our social policy for fostering children's skills largely focuses on improving schools. This strategy is politically palatable because it avoids the charge of "blaming the victim" as well as any hint of intrusion into the sanctity of the family – a deeply held American value. At the same time, a strictly school-based policy ignores the evidence about the inequality already present when children enter school.⁵¹ School-based policies do not target skill gaps at their source – namely, by addressing the lack of family resources for effective early childhood development.

The evidence on the success of school reforms is at best mixed.⁵² For example,

Figure 2
Percent of Children Under 18 Living with One Parent, by Marital Status of the Parent, 1968 to 2010

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Heckman



Source: Author's tabulations.

not all charter schools are more effective than public schools. The latest evaluations show that 20 percent are better; 20 percent are worse; and most – 60 percent – are about the same.⁵³ Moreover, parental involvement and encouragement appear to be essential ingredients for successful charters.

We can and should improve our schools. But in light of the evidence from the Coleman Report and the vast body of scholarly literature that arose from the study, improving schools by hiring better teachers, monitoring teacher performance, reducing classroom sizes, and improving Internet access is unlikely to be enough to eliminate gaps, although much recent public policy and philanthropic activity is predicated on that assumption. Schools work with the children that parents bring them and are more successful with parents' support.

Part of the hesitation in adopting a family-intervention policy is that we do

not fully understand all of the mechanisms of family influence. How do families produce advantage and disadvantage across the generations? Despite active research in this area, much remains unknown. However, we know for certain that parents do a lot more than pass on their genes, and that good parenting matters a great deal.

Family Environments for All American Children Have Worsened. By many measures, family environments have deteriorated for children of all racial and ethnic groups, although the severity of the problem differs greatly among them. Figure 2 shows that, in 2010, nearly 30 percent of all American children lived with a single parent. Among single-parent families, the percentage of parents who have “never married” has increased more than any other marital status category. Numerous studies in economics, demography, and sociology confirm Moy-

nihan's concern that the child-rearing environments of children in single-parent families are compromised, and with them, child outcomes.⁵⁴

The Consequences of Early Adversity. The central role of the family in producing skills and forming character has been recognized since time immemorial. American public policy must shift attention to the formative years *before* children enter school. Policy must act on the main lessons outlined in Figure 1: that gaps in child test scores emerge early and persist, and that schools contribute little to these gaps.

Maternal education is a strong predictor of a child's achievement. Sociologist Sara McLanahan refers to the "diverging destinies" of children on either side of a "Great Divide."⁵⁵ Fewer than 10 percent of college-educated women bear children out of wedlock. Educated women marry later, and they marry more-educated men. They work more; have more resources and fewer children; and provide much richer child-rearing environments that dramatically influence their children's vocabulary, intellectual performance, nurturance, and discipline.⁵⁶ These advantages are especially pronounced for children of two-parent stable marriages.⁵⁷ Even though they work more than less-educated women, college-educated mothers devote more time to child rearing, especially in providing child-enrichment activities.⁵⁸ They spend more time reading to children and less time watching television with them.

Disadvantaged mothers, as a group, talk to their children less and are less likely to read to them daily. Exposure to this type of parenting results in verbal skill deficits when the children start school.⁵⁹ Disadvantaged mothers tend to encourage their children less, adopt harsher parenting styles, and be less engaged with their children's school work.⁶⁰

The environments provided by teenage mothers are particularly adverse.⁶¹ Fetal alcohol ingestion alone, which is more frequent with teenage and less-educated mothers, appears to have substantial deleterious consequences on adult outcomes.⁶² A central premise of activist and educator Geoffrey Canada's much-discussed Harlem Children's Zone project, and especially his Baby College, is that parental engagement from the earliest years is an essential aspect of fostering later success for disadvantaged children.⁶³

Child poverty is not primarily about access to financial resources.⁶⁴ Johnson's War on Poverty made the mistake of focusing on remediating financial poverty. An overwhelming body of evidence suggests that *parenting* plays a crucial role – what parents do and do not do; and how they interact with and supplement the lives of their children, especially in early childhood. The true measure of child affluence and poverty is the quality of parenting. A lone mother living in financial poverty can create a stimulating early environment for her child.⁶⁵

Supplement Disadvantaged Families, Don't Blame Them. What are the best ways to aid struggling families? How can society devise a cost-effective policy that promotes skill formation in children that acknowledges the trends affecting many American families? Many great minds have recognized that the family is a major source of social inequality. Some have even proposed replacing the family – a policy that has been tried, with disastrous consequences.⁶⁶ Nothing can substitute for a mother's love and care. Public policy must be reformulated to supplement family child-rearing resources when they are lacking and to recognize the dynamics of skill formation – the biology and neuroscience showing that skills beget skills; that success breeds

success; that disadvantage affects the biology of the child and retards his or her development in terms of health, character, and intelligence.

