What Happens When the Poor Receive a Stipend?

By MOISES VELASQUEZ-MANOFF

The Great Divide is a series about inequality.

Growing up poor has long been associated with reduced educational attainment and lower lifetime earnings. Some evidence also suggests a higher risk of depression, substance abuse and other diseases in adulthood. Even for those who manage to overcome humble beginnings, early-life poverty may leave a lasting mark, accelerating aging and increasing the risk of degenerative disease in adulthood.

Today, more than one in five American children live in poverty. How, if at all, to intervene is almost invariably a politically fraught question. Scientists interested in the link between poverty and mental health, however, often face a more fundamental problem: a relative dearth of experiments that test and compare potential interventions.

So when, in 1996, the Eastern Band of Cherokee Indians in North Carolina's Great Smoky Mountains opened a casino, Jane Costello, an epidemiologist at Duke University Medical School, saw an opportunity. The tribe elected to distribute a proportion of the profits equally among its 8,000 members. Professor Costello wondered whether the extra money would change psychiatric outcomes among poor Cherokee families.

When the casino opened, Professor Costello had already been following 1,420 rural children in the area, a quarter of whom were Cherokee, for four years. That gave her a solid baseline measure. Roughly one-fifth of the rural non-Indians in her study lived in poverty, compared with more than half of the Cherokee. By 2001, when casino profits amounted to $6,000 per person yearly, the number of Cherokee living below the poverty line had declined by half.

The poorest children tended to have the greatest risk of psychiatric disorders, including emotional and behavioral problems. But just four years after the supplements began, Professor Costello observed marked improvements among those who moved out of poverty. The frequency of behavioral problems declined by 40 percent, nearly reaching the risk of children who had never been poor. Already well-off Cherokee children, on the other hand, showed no improvement. The supplements seemed to benefit the poorest children most dramatically.

When Professor Costello published her first study, in 2003, the field of mental health remained on the fence over whether poverty caused psychiatric problems, or psychiatric problems led to poverty. So she was surprised by the results. Even she hadn't expected the cash to make much difference. "The expectation is that social interventions have relatively small effects," she told me. "This one had quite large effects."

She and her colleagues kept following the children. Minor crimes committed by Cherokee youth declined. On-time high school graduation rates improved. And by 2006, when the supplements had grown to about $9,000 yearly per member, Professor Costello could make another observation: The earlier the supplements arrived in a child's life, the better that child's mental health in early adulthood.

She'd started her study with three cohorts, ages 9, 11 and 13. When she caught up with them as 19- and 21-year-olds living on their own, she found that those who were youngest when the supplements began had benefited most. They were roughly one-third less likely to develop substance abuse and psychiatric problems in adulthood, compared with the oldest group of Cherokee children and with neighboring rural whites of the same age.

Cherokee children in the older cohorts, who were already 14 or 16 when the supplements began, on the other hand, didn't show any improvements relative to rural whites. The extra cash evidently came too late to alter these older teenagers' already-established trajectories.

What precisely did the income change? Ongoing interviews with both parents and children suggested one variable in particular. The money, which amounted to between one-third and one-quarter of poor families' income at one point, seemed to improve parenting quality.

Vickie L. Bradley, a tribe member and tribal health official, recalls the transition. Before the casino opened and supplements began, employment was often sporadic. Many Cherokee worked "hard and long" during the summer, she told me, and then hunkered down when jobs disappeared in the winter. The supplements eased the strain of that feast-or-famine existence, she said. Some used the money to pay a few months' worth of bills in advance. Others bought their children clothes for school, or even Christmas presents. Mostly, though, the energy once spent fretting over such things was freed up. That "helps parents be better parents," she said.

A parallel study at the University of North Carolina at Chapel Hill also highlights the insidious effect of poverty on parenting. The Family Life Project, now in its 11th year, has followed nearly 1,300 mostly poor rural children in North Carolina and Pennsylvania from birth. Scientists quantify maternal education, income and neighborhood safety, among other factors. The stressors work cumulatively, they've found. The more they bear down as a whole, the more parental nurturing and support, as measured by observers, declines.

By age 3, measures of vocabulary, working memory and executive function show an inverse relationship with the stressors experienced by parents.

These skills are thought important for success and well-being in life. Maternal warmth can seemingly protect children from environmental stresses, however; at least in these communities, parenting quality seems to matter more to a child than material circumstances. On the other hand, few parents managed high levels of nurturing while also experiencing great strain. All of which highlights an emerging theme in this science:

Early-life poverty may harm, in part, by warping and eroding the bonds between children and caregivers that are important for healthy development.

Evidence is accumulating that these stressful early-life experiences affect brain development. In one recent study, scientists at the Washington University School of Medicine in St. Louis followed 145 preschoolers between 3 and 6 years of age for up to 10 years, documenting stressful events — including deaths in the family, fighting and frequent moves — as they occurred. When they took magnetic resonance imaging scans of subjects' brains in adolescence, they observed differences that correlated with the sum of stressful events.

