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## The Cradle of Prosperity Raising the New American Economy

By Richard Louv

**Abstract:** Leading economists conclude that investments in young children may be the best way to stimulate economic growth, and investments in young children's social and emotional development may be the most productive of these investments. The science base for these conclusions comes from two independent streams of research: neuroscience and developmental psychology research indicating the impact of early experiences and environments on later learning and health; and longitudinal studies of the economic impact of early supports for low-income families with young children. Programs that have had the greatest impact are those that include high-quality child care that establishes a foundation for social/emotional skills in individual children while providing economic and social supports for their families.

Nobel Prize-winning economist James J. Heckman has worked for decades to unlock the secrets of healthy economic growth and job creation. "Economists want to measure hard concepts, things like a monetary aggregate, points on an interest rate, freight-car loadings," he says. Heckman, who is director of the Economics Research Center at the University of Chicago, has been devoted to the development of a scientific basis for economic policy evaluation, in particular "lifecycle dynamic models" for unemployment, wage growth and skill formation. But he didn't expect his inquiry to end up where it has: with data that drive him to the conclusion that investments in young children may be the best way to stimulate economic growth, and investments in young children's social and emotional development may be the most productive of these investments.

"Skill begets skill, and that process begins early," says Heckman. He has concluded that the origin of a nation's productive strength—the cradle of prosperity, if you will—is best measured neurologically as well as in traditional economic terms. In this context, he points to accumulating scientific evidence that suggests a new, more productive strategy for job creation and long-term economic health.

The conclusions reached by Heckman and other leading economists challenge conventional policies designed to stimulate economic growth. In the late twentieth century, the most popular regional investment strategy had less to do with skill formation than with real estate and financial incentives. In fierce competition, state and local governments spent billions of public dollars on bricks and mortar. They erected stadiums for major



league sports teams, and they offered tax breaks and free land to lure companies to their cities, or to convince local enterprises to stay home and expand. How has this strategy worked? Not well, says Art Rolnick, senior vice president and director of research and public affairs at the Federal Reserve Bank of Minneapolis. "That model simply moves businesses around without growing them, with no aggregate economic benefit to the nation," says Rolnick. "It distorts market outcome and diverts public funds from more productive investments in economic development." In Minnesota, he points out, "One suburb invested a huge amount of money luring a big-box headquarters from another suburb. At best, this is a zero-sum game."

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This is not to say that such incentives are never successful. Still, the first step toward creating lasting prosperity is to separate reality from myth. When civic leaders and the owners of a major league sports team argue for public support for a new or upgraded stadium, they often point to three assumed benefits: the attraction of new businesses, the creation of local jobs, and an enhanced sense of community through civic pride. However, "businesses that are locating new plants look mainly at the quality of the work force, transportation, and public schools," according to Geraldine Gambale, editor of *Area Development* magazine, headquartered in Westbury, N.Y. The publication helps executives decide where to set up shop. Businesses, in fact, deem major-league teams so inconsequential that her magazine doesn't even include that factor in its annual survey. In San Diego, when the city government and the San Diego Chargers were negotiating a public subsidy for a stadium expansion, a deal that later proved disastrous for the city, Marney Cox, an economist with the San Diego Association of Governments, said: "I've never seen a sports franchise on any list of business priorities. What they care about is education. They don't want to be training their work force from scratch."

Increasing numbers of economists now believe that the most efficient way to build human capital is by investing in a different kind of infrastructure, one more durable than sports stadiums, longer-lasting than any convention center, more foundational than tax breaks for business. That will require investing in children when they are very young, thereby bolstering the developing architecture of the brain.

### **The Research Base for Building Human Capital**

The emerging scientific case for a child development/economic development investment strategy is based on two independent streams of research. One stream comes from the institutions that study early childhood development and the impact of experiences and environments. This research has established that a child's brain is built over time, that a large percentage of that brain is built by age 5, and that a child's home and community environments play critical roles in the formation of strong or weak brain architecture, which provides the foundation for lifelong learning, behavior and health. The development of sturdy brain architecture relies on experiences,



interactions and the quality of early relationships in the home, in the school, and in the wider community. “A lot of formal economic models view the [human capital] development process solely in terms of raising IQs. Or else they assume that IQ is purely heritable. Neither view is correct,” says Heckman.

Genetics does play a role in this process, but not necessarily a final role. “Brains come with blueprints—that’s our genetic inheritance. But life circumstances and personal experiences affect how a child’s brain architecture actually gets built,” explains Jack Shonkoff, a pediatrician and chair of the National Scientific Council on the Developing Child, which brings neuroscientists, developmental psychologists and economists together to analyze, integrate, and communicate research on how early development unfolds. “Genes establish the initial blueprint, but how those genes influence the ongoing development of individual competence is shaped by interactions with the environment—in the home, in the neighborhood, in the child’s full environment of relationships.”