While we do not yet know all of the mechanisms through which families influence their children, we know enough to suggest the broad contours of an effective child development strategy. Supplementing the early years of disadvantaged children addresses a major source of inequality. Indeed, many programs that supplement the child-rearing resources of families are effective. For example, the Perry Preschool Program targeted African American preschoolers in a city just outside Detroit who were born into poverty and had subnormal IQ scores.⁶⁷ For two years, the program taught children to plan, execute, and evaluate daily projects in a structured setting. It fostered social skills. Weekly home visits encouraged parenting. The Perry program was evaluated using random assignment with long-term follow-up for forty years. Rates of return were 7 to 10 percent per annum – higher than the return on equity over the postwar period from 1945 to 2008 and before the recent market meltdown.⁶⁸ Notably, the Perry program did not boost the IQs of participants. It instead fostered soft skills.⁶⁹

The Perry program and other successful child development programs work because they start early. Benefits include enhanced school readiness and reduced burdens on schools' special education programs. They produce benefits in the teen years such as better health behaviors, reduced teenage pregnancy, and lessened participation in crime. They promote higher adult productivity and self-sufficiency. They supplement the family by working with both the mother and the child. Successful programs are voluntary and do not impair the sanctity of the family. Most mothers, however

disadvantaged, want the best for their children. The voluntary nature of these programs avoids coercion and condescension and promotes dignity.

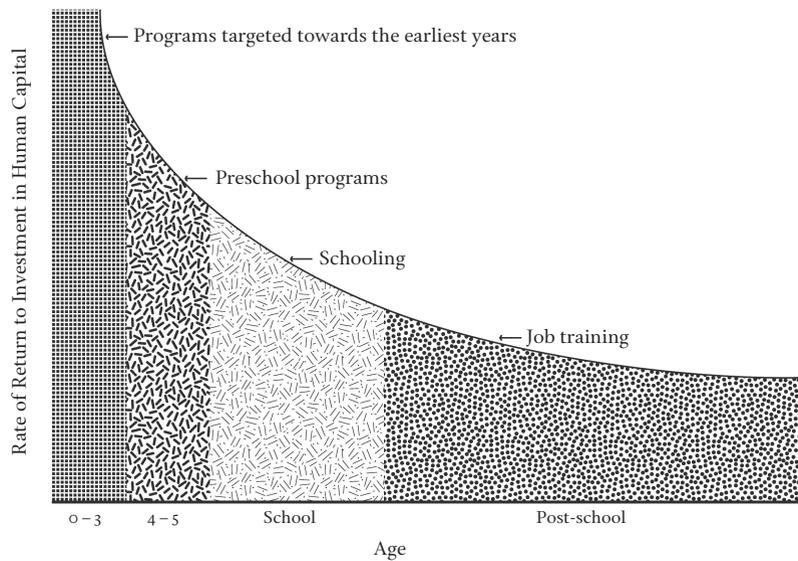
A deeper understanding of skill formation over the life cycle underlies the logic that promotes enrichment of early environments. Although this understanding was not available to the architects of the War on Poverty, we now know that more motivated and healthier children learn better. The process is dynamic and self-sustaining: academic and social success promotes greater self-confidence and a willingness in children to explore.

A strategy that places greater emphasis on parenting resources directed at the early years prevents rather than remediates problems. It makes families active participants in the process of child development. Adolescent remediation strategies as currently implemented are much less effective. This is the flip side of the argument for early intervention. Many skills that are malleable in the early years are much less so in the teenage years. As a consequence, remediating academic and social deficits later is much more costly, and, even then, sometimes ineffective. Certainly, such strategies earn annual rates of return far below the rates estimated for the Perry Program.⁷⁰

High-quality early childhood interventions involve none of the trade-offs between equity and efficiency that plague most public policies. Early interventions produce broadly based benefits and reduce social and economic inequality. At the same time, they promote productivity and economic efficiency. They are both fair and efficient. In contrast, the school-focused No Child Left Behind program diverts skill-development away from areas other than tested math and reading.⁷¹ Because it ignores inequality at the starting gate, No Child Left Behind in fact leaves many children behind.

