

Introduction: Two-Generation Mechanisms of Child Development

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Programs that aim to improve the lives of children from disadvantaged backgrounds are facing a challenge. On the one hand, scholars and policy makers agree that we must invest in children to secure our country's future and to promote educational and economic opportunity, suggesting that we should expand programs for children, especially during early childhood.¹ On the other hand, there is a growing sense in some quarters that existing programs for children are not working as well as they could.

A few widely cited models, such as Perry Preschool and the Abecedarian Project, have demonstrated that high-quality programs can make a big difference in children's lives.² The children who participated in these programs have shown long-term gains in educational attainment, employment, and earnings relative to their peers, and those who participated in Perry Preschool had lower rates of arrest.

The evidence from larger-scale efforts, such as Head Start and some state prekindergarten programs, is less clear-cut. On the one hand, numerous assessments of Head Start, the nation's largest preschool program, which enrolls about 900,000 mostly disadvantaged children, have found improvements in children's test scores, as well as their rates of high school graduation, college attendance, and delinquency, especially among children from disadvantaged backgrounds. Similarly, assessments of state prekindergarten programs, which have a much shorter history than Head Start, have found that in elementary school, the participants—especially those from disadvantaged backgrounds—had better language skills and were less likely to repeat a grade or be suspended.³

On the other hand, a recent randomized trial of Head Start found that the test score gains children experienced at the end of the program typically faded by the end of kindergarten.⁴

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And a well-executed evaluation of a preschool intervention in Tennessee found a similar fade-out by the end of first grade.⁵ It's not unusual for gains in cognitive test scores to fade—the same phenomenon occurred in the Perry Preschool and Abecedarian projects. Still, the recent Head Start and Tennessee evaluations have caused some people to doubt the efficacy of early childhood education and of universal prekindergarten more broadly.⁶

Although it's too early to assess the long-term benefits of the new prekindergarten programs, it's hard to be optimistic that current programs can boost poor children's development enough to overcome the huge divide in educational achievement and economic opportunity between children from poor families and children from economically secure families. The United States has experienced a dramatic increase in income inequality over the past four decades, which, not surprisingly, has been accompanied by a growing income gap in children's test scores.⁷ So even if the \$30 billion or so that the federal and state governments spend on preschool programs and the \$640 billion the nation spends on public education are having large effects, they are not large enough to compensate for the growing gap in achievement between children from high- and low-income families.⁸

The school problems of poor children stem in large part from the home environment. Numerous studies show that parents and the home environment they provide exert a continuing influence on children as they grow up.⁹ Betty Hart and Todd Risley, in their well-known study from nearly two decades ago, found major differences in the home language environments provided by poor and more affluent parents. They estimate that the average child on welfare is

exposed to 62,000 words per week at home, compared with 125,000 words per week for more privileged children.¹⁰ Similarly, based on the large sample of the Panel Study of Income Dynamics, Meredith Phillips shows very large differences, all of them favoring children from more affluent families, in time spent in conversation with adults, in primary caregivers' verbal responsiveness, and in time spent in literary activities.¹¹ The upshot is that children from poor families show up for kindergarten already far behind in school readiness, and they fall further behind during the school years.¹²

These important differences in poor children's home environments, the parenting they receive, and the effectiveness of public schools in helping them overcome their disadvantages are certain to affect their economic opportunities as adults. Intergenerational data from the Panel Study of Income Dynamics show that 42 percent of children from families in the bottom 20 percent of the income distribution themselves wind up in the bottom 20 percent as adults, and only 6 percent of them make it to the top 20 percent. By contrast, only 9 percent of children from families in the top 20 percent of income wind up in the bottom 20 percent, and 39 percent of them remain in the top 20 percent. Equal opportunity this is not.