If a child experiences persistent toxic stress (from continuous economic instability or poverty, recurrent abuse, chronic neglect, or the like), the developing architecture of his or her brain can be severely undermined by the release of harmful chemicals in the brain that make it more difficult for neurons to form connections with each other. Weakening of the brain’s architecture, in turn, weakens a child’s ability to respond adaptively to future stresses, including normal life obstacles. This can increase an individual’s vulnerability to later health problems, ranging from anxiety and depression to cardiovascular disease, hypertension, and diabetes. Also, the child’s ability to learn and interact positively with other children is diminished—along with his or her future contribution to the economic and civic health of the community.

Fortunately, however, the human brain has a marvelous plasticity, an ability to construct new neurological pathways to compensate for significant threats or missed opportunities. “Brain development is predisposed to make adaptive adjustments along the way. If problems arise, compensations will be made to get the process back on track, but the evolving architecture of the brain is strongest when it is built on a sturdy foundation,” says Shonkoff. This important neuroscientific principle makes economic sense to Heckman and Rolnick: in the brain, as in the economy, getting it right the first time is ultimately more effective and less costly, to society as well as to the individual, than trying to fix it later.

The second stream of research establishes early parameters for measuring the economic benefits of building brain architecture. These data include a set of longitudinal studies of children from low-income families, including the Perry Preschool Project in Ypsilanti, Michigan; the Abecedarian Project in Chapel Hill, North Carolina; the Chicago Child-Parent Centers; and New York’s Elmira Prenatal/Early Infancy Project. The long-term Perry Preschool Project, initiated in 1962, revealed that, by age 40, program participants were less likely to be placed in special education programs, more likely to have completed high school, more likely to hold a job, more likely to have higher

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earnings, and less likely to have committed crimes than those in the control group who did not attend preschool and whose parents did not receive home-based assistance. According to an analysis of the Perry Preschool findings by Rolnick and research associate Rob Grunewald, investment in high quality early education for disadvantaged preschoolers yielded a rate of return of 18 percent annually (inflation adjusted) over a 62-year period, with all but 2 percent returned to society as a whole.

Other researchers have calculated slightly different cost-benefit ratios, but the findings are consistent, indicating strong returns in greater economic productivity and less crime. A 2005 cost-benefit study for the Rand Corporation on preschool in California listed a range of economic gains, including stronger work-force performance, international competitiveness, and the distribution of wealth across generations. Solid brain architecture means a solid child who will grow into an adult who is more likely to give back positively to his or her community. Indeed, this is an investment that keeps on giving. "The economic case for why we should invest in early childhood development is closed," says Rolnick.

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#### **Investing in Long-Term Prosperity**

If investing in young children can be a powerful stimulant to job creation and long-term prosperity, how can we best make that investment? One approach is to educate business executives, legislators, and other influential citizens and organizations about the accumulating scientific evidence linking child development to economic development. Presumably, change would then take place on many independent fronts. Rolnick favors a market-oriented approach, but with an emphasis on public/private partnerships involving local businesses, government, and nonprofit organizations. He is pursuing that strategy through the Minnesota School Readiness Business Advisory Council, a 200-member organization of CEOs, senior executives and business leaders. A different approach is prescribed by Robert G. Lynch, chairman of the department of economics at Washington College, and author of "Exceptional Returns," a report for the Economic Policy Council. Lynch calls for a national, government-supported early childhood development program for all children from low-income families. Such a program would cost billions of dollars, but Lynch calculates that the fiscal payoff would arrive just in time to save the Social Security trust fund from insolvency.

Whatever the size of the investment, and however it is paid for, Heckman calls for careful targeting and an awareness of the scientific research—which reveals a more complex challenge than recent education reform, including school readiness programs, have met. "American society puts its faith in public training programs to make up for 17 years of neglect. It's nuts," Heckman told *The Region* magazine, published by The Federal Reserve Bank of Minneapolis, in June 2005. Skill development depends on sturdy brain architecture and that architecture is built over time—not through a crash course. Moreover, a proper accounting of human capability recognizes both



cognitive skills (the process of acquiring knowledge through reasoning and problem-solving) and noncognitive skills (such as motivation and self-control). “Noncognitive skills are powerfully predictive of a number of socioeconomic measures—crime, teenage pregnancy, educational achievement, and the like,” says Heckman. But in addition to preventing undesirable outcomes, such programs help children grow up to be healthier and more productive adults—more socially skilled and more motivated.

The development of non-cognitive skills has not been a priority of the federally mandated Leave No Child Behind approach to education reform. Stimulated in part by the nation's business community, recent reform has focused on school readiness, literacy, and standardized testing. Conventional concern also emphasizes school dropout rates, the number of years of education completed, and the degree obtained. But Heckman considers those only partial measures.