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Figure 3
Returns to a Unit Dollar Invested in Skill Formation



Source: James J. Heckman, "Schools, Skills and Synapses," *Economic Inquiry* 46 (3) (2008).

Dynamic Synergies and the Timing of Effective Interventions. High-quality early childhood programs are investments with rates of return far higher than those earned by most government-funded skills programs. Figure 3 summarizes the supporting evidence from a large body of research in economics and developmental psychology. The figure plots the rate of return to investment for an extra dollar of investment in the early years, in preschool, in school, and in job training for a person who has an initial (low) common baseline investment at all ages. The return to investment at the earliest ages is high because it creates the foundation of skills that make later investment productive.⁷² This pattern is a manifestation of dynamic synergism – what economists call *dynamic complementarity*. For example, children who enter school with higher levels of character

and cognitive skills gain more from formal education.⁷³ Early investment percolates throughout the life cycle. Early disadvantage makes later investment less productive.

The negative side of dynamic complementarity is the equity-efficiency trade-off for skill investment programs targeted at disadvantaged adolescents and adults who lack a strong skill base. Remediation in later years to achieve the same level of competence is much more costly. This feature of dynamic complementarity accounts for the poor record of a variety of skill enhancement programs launched as part of the War on Poverty that still receive substantial public support.⁷⁴ Current policy does not heed the wisdom inherent in Figure 3. We over-invest in the remediation of disadvantaged adolescents and under-invest in the early years of disadvantaged children.

In contrast to the high rate of return per annum earned by the Perry program and other early childhood programs, returns on other skill-enhancement programs are much lower. Certainly, they are lower for public job training, criminal rehabilitation programs, adult literacy programs, and a variety of other remediation programs targeting adolescents and young adults with low cognitive and character skills.⁷⁵ For example, a recent evaluation of the Job Corps showed meager earnings benefits and a negative rate of return.⁷⁶ Reducing pupil-teacher ratios in schools also has a negative rate of return.⁷⁷ We need to listen to the logic of developmental biology in devising strategies to reduce disparities in parenting across all racial and ethnic groups.

Engage the Private Sector. How can we fund such programs? Despite strained government budgets, it would be possible to fund effective new programs if they replaced the numerous ineffective programs that currently receive government support. Few public programs of any sort would meet the standard set by the high rates of return earned by early childhood programs. Implementing high-quality early childhood programs would ease the budgetary burden of remediation.

Engaging the private sector – including philanthropic, community, and religious organizations – would bolster the resource base supporting early childhood. Bringing in diverse partners would encourage experimentation with new approaches that build on the success of templates such as the Perry program and, as another example, the Abecedarian program.⁷⁸ Educare is one promising program that fosters public and private partnerships.⁷⁹ Engaging diverse groups would also encourage the development of intervention programs that are culturally and religiously sensitive, and thus better prepared to

respect the sanctity of the family and the diversity of values that characterize modern American society. *James J. Heckman*

A New Strategy Based on New Knowledge. In contemporary American society, the racial gap in achievement is primarily caused by gaps in skills. We live in a skill-based society, where both cognitive and soft skills determine life success. Inequality in skills and school performance is strongly linked to inequality in family environments. The precise mechanisms through which families produce skills are under investigation, but much is already known: namely, parenting matters. The true measure of child poverty and advantage corresponds to the quality of parenting a child receives, not just the money available to a household.

A growing percentage of American children across all racial and ethnic groups is being raised in dysfunctional families. The widening divide between the early environments of advantaged and disadvantaged children foreshadows even greater inequality in the next generation of Americans. We have learned a lot about how to foster skills since the 1960s, when the War on Poverty attempted to remediate skills deficits in people of all ages and developmental stages.

Investments that foster early life skills enhance the productivity of investment at later ages. They support schools and enhance the productivity of adult job training. Because of the dynamic complementarity of skill formation, policies that attack inequality at its early origins are cost effective. They promote equality and, at the same time, promote economic efficiency. Such policies have no equity-efficiency trade-off.

The malleability and plasticity of young children declines with age. This fact makes investment in disadvantaged, low-skilled young adults less effective. To achieve the

same adult outcomes, later-life remediation for disadvantage costs far more than early-life prevention. There is an equity-efficiency trade-off for later-life remediation activities.

Our current policies to reduce achievement gaps ignore these simple truths. America currently places too much emphasis on improving schools compared to improving family resources. Supplementing the parenting resources of dis-

advantaged Americans will bolster American schools and enhance the effectiveness of school reforms. It will lower the burden of later-life remediation. A comprehensive, cost-effective policy to enhance the skills of disadvantaged children of all racial and ethnic backgrounds through voluntary, culturally sensitive support for parenting is a politically and economically sound strategy.