Purpose of This Issue

Given these sobering facts about socioeconomic differences in home environments, as well as the modest track record of intervention programs that seek to reduce socioeconomic differences in educational attainment and economic opportunity, the time seems ripe to step back and review what we know about the mechanisms that shape these differences by influencing children's

development. Understanding these mechanisms of development could help us design intervention programs that boost children's intellectual and socioemotional development and that could, in turn, help close the gaps between students from poor and more affluent families. One of *Future of Children's* fundamental goals is to write about effective intervention programs for children that are based on an understanding of the processes underlying child development. Thus we decided to focus not only on intervention programs themselves, but on the mechanisms of child development that intervention programs are trying to influence. If we understand how these mechanisms work, we can use this knowledge to design or redesign interventions to boost child development.

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A second focus of the issue is prompted by the aphorism that parents are their children's first teachers. Several foundations—including the Foundation for Child Development, the Bill and Melinda Gates Foundation, the George Kaiser Family Foundation, the Annie E. Casey Foundation, the W. K. Kellogg Foundation, and the Aspen Institute—have supported the idea that “two-generation”

programs could improve the effectiveness of preschool interventions for children. The two-generation model is based on the assumption that serving parents and children simultaneously with high-quality intervention programs would be more effective (and perhaps more efficient) than serving them individually. The rationale for two-generation programs, and the results of such programs to date (most of which simultaneously enroll parents in job training and their children in quality child care), are examined in this issue by Lindsay Chase-Lansdale and Jeanne Brooks-Gunn.

In addition to existing two-generation programs, the editors identified six widely acknowledged mechanisms or pathways through which parents and the home environment they create are thought to influence children's development. These pathways are stress, education, health, income, employment, and assets. We then asked a carefully selected group of scholars to summarize the theories of development relevant to each mechanism; explain how each mechanism is expected to influence parents and, through parents, their children's development; and review the research on whether intervention programs have been shown to strengthen each parenting mechanism and whether each mechanism does, in fact, influence children's intellectual or socioemotional development.

Overview

The following is a brief review of what our authors found.

Two-Generation Programs in the Twenty-First Century

Chase-Lansdale and Brooks-Gunn explain the theories behind two-generation programs that aim to build the human capital

of both adults and children, and they review the evidence for these programs' efficacy. A first wave of two-generation programs in the 1980s and '90s produced mostly disappointing results, but the evaluations they left behind pointed to promising new directions. More recently, a second wave of two-generation programs—the authors dub them “Two-Generation 2.0”—has sought to rectify the flaws of earlier efforts, largely by building strong connections between components for children and adults, by ensuring that children and adults receive services of equal duration and intensity, and by incorporating advances in education and workforce development. These Two-Generation 2.0 programs are still in their infancy, and we have yet to see clear evidence that they can achieve their goals or be implemented cost-effectively at scale. Nonetheless, Chase-Lansdale and Brooks-Gunn write, the theoretical justification for these programs is strong, their early results are promising, and the time is ripe for innovation, experimentation, and further study.

Stress and Child Development

Ross Thompson examines the child's early environment and how stress affects early development. Sources of stress—including marital conflict, domestic violence, child abuse or neglect, and parental depression—are abundant in the environment of poor and at-risk parents and children. Poverty itself can lead to conditions that increase stress on all family members. Thompson examines early development to understand how parenting quality and other aspects of children's environments shape the development of their biological systems, with particular attention to stress as the mediating mechanism. Research shows that children are “biologically designed” to incorporate

early social experiences in their developing biological systems in ways that can “assist or undermine their coping and adjustment.” Reviewing the research on stress, Thompson examines the types of experience that can undermine children's development. He then introduces the concept of developmental plasticity, and he examines research on early interventions that offset the effects of excessive environmental stress by improving children's stress neurobiology. An important finding, as Thompson shows in a review of several empirical studies, is that the parent-child relationship can be a source both of excess stress that causes developmental problems and of sensitive caregiving that prevents the negative effects of stress and even ameliorates damage done by excessive stress earlier in a child's life. He concludes by pointing out that infants quickly understand and adapt to the characteristic behaviors of their caretakers. These early social experiences “guide them biologically and behaviorally to prepare for a life of security or adversity.” It follows that one of the foundations of two-generation programs is found precisely in these social experiences with caretakers and that improving both preventive and ameliorative intervention programs can be accomplished through a deeper understanding of these experiences and their consequences.