“The No Child Left Behind Act and all the related policies are predicated on the assumption that we succeed with an educational intervention if we improve test scores. Such policies are at best misleading,” he says. “Twenty percent of all high school degrees these days are GEDs (General Equivalency Diplomas, in lieu of high school graduation). And it's even higher in New York, Florida, California, and Illinois. It was 2 percent in the 1960s, and it's risen to 20 percent.” The achievement test scores of individuals who receive GEDs show they are “as smart as high school graduates, but they don't earn anywhere near what high school graduates earn because they lack persistence and motivation, self-control and the ability to look forward—noncognitive skills.” The most notable benefit of early childhood education, says Heckman, is its effect “on socialization and not ... on IQ. Social skills and motivation have large payoffs in the labor market.” Such skills are more difficult to measure, especially by current standardized testing, but in the long run they may be more decisive than a few percentage points in language or math skills.

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### **Key Ingredients for Success**

Early childhood education is not the only way to ensure solid brain architecture, nor is it separable from other types of support for children, their families, and their communities. Essential ingredients include good prenatal care, adequate nutrition for mothers, stable working hours, conditions and benefits for young parents, and parenting education for both mothers and fathers.

The research of Ross Thompson, professor of psychology at the University of California, Davis, has focused on how early relationships provide the foundation for young children's understanding of the psychological world as well as for skill development. “Young children are motivated to learn by their emotional attachments to caregivers who value learning,” he says. “The skills of human capital are skills in cooperation, emotional understanding, and morality—not merely intellectual skills.” Thus, strengthening a family's ability to communicate and build healthy relationships can contribute to the development of solid brain architecture in their children—which has important



implications for parenting programs. “The same parent-child conversations that teach about emotions also strengthen memory skills.”

Implications for change beyond the family are also important. “Today, we have a better understanding of childcare as an important developmental influence on the future of our society,” says Thompson. “But while regulations tend to focus on easily measurable qualities like group size and adult-to-child ratios, the most important quality of childcare for young children is their relationship with their childcare provider.” However, because childcare providers are paid poorly and given few benefits, their job turnover rate is high and the children experience highly inconsistent relationships. Thompson suggests that quality and stability of relationships should be “one of the most significant markers of the quality of childcare.”

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Just as skill begets skill, a strong family economy can beget strong brain architecture in children, which ultimately contributes to a stronger national economy. If parents work three jobs or are laid off—or if their employer provides no health insurance—their children’s lives are more likely to be disrupted and they are more vulnerable to the consequences of experiencing toxic stress. “We often ignore one of the most effective, promising ways to assist kids, and that is through economic intervention for parents,” says Greg Duncan, professor of Education and Social Policy at the Institute for Policy Research at Northwestern University. From 2000 to 2003, he directed the Northwestern University/University of Chicago Joint Center for Poverty Research. “We have a number of ways of doing this; for example, making a program like the Earned Income Tax Credit (EITC) more generous. Programs along these lines put more income into the hands of low-income families.” Duncan is currently writing a book about New Hope, a rigorously evaluated demonstration program implemented from 1994 through 1998 in Milwaukee that guaranteed income above the poverty level to people who were willing to work at least 30 hours a week.

More than 1,300 people were included in the New Hope study, where each applicant was randomly assigned to the program or control group. If they were assigned to New Hope, they were eligible for three years of services and benefits, including a monthly earnings supplement, subsidized childcare, and health insurance. Differences that emerged between the two populations were analyzed extensively.

“For children enrolled in New Hope, these benefits had a very positive effect, especially on the boys. Teachers reported boys’ achievement levels and behavior improved markedly,” says Duncan. “This is encouraging. In the last ten years, welfare reform has moved many single mothers into the labor force and off the welfare rolls, but reform hasn’t done much to boost family income levels. For many women, the welfare check is reduced as the paycheck increases. New Hope offered a chance to test a framework that encourages work while increasing a family’s real income.” Analyses of some of these studies have shown that the children who benefited most



from a rise in total household income were 3, 4 and 5 years old at the beginning of the program—years when a considerable amount of brain architecture is being built.

### **Maximizing Return on Investment for Society**

In the end, prosperity's cradle may not be where most economists and policy makers thought it was. As James Heckman emphasizes, economists should consider the implications of child development as seriously as monetary aggregate, points on an interest rate, and freight-car loadings. "The things we economists used to think of as soft and fuzzy have a real effect on economic behavior," he says.

Americans may differ on how much to invest, and who should do the investing, but the science of brain development shows that an early, targeted investment in vulnerable children can maximize long-term returns and prevent lifelong public expenses. More importantly, wise investment can help young people grow into adults who are able to contribute to their full potential and ensure the stability of communities that, in turn, will nurture the next generation of productive individuals and businesses, as well as civil society as a whole. "The scientific evidence indicates that we should not have to choose between our moral responsibility for children and the desire for strong economic returns on our investments," says Shonkoff. "Both goals are served well when we truly understand the science of early childhood and early brain development, and when we make a commitment to close the gap between what we know and what we do to promote the well-being of children."

As young brains grow, so grows the economy—along with the vitality of our communities and ultimately the health and sustainability of our democratic institutions. ●

The interviewer: Richard Louv is the Council's executive editor and author of seven books about family, community and nature, including *Last Child in the Woods*.