ENDNOTES

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² See John J. Donohue and James J. Heckman, "Continuous Versus Episodic Change: The Impact of Civil Rights Policy on the Economic Status of Blacks," *Journal of Economic Literature* 29 (4) (1991).

³ See Richard Butler and James J. Heckman, "The Impact of the Government on the Labor Market Status of Black Americans: A Critical Review," in *Equal Rights and Industrial Relations*, ed. Leonard J. Hausman, Orley Ashenfelter, Bayard Rustin, Richard F. Schubert, and Donald Slaiman (Madison, Wis.: Industrial Relations Research Association, 1977); Amitabh Chandra, *Is the Convergence of the Racial Wage Gap Illusory?* (National Bureau of Economic Research, 2003); and James J. Heckman and Paul A. LaFontaine, "The American High School Graduation Rate: Trends and Levels," *Review of Economics and Statistics* 92 (2) (2010).

⁴ William Julius Wilson, *The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy* (Chicago: University of Chicago Press, 1987); William Julius Wilson, *More Than Just Race: Being Black and Poor in the Inner City* (New York: W.W. Norton, 2009).

⁵ See Heckman and LaFontaine, "The American High School Graduation Rate."

⁶ See James J. Heckman, Robert J. LaLonde, and Jeffrey A. Smith, "The Economics and Econometrics of Active Labor Market Programs," in *Handbook of Labor Economics*, vol. 3A, ed. Orley Ashenfelter and David Card (New York: North-Holland, 1999).

⁷ See David Ellwood and Christopher Jencks, "The Uneven Spread of Single-Parent Families: What Do We Know? Where Do We Look for Answers?" in *Social Inequality*, ed. Kathryn M. Neckerman (New York: Russell Sage, 2004).

⁸ Sara McLanahan, "Diverging Destinies: How Children Are Faring Under the Second Demographic Transition," *Demography* 41 (4) (2004).

- ⁹ Daniel P. Moynihan, *Employment, Income, and the Ordeal of the Negro Family* (Indianapolis: Bobbs-Merrill Company, 1965). See also, <http://www.dol.gov/oasam/programs/history/webid-meynihan.htm>.
- ¹⁰ See the essays in *The ANNALS of the American Academy of Political and Social Science* 621 (1) (2009), especially Douglas S. Massey and Robert J. Sampson, "Moynihan Redux: Legacies and Lessons"; and William Julius Wilson, "The Moynihan Report and Research on the Black Community."
- ¹¹ See this essay's Web appendix at http://jenni.uchicago.edu/understanding_b-w_gap.
- ¹² See the gaps documented in the Web appendix at http://jenni.uchicago.edu/understanding_b-w_gap; and the recent review by Roland Fryer, "Racial Inequality in the 21st Century: The Declining Significance of Discrimination," in *Handbook of Labor Economics*, vol. 4 (Amsterdam and New York: North-Holland, forthcoming 2011).
- ¹³ I use a procedure developed by Derek A. Neal and William R. Johnson, "Basic Skills and the Black-White Earnings Gap," in *The Black-White Test Score Gap*, ed. Christopher Jencks and Meredith Phillips (Washington, D.C.: Brookings Institution, 1998).
- ¹⁴ See Cameron and Heckman, "The Dynamics of Educational Attainment for Black, Hispanic, and White Males." Because the results are similar for men and women, I report only the pooled results.
- ¹⁵ See Pedro Carneiro, James J. Heckman, and Dimitriy V. Masterov, "Understanding the Sources of Ethnic and Racial Wage Gaps and Their Implications for Policy," in *Handbook of Employment Discrimination Research: Rights and Realities*, ed. Robert L. Nelson and Laura Beth Nielsen (New York: Springer, 2005); and Pedro Carneiro, James J. Heckman, and Dimitriy V. Masterov, "Labor Market Discrimination and Racial Differences in Pre-Market Factors," *Journal of Law and Economics* 48 (1) (2005).
- ¹⁶ Devah Pager, "The Use of Field Experiments for Studies of Employment Discrimination: Contributions, Critiques, and Directions for the Future," *The ANNALS of the American Academy of Political and Social Science* 609 (2007).
- ¹⁷ See James J. Heckman, "Detecting Discrimination," *Journal of Economic Perspectives* 12 (2) (1998).
- ¹⁸ Roland Fryer, "Racial Inequality in the 21st Century." Fryer reports ability-adjusted disparities for many other outcomes. In virtually all cases he considers, measured gaps are diminished (but not fully eliminated) by accounting for ability.
- ¹⁹ See figures in the Web appendix, http://jenni.uchicago.edu/understanding_b-w_gap.
- ²⁰ See Christopher Jencks, "Racial Bias in Testing," in *The Black-White Test Score Gap*, ed. Jencks and Phillips; Paul R. Sackett, Matthew J. Borneman, and Brian S. Connelly, "High Stakes Testing in Higher Education and Employment: Appraising the Evidence for Validity and Fairness," *American Psychologist* 63 (4) (2008).
- ²¹ Carneiro, Heckman, and Masterov, "Understanding the Sources of Ethnic and Racial Wage Gaps"; Carneiro, Heckman, and Masterov, "Labor Market Discrimination and Racial Differences."
- ²² Ibid.
- ²³ Claude M. Steele and Joshua Aronson, "Stereotype Threat and the Test Performance of Academically Successful African Americans," in *The Black-White Test Score Gap*, ed. Jencks and Phillips.
- ²⁴ See Paul R. Sackett, Chaitra M. Hardison, and Michael J. Cullen, "On Interpreting Stereotype Threat as Accounting for African American-White Differences on Cognitive Tests," *American Psychologist* 59 (1) (2004).