Intergenerational Payoffs of Education

Better-educated parents generally have children who are themselves better educated, healthier, wealthier, and better off in almost every way than the children of the less educated. But this simple correlation does not prove that the relationship is causal. Neeraj Kaushal sifts through the evidence from economics and public policy and reviews large national and international studies to

conclude that, indeed, education has large intergenerational payoffs in many areas of children's lives, and that these payoffs persist over time. Thus the rationale for two-generation programs that boost parents' education is compelling. However, Kaushal writes, the U.S. education system reinforces socioeconomic inequality across generations by spending more money on educating richer children than on educating poorer children. By themselves, then, two-generation programs will not necessarily ameliorate the structural factors that perpetuate inequality in this country.

Two-Generation Programs and Health

Parents' health and children's health are closely intertwined, write Sherry Glied and Don Oellerich, and healthier parents have healthier children. Genetics accounts for some of this relationship, but much of it can be traced to environment and behavior. Thus programs that improve parents' health should improve their children's health as well. Yet we have few two-generation programs that explicitly aim to work this way, save for a narrow category of programs that target pregnant women, newborns, and very young children. Glied and Oellerich assess these programs, discuss why there are so few of them, and suggest ways to expand them. Their chief conclusion is that structural barriers in the U.S. health care system stand in the way of such programs. Some of these barriers have to do with health insurance, access to care, and benefits, but the biggest one is the fact that physicians typically specialize in treating either children or adults, rather than families as a whole. The Affordable Care Act has begun to break down some of these barriers, the authors write, but much remains to be done.

Boosting Family Income to Promote Child Development

Decades of developmental research have shown that there is no question that poverty disrupts child development. But as with education and health, establishing a causal relationship is more difficult, which means that it's difficult to make the case that boosting family income will have major effects on child development. Greg Duncan, Katherine Magnuson, and Elizabeth Votruba-Drzal examine whether policies that increase family income but do nothing else can promote child development. The authors also want to know whether the timing of increased income—that is, when it appears during a child's development—can make a difference. They first review three “theoretical frameworks”—family and environmental stress, family resources and investment in children, and cultural practices—that social scientists have developed to explore and explain how poverty could influence children's development. These theories all support the argument that poverty harms children's development and behavior. Reviewing the empirical evidence on whether poverty has a causal effect on school achievement, educational attainment, behavior, or health, the authors find that the causal effect is moderate, but that poverty early in life has the strongest impacts. The authors conclude that giving families cash and in-kind income supplements is likely to have positive effects on their children, especially if the income supplements come during early childhood.

Parents' Employment and Children's Wellbeing

According to Carolyn Heinrich, the bottom line is that parents' work can have both positive and negative effects on their children. For example, employment lifts family income,

which has many beneficial consequences for children, and working parents can be positive role models. On the other hand, work can reduce the amount of time parents spend with their children, expose parents to severe stress that spills over into family life, and induce mothers to stop breastfeeding sooner. The families most likely to experience employment's negative consequences are precisely those where the parents work in low-paying, low-quality jobs that lack autonomy and benefits such as sick leave and maternity leave; these conditions are especially detrimental for single mothers and their children. Public policy, Heinrich writes, could bolster the positive effects of parents' work and ameliorate the negative ones. In particular, if we want low-income parents' work to enhance their children's wellbeing, we need to expand workplace flexibility, help parents place their children in high-quality child care, and help parents train for, find, and keep a well-paying job with benefits. All of these policies could be components of two-generation programs.