Early-life stress and poverty correlated with a shrunken hippocampus and amygdala, brain regions important for memory and emotional well-being, respectively. Again, parental nurturing seemed to protect children somewhat. When it came to hippocampal volume in particular, parental warmth mattered more than material poverty.

The prospective nature of both studies makes them particularly compelling. But as always with observational studies, we can't assume causality. Maybe the children's pre-existing problems are stressing the parents. Or perhaps less nurturing parents are first depressed, and that depression stems from their genes. That same genetic inheritance then manifests as altered neural architecture in their children.

Numerous animal studies, of course, show that early life stress can have lifelong consequences, and that maternal nurturing can prevent them. Studies on rats, for example, demonstrate that even when pups are periodically stressed, ample maternal grooming prevents unhealthy rewiring of their nervous systems, favorably sculpting the developing brain and making the pups resilient to stress even in adulthood.

Yet in observational human studies, it's difficult to rule out the possibility that the unwell become poor, or that some primary deficiency stresses, impoverishes and sickens. This very uncertainty is one reason, in fact, that Professor Costello's findings are so intriguing, however modest her study size. A naturally occurring intervention ameliorated psychiatric outcomes. A cash infusion in childhood seemed to lower the risk of problems in adulthood. That suggests that poverty makes people unwell, and that meaningful intervention is relatively simple.

Bearing that in mind, Randall Akee, an economist at the University of California, Los Angeles, and a collaborator of Professor Costello's, argues that the supplements actually save money in the long run. He calculates that 5 to 10 years after age 19, the savings incurred by the Cherokee income supplements surpass the initial costs — the payments to parents while the children were minors. That's a conservative estimate, he says, based on reduced criminality, a reduced need for psychiatric care and savings gained from not repeating grades. (The full analysis is not yet published.)

But contrary to the prevailing emphasis on interventions in infancy, Professor Akee's analysis suggests that even help that comes later — at age 12, in this case — can pay for itself by early adulthood. "The benefits more than outweigh the costs," Emilia

Simeonova, a Johns Hopkins Carey Business School economist and one of Professor Akee's co-authors, told me.

Not all changes in the Cherokee's "natural experiment" were benign, however. For reasons neither Professor Costello nor Professor Akee can explain, children who were the poorest when the supplements began also gained the most weight.

Another analysis, meanwhile, found that more accidental deaths occurred during those months, once or twice a year, when the tribe disbursed supplements. The authors attributed that, in part, to increased drinking, as well as to buying cars and traveling more.

Then there's the broader context of gaming, an often contentious issue around the country. Opponents often cite the potential for increases in crime, problem gambling and bankruptcies. And some early studies suggest these concerns may have merit.

But Douglas Walker, an economist at the College of Charleston who has done some consulting for pro-gaming organizations, says many of the studies on gaming have methodological problems. Increased criminal behavior may simply be a function of more visitors to the casino area, he says. If the population increases periodically, it's natural to expect crime to rise proportionally. "The economic and social impacts of casinos are not as clear, not as obvious as they seem," he said.

So Professor Costello's findings are not necessarily a sweeping endorsement of Native American gaming, and casinos generally. Rather, they suggest that a little extra money may confer long-lasting benefits on poor children. And in that respect, the Cherokee experience is unique in several important ways.

First, this was not a top-down intervention. The income supplements came from a business owned by the beneficiaries. The tribe decided how to help itself. Moreover, the supplements weren't enough for members to stop working entirely, but they were unconditional. Both attributes may avoid perverse incentives not to work.

Also, fluctuations in the casino business aside, the supplements would continue indefinitely. That "ad infinitum" quality may both change how the money is spent and also protect against the corrosive psychological effects of chronic uncertainty.

And maybe most important, about half the casino profits went to infrastructure and social services, including free addiction counseling and improved health care. Ann Bullock, a doctor and medical consultant to the Cherokee tribal government, argues that these factors together — which she calls the exercising of "collective efficacy" — also may have contributed to the improved outcomes. She describes a "sea change" in the collective mood when the tribe began to fund its own projects. A group that was historically disenfranchised began making decisions about its own fate.

"You feel controlled by the world when you're poor," she said. "That was simply no longer the case."

Professor Costello and Professor Akee don't entirely agree. They think cold hard cash made the real difference. For one thing, Professor Akee says, outcomes started improving as soon as the supplements began, before many of the communitywide services went into effect.

If that's the primary takeaway, then we have some thinking to do. Some people feel that "if you're poor, it's because you deserve it," Professor Costello said. "If you're sick, it's because you deserve it," she said.

But if giving poor families with children a little extra cash not only helps them, but also saves society money in the long run, then, says Professor Costello, withholding the help is something other than rational.

"You're not doing it because it pains you to do it," she said. "That's a very valuable lesson for society to learn."

Moises Velasquez-Manoff is a science writer and the author of "An Epidemic of Absence."

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