- A Post-
Racial
Strategy for
Improving
Skills to
Promote
Equality
- ²⁵ Daniel M. Koretz, *Measuring Up: What Educational Testing Really Tells Us* (Cambridge, Mass.: Harvard University Press, 2008); Richard Rothstein, Rebecca Jacobsen, and Tamara Wilder, *Grading Education: Getting Accountability Right* (New York: Economic Policy Institute and Teachers College Press, 2008).
- ²⁶ Mathilde Almlund, Angela L. Duckworth, James J. Heckman, and Tim Kautz, "Personality Psychology and Economics," *Handbook of the Economics of Education*, ed. Eric A. Hanushek, S. Machin, and L. Wößmann (Amsterdam: Elsevier, forthcoming 2011).
- ²⁷ William Safire, "On Language; the Elision Fields," *The New York Times*, August 13, 1989.
- ²⁸ See the evidence summarized in Almlund, Duckworth, Heckman, and Kautz, "Personality Psychology and Economics."
- ²⁹ Ibid.
- ³⁰ See the evidence cited in Pedro Carneiro and James J. Heckman, "Human Capital Policy," in *Inequality in America: What Role for Human Capital Policies?* ed. James J. Heckman, Alan B. Krueger, and Benjamin M. Friedman (Cambridge, Mass.: MIT Press, 2003); Flavio Cunha, James J. Heckman, Lance J. Lochner, and Dimitriy V. Masterov, "Interpreting the Evidence on Life Cycle Skill Formation," in *Handbook of the Economics of Education*, ed. Eric A. Hanushek and Frank Welch, vol. 1 (Amsterdam: North-Holland, 2006).
- ³¹ See Annette Lareau, *Home Advantage: Social Class and Parental Intervention in Elementary Education*, 2nd ed. (Lanham, Md.: Rowman and Littlefield, 2000).
- ³² See the analyses in the Web appendix at http://jenni.uchicago.edu/understanding_b-w_gap.
- ³³ It is not possible to reliably measure cognition before age three. See Michael Lewis and Harry McGurk, "Evaluation of Infant Intelligence," *Science* 178 (4066) (1972).
- ³⁴ See the evidence summarized in Cunha, Heckman, Lochner, and Masterov, "Interpreting the Evidence on Life Cycle Skill Formation."
- ³⁵ See the evidence summarized in Carneiro and Heckman, "Human Capital Policy"; Cunha, Heckman, Lochner, and Masterov, "Interpreting the Evidence on Life Cycle Skill Formation"; James J. Heckman, "Schools, Skills and Synapses," *Economic Inquiry* 46 (3) (2008).
- ³⁶ Similar gaps arise when children are classified by various combinations of maternal ability, long-term family income, and maternal education. See the Web appendix, http://jenni.uchicago.edu/understanding_b-w_gap.
- ³⁷ See, for example, James J. Heckman, "Lessons from the Bell Curve," *Journal of Political Economy* 103 (5) (1995); Bernie Devlin, Steven E. Feinberg, Daniel P. Resnick, and Kathryn Roeder, eds., *Intelligence, Genes, and Success: Scientists Respond to the Bell Curve* (New York: Springer, Copernicus, 1997).
- ³⁸ David C. Rowe, *The Limits of Family Influence: Genes, Experience, and Behavior* (New York: Guilford Press, 1994).
- ³⁹ See Yona Rubinstein and Dror Brenner, "Pride and Prejudice: Evidence from the 'Promised Land,'" unpublished manuscript (Brown University, 2010). Note, however, that there is a small amount of genetic variation between the two groups.
- ⁴⁰ See Christopher Winship and Sanders Korenman, "Does Staying in School Make You Smarter? The Effect of Education on IQ in the Bell Curve," in *Intelligence, Genes, and Success*, ed. Devlin, Feinberg, Resnick, and Roeder; Neal and Johnson, "Basic Skills and the Black-White Earnings Gap"; Karsten T. Hansen, James J. Heckman, and Kathleen J. Mullen, "The Effect of Schooling and Ability on Achievement Test Scores," *Journal of Econometrics* 121 (1–2) (2004).
- ⁴¹ See Lex Borghans, Bart H.H. Golsteyn, James J. Heckman, and John Eric Humphries, "IQ, Achievement, and Personality" (Department of Economics, University of Chicago,