Family Assets and Child Outcomes

For more than three decades, there has been a growing movement in research, practice, and policy based on the view that even low-income parents can save and that if they did, they and their children would be better off in the long run. Michal Grinstein-Weiss, Trina Williams Shanks, and Sondra Beverly argue that savings could aid children's development by giving their families a cushion against hard times, reducing parental stress, helping parents invest in children, and improving parents' personal efficacy as well as their attitudes and expectations about the future. Rigorous studies show that low- and moderate-income parents will save money over the short term if their savings are matched by a third party. One study even shows that

providing matched saving accounts increases homeownership in the short term, although families that do not receive incentives for savings are just as likely to own a home after 10 years. Other experimental studies find that interventions to increase savings have long-term positive impacts on parents' education. The authors also find that automatically opening a \$1,000 savings account for newborns, and then matching parent contributions to the account, can dramatically increase the percentage of families that save money. However, the average amount of money that low- and moderate-income families save in these automatic accounts is quite modest, around \$100 after 30 months. The authors conclude that parents can be induced to save, especially if an account is opened for them and if their savings are matched, but it is not yet clear whether these savings improve either their wealth or the wellbeing of their children in the long term.

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The Promise of Two-Generation Mechanisms

The United States has always advertised itself as a nation of boundless opportunity, in which every child has a shot at taking advantage of equal opportunity to achieve financial security as an adult. In recent decades, however, U.S. income inequality has increased dramatically, and the chances of getting ahead, especially by rising from the bottom, are worse than in many other nations with advanced economies.¹³

The traditional route to opportunity is through education. To help poor children use education to achieve financial security as adults, the nation is spending much more on preschool programs than it did 10 years ago, based on the assumption that children who attend preschool will be better prepared to take advantage of the public schools. Further, the public schools themselves are in a nearly continuous state of reform, epitomized in recent years both by President Bush's No Child Left Behind law and by President Obama's Race to the Top and Investing in Innovation initiatives.¹⁴ But despite major investments in preschool programs and the reform of public schools, poor children continue to fall further and further behind in educational achievement and in college enrollment and completion. Preschool education and school reform may be part of the road to increasing opportunity for the poor, but the experience of the past several decades shows that something more is needed.

Based on the extensive evidence that parents are a vital force in children's development, and capitalizing on the recent interest in two-generation programs, this issue explores six mechanisms that might be part of that something more. Three generalizations are justified.

First, in addition to the Two-Generation 2.0 programs, the articles here present solid evidence that stress regulation, parental education, parental health, family income, employment, and assets are linked to children's development. In each case, there is correlational evidence suggesting that these mechanisms are at the very least associated with children's development. In most cases, there is even stronger evidence from experimental or

quasi-experimental studies (as opposed to correlational studies) that programs that raise the level of parents' education, health, income, etc. can have a causal impact on children's development.

Second, research shows that among social intervention programs generally, positive effects are infrequent and, when they occur, usually modest.¹⁵ Thus we are not discouraged by the finding that most of the positive effects on development reported by our authors are moderate. The field of intervention science should learn to savor moderate success, and work to modify current programs and to develop new programs with more substantial effects. Further, even small effects can accumulate and lead to large effects.¹⁶ For example, Isabel Sawhill and her colleagues at the Brookings Institution found that providing disadvantaged children with a sequence of five well-evaluated programs from early childhood through adolescence increased their projected lifetime incomes by roughly five times the cost of the five programs.¹⁷

Third, some of the fields of intervention research that our authors review are in their early stages. For example, the research on stress and developing biological systems has only just left its infancy. Nonetheless, as Thompson shows, the field has already produced effective intervention programs that help children entering new foster care homes and that improve poor preschool children's classroom self-regulation skills. Chase-Lansdale and Brooks-Gunn argue that we are now developing more effective two-generation intervention programs of the type that involve simultaneous quality preschool for children and job training for parents. Perhaps the most enticing example

of promise is found in increasing poor parents' income during the early years of children's lives. Duncan and his colleagues present several research findings suggesting that income supplements early in life can have positive effects on developing children. Fortunately, a large-scale experiment subjecting this finding to a rigorous test will soon be under way.

Taken together, the research reviewed in this issue of *Future of Children* at least suggests that each of the six two-generation mechanisms we present can enhance children's development—and in some cases the evidence is more than suggestive. Moreover, there is good reason to expect that interventions based on these mechanisms will improve as research proceeds.

ENDNOTES

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