- 2010). See also the evidence in Almlund, Duckworth, Heckman, and Kautz, "Personality Psychology and Economics."
- ⁴² Matt Ridley, *Nature Via Nurture: Genes, Experience, and What Makes Us Human*, 1st ed. (New York: Fourth Estate, 2003).
- ⁴³ See the essays in the *Annals of the New York Academy of Sciences: The Biology of Disadvantage* 1186 (2010).
- ⁴⁴ Avshalom Caspi, Joseph McClay, Terrie E. Moffitt, Jonathan Mill, Judy Martin, Ian W. Craig, Alan Taylor, and Richie Poulton, "Role of Genotype in the Cycle of Violence in Maltreated Children," *Science* 297 (5582) (2002).
- ⁴⁵ See Mario F. Fraga, Esteban Ballestar, Maria F. Paz, Santiago Ropero, Fernando Setien, Maria L. Ballestar, Damia Heine-Suñer, Juan C. Cigudosa, Miguel Urioste, Javier Benitez, Manuel Boix-Chornet, Abel Sanchez-Aguilera, Charlotte Ling, Emma Carlsson, Pernille Poulsen, Allan Vaag, Zarko Stephan, Tim D. Spector, Yue-Zhong Wu, Christoph Plass, and Manel Esteller, "Epigenetic Differences Arise During the Lifetime of Monozygotic Twins," *Proceedings of the National Academy of Sciences of the United States of America* 102 (30) (2005).
- ⁴⁶ See Terrie E. Moffitt, "Gene-Environment Interaction in Problematic and Successful Aging," unpublished manuscript (Duke Institute for Genome Sciences and Policy, Duke University); presented at the Workshop on Genetic Methods and Life Course Development, National Institute on Aging, Bethesda, Maryland, February 11 – 12, 2008. For the figures posted on the display website for the Marshall Lecture, see http://jenni.uchicago.edu/Milan_2008/.
- ⁴⁷ Eric Turkheimer, Andreana Haley, Mary Waldron, Brian D'Onofrio, and Irving I. Gottesman, "Socioeconomic Status Modifies Heritability of IQ in Young Children," *Psychological Science* 14 (6) (2003).
- ⁴⁸ Frances A. Champagne and James P. Curley, "How Social Experiences Influence the Brain," *Current Opinion in Neurobiology* 15 (2005); Frances A. Champagne, Ian C.G. Weaver, Josie Diorio, Sergiy Dymov, Moshe Szyf, and Michael J. Meaney, "Maternal Care Associated with Methylation of the Estrogen Receptor-Alpha1b Promoter and Estrogen Receptor-Alpha Expression in the Medial Preoptic Area of Female Offspring," *Endocrinology* 147 (6) (2006). Ethologist Stephen Suomi reports parallel findings on genetic moderation of environmental influences for rhesus monkeys, which have 95 percent human genes. See Stephen J. Suomi, "Developmental Trajectories, Early Experiences, and Community Consequences: Lessons from Studies with Rhesus Monkeys," in *Developmental Health and the Wealth of Nations: Social, Biological, and Educational Dynamics*, ed. Daniel P. Keating and Clyde Hertzman (New York: Guilford Press, 1999); Stephen J. Suomi, "Gene-Environment Interactions and the Neurobiology of Social Conflict," *Annals of the New York Academy of Sciences* 1008 (2003).
- ⁴⁹ Gunnar Kaati, Lars Olov Bygren, Marcus Pembrey, and Michael Sjostrom, "Transgenerational Response to Nutrition, Early Life Circumstances and Longevity," *European Journal of Human Genetics* 15 (7) (2007); Eva Jablonka and Gal Raz, "Transgenerational Epigenetic Inheritance: Prevalence, Mechanisms, and Implications for the Study of Heredity and Evolution," *The Quarterly Review of Biology* 84 (2) (2009); Christopher W. Kuzawa and Elizabeth Sweet, "Epigenetics and the Embodiment of Race: Developmental Origins of US Racial Disparities in Cardiovascular Health," *American Journal of Human Biology* 21 (1) (2009); Peter D. Gluckman, Mark A. Hanson, and Alan S. Beedle, "Non-Genomic Transgenerational Inheritance of Disease Risk," *BioEssays* 29 (2) (2007).
- ⁵⁰ See James S. Coleman, *Equality of Educational Opportunity* (Washington, D.C.: Office of Education, U.S. Department of Health, Education, and Welfare, 1966).
- ⁵¹ See Susan B. Neuman, *Changing the Odds for Children at Risk: Seven Essential Principles of Educational Programs that Break the Cycle of Poverty* (Westport, Conn.: Praeger, 2009).

- ⁵² See Diane Ravitch, *The Death and Life of the Great American School System: How Testing and Choice Are Undermining Education* (New York: Basic Books, 2010); Philip Gleason, Melissa Clark, Christina Tuttle, and Emily Dwyer, *The Evaluation of Charter School Impacts* (National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education, 2010).
- ⁵³ Ravitch, *The Death and Life of the Great American School System*.
- ⁵⁴ See, for example, McLanahan, "Diverging Destinies"; Sara McLanahan and Gary D. Sandefur, *Growing Up with a Single Parent: What Hurts, What Helps* (Cambridge, Mass.: Harvard University Press, 1994). See Donna K. Ginther and Robert A. Pollak, "Family Structure and Children's Educational Outcomes: Blended Families, Stylized Facts, and Descriptive Regressions," *Demography* 41 (4) (2004). Ginther and Pollack show that children living in blended families (without both biological parents present) do about the same as children of lone parents.
- ⁵⁵ McLanahan, "Diverging Destinies."
- ⁵⁶ Betty Hart and Todd R. Risley, "American Parenting of Language-Learning Children: Persisting Differences in Family-Child Interactions Observed in Natural Home Environments," *Developmental Psychology* 28 (6) (1992); Betty Hart and Todd R. Risley, *Meaningful Differences in the Everyday Experience of Young American Children* (Baltimore, Md.: P.H. Brookes, 1995).
- ⁵⁷ See Sara McLanahan, *Fragile Families and the Reproduction of Poverty* (Princeton, N.J.: Center for Research on Child Wellbeing and Fragile Families, 2008).
- ⁵⁸ Suzanne M. Bianchi, John P. Robinson, and Melissa A. Milkie, *Changing Rhythms of American Family Life*, ed. Douglas L. Anderton, Dan Clawson, Naomi Gerstel, Joya Misra, Randall G. Stokes, and Robert Zussman (New York: Russell Sage, 2006).
- ⁵⁹ See the evidence on school readiness cited in Neuman, *Changing the Odds for Children at Risk*. See also Kristin L. Moilanen, Daniel S. Shaw, Thomas J. Dishion, Frances Gardner, and Melvin Wilson, "Predictors of Longitudinal Growth in Inhibitory Control in Early Childhood," *Social Development* 19 (2) (2009).
- ⁶⁰ Ronald Ferguson, "Why America's Black-White School Achievement Gap Persists," in *Ethnicity, Social Mobility, and Public Policy*, ed. Glenn C. Loury, Tariq Modood, and Steven M. Teles (New York: Cambridge University Press, 2005); Lareau, *Home Advantage*.
- ⁶¹ See Marco Francesconi, *Adult Outcomes for Children of Teenage Mothers* (Institute for the Study of Labor, 2007); Judith A. Levine, Harold Pollack, and Maureen E. Comfort, "Academic and Behavioral Outcomes among the Children of Young Mothers," *Journal of Marriage and Family* 63 (2) (2001).
- ⁶² See J. Peter Nilsson, *Does a Pint a Day Affect Your Child's Pay? The Effect of Prenatal Alcohol Exposure on Adult Outcomes* (Institute for Labour Market Policy Evaluation, 2008); Ann Streissguth, "Offspring Effects of Prenatal Alcohol Exposure from Birth to 25 Years: The Seattle Prospective Longitudinal Study," *Journal of Clinical Psychology in Medical Settings* 14 (2) (2007); Xingqi Zhang, Joanna H. Sliwowska, and Joanne Weinberg, "Prenatal Alcohol Exposure and Fetal Programming: Effects on Neuroendocrine and Immune Function," *Experimental Biology and Medicine* 230 (6) (2005).
- ⁶³ Paul Tough, *Whatever It Takes: Geoffrey Canada's Quest to Change Harlem and America* (New York: First Mariner Books, 2009).
- ⁶⁴ Susan E. Mayer, *What Money Can't Buy: Family Income and Children's Life Chances* (Cambridge, Mass.: Harvard University Press, 1997).
- ⁶⁵ When an American Indian tribe substantially enhanced its income by opening a casino, child behavioral outcomes improved dramatically but not uniformly. Most of the improvement arose in children whose parents improved their parenting. See E. Jane Costello, Scott N. Compton, Gordon Keeler, and Adrian Angold, "Relationships Between Poverty

and Psychopathology: A Natural Experiment,” *Journal of the American Medical Association* 290 (15) (2003).

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- ⁶⁶ Senate Committee on Labor and Public Welfare, Special Sub-committee on Indian Education, *A National Tragedy – A National Challenge*, 91st Cong., 1st sess., 1969, S. Rep. 91-501.
- ⁶⁷ Lawrence J. Schweinhart, Helen V. Barnes, and David Weikart, *Significant Benefits: The High/Scope Perry Preschool Study through Age 27* (Ypsilanti, Mich.: High/Scope Press, 1993).
- ⁶⁸ James J. Heckman, Seong Hyeok Moon, Rodrigo Pinto, Peter A. Savelyev, and Adam Q. Yavitz, “The Rate of Return to the High/Scope Perry Preschool Program,” *Journal of Public Economics* 94 (1–2) (2010).
- ⁶⁹ James J. Heckman, Lena Malofeeva, Rodrigo Pinto, and Peter A. Savelyev, “Understanding the Mechanisms Through Which an Influential Early Childhood Program Boosted Adult Outcomes” (Department of Economics, University of Chicago, 2010).
- ⁷⁰ See the evidence in Heckman, LaLonde, and Smith, “The Economics and Econometrics of Active Labor Market Programs”; Cunha, Heckman, Lochner, and Masterov, “Interpreting the Evidence on Life Cycle Skill Formation.”
- ⁷¹ Rothstein, Jacobsen, and Wilder, *Grading Education*.
- ⁷² See Flavio Cunha and James J. Heckman, “The Technology of Skill Formation,” *American Economic Review* 97 (2) (2007).
- ⁷³ Greg J. Duncan, Chantelle J. Dowsett, Amy Claessens, Katherine Mugnuson, Aletha C. Huston, Pamela Klebanov, Linda S. Pagani, Leon Feinstein, Mimi Engel, Jeanne Brooks-Gunn, Holly Sexton, Kathryn Duckworth, and Crista Japel, “School Readiness and Later Achievement,” *Developmental Psychology* 43 (6) (2007); Jeanne Brooks-Gunn and Lisa B. Markman, “The Contribution of Parenting to Ethnic and Racial Gaps in School Readiness,” *The Future of Children* 15 (1) (2005).
- ⁷⁴ See the evidence in Heckman, LaLonde, and Smith, “The Economics and Econometrics of Active Labor Market Programs”; Cunha, Heckman, Lochner, and Masterov, “Interpreting the Evidence on Life Cycle Skill Formation.”
- ⁷⁵ See the evidence in Cunha, Heckman, Lochner, and Masterov, “Interpreting the Evidence on Life Cycle Skill Formation.”
- ⁷⁶ See Peter Z. Schochet, John Burghardt, and Sheena McConnell, “Does Job Corps Work? Impact Findings from the National Job Corps Study,” *American Economic Review* 98 (5) (2008).
- ⁷⁷ See the evidence in Cunha, Heckman, Lochner, and Masterov.
- ⁷⁸ For discussion of a range of proven programs, see Arthur J. Reynolds, Arthur J. Rolnick, Michelle M. Englund, and Judy A. Temple, eds., *Childhood Programs and Practices in the First Decade of Life: A Human Capital Integration* (Cambridge: Cambridge University Press, 2010).
- ⁷⁹ <http://www.educateschools.org/pages/index.php?q=node/6>.