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## The Power of Talking to Your Baby

By **TINA ROSENBERG**

By the time a poor child is 1 year old, she has most likely already fallen behind middle-class children in her ability to talk, understand and learn. The gap between poor children and wealthier ones widens each year, and by high school it has become a chasm. American attempts to close this gap in schools have largely failed, and a consensus is starting to build that these attempts must start long before school — before preschool, perhaps even before birth.

There is no consensus, however, about what form these attempts should take, because there is no consensus about the problem itself. What is it about poverty that limits a child's ability to learn? Researchers have answered the question in different ways: Is it exposure to lead? Character issues like a lack of self-control or failure to think of future consequences? The effects of high levels of stress hormones? The lack of a culture of reading?

Another idea, however, is creeping into the policy debate: that the key to early learning is talking — specifically, a child's exposure to language spoken by parents and caretakers from birth to age 3, the more the better. It turns out, evidence is showing, that the much-ridiculed stream of parent-to-child baby talk — Feel Teddy's nose! It's so soft! Cars make noise — look, there's a yellow one! Baby feels hungry? Now Mommy is opening the refrigerator! — is very, very important. (So put those smartphones away!)

The idea has been successfully put into practice a few times on a small scale, but it is about to get its first large-scale test, in Providence, R.I., which last month won the \$5 million grand prize in Bloomberg Philanthropies' Mayors Challenge, beating 300 other cities for best new idea. In Providence, only one in three children enter school ready for kindergarten reading. The city already has a network of successful programs in which nurses, mentors, therapists and social workers regularly visit pregnant women, new parents and children in their homes, providing medical attention and advice, therapy, counseling and other services. Now Providence will train these home visitors to add a new service: creating family conversation.

The Providence Talks program will be based on research by Betty Hart and Todd R. Risley at the University of Kansas, who in 1995 published a book, "Meaningful Differences in the Everyday Experience of Young American Children." (see [here](#) for a summary.) Hart and Risley were studying how parents of different socioeconomic backgrounds talked to their babies. Every month, the researchers visited the 42 families in the study and recorded an

hour of parent-child interaction. They were looking for things like how much parents praised their children, what they talked about, whether the conversational tone was positive or negative. Then they waited till the children were 9, and examined how they were doing in school. In the meantime, they transcribed and analyzed every word on the tapes — a process that took six years. “It wasn’t until we’d collected our data that we realized that the important variable was how much talking the parents were doing,” Risley told an interviewer later.

All parents gave their children directives like “Put away your toy!” or “Don’t eat that!” But interaction was more likely to stop there for parents on welfare, while as a family’s income and educational levels rose, those interactions were more likely to be just the beginning.

The disparity was staggering. Children whose families were on welfare heard about 600 words per hour. Working-class children heard 1,200 words per hour, and children from professional families heard 2,100 words. By age 3, a poor child would have heard 30 million fewer words in his home environment than a child from a professional family. And the disparity mattered: the greater the number of words children heard from their parents or caregivers before they were 3, the higher their IQ and the better they did in school. TV talk not only didn’t help, it was detrimental.

Hart and Risley later wrote that children’s level of language development starts to level off when it matches that of their parents — so a language deficit is passed down through generations. They found that parents talk much more to girls than to boys (perhaps because girls are more sociable, or because it is Mom who does most of the care, and parents talk more to children of their gender). This might explain why young, poor boys have particular trouble in school. And [they argued](#) that the disparities in word usage correlated so closely with academic success that kids born to families on welfare do worse than professional-class children entirely because their parents talk to them less. In other words, if everyone talked to their young children the same amount, there would be no racial or socioeconomic gap at all. (Some other researchers say that while word count is extremely important, it can’t be the only factor.)

While we do know that richer, more educated parents talk much more to their children than poorer and less educated ones, we don’t know exactly why. A [persuasive answer](#) comes from Meredith Rowe, now an assistant professor at the University of Maryland. She found that poor women were simply unaware that it was important to talk more to their babies — no one had told them about this piece of child development research. Poorer mothers tend to depend on friends and relatives for parenting advice, who may not be up on the latest data. Middle-class mothers, on the other hand, get at least some of their parenting information from books, the Internet and pediatricians. Talking to baby has become part of middle-class culture; it seems like instinct, but it’s not.

If you haven’t heard of Hart and Risley’s work, you are not alone — and you may be wondering why. These findings should have created a policy whirlwind: Here was a

revolutionary way to reduce inequities in school achievement that seemed actually possible. How hard could it be to persuade poor parents to talk to their children more?

Very hard, it turned out — because there was no practical way to measure how much parents talk. Each hour of recording took many hours to transcribe and classify: to count the words uttered near a child and attribute them to a parent, the main child, a sibling, someone else or a TV. The cost was prohibitive.

“The only thing researchers could do was to ask the parent if they were talking a lot,” said Jill Gilkerson, the language research director of the [Lena Research Foundation](#), which develops technology for the study and treatment of language delay. “But you need an objective evaluation. Asking anyone to observe their own behavior with no reference point is completely useless.” Without measurement, parents who did try new things couldn’t know whether they were helpful. Hart and Risley’s research languished.

What has revived it is the technology and measurement practices developed by Lena, which stands for Language Environment Analysis. A child wears clothing with a special pocket for a voice recorder that can unobtrusively record 16 continuous hours — plenty of time for the family to forget it’s there and converse normally. The analysis is done by speech-recognition software, which can count and source words uttered, count conversational turns (one party says something and the other responds) and weed out background noise and TV. For privacy, the recorder can encrypt the actual speech and delete the speech after it is counted. And a family can hit the “erase” button whenever it wants.

Lena’s system came out five years ago, and is now being used in about 200 universities and research hospitals — with deaf children, autistic children and children developing normally. The first studies are only now being published.

The studies most relevant to Providence Talks come from two researchers. Gilkerson gave the recorder to 120 families, who used it and viewed the reports once a week for 10 weeks. Of those families, 27 started out below the baseline. Even with no coaching at all, over the 10 weeks their daily word average rose from about 8,000 to about 13,000 — an increase of 55 percent. (The paper was presented at a conference, but not yet published.)

More recently, Dana Suskind, a pediatric cochlear implant surgeon at the University of Chicago who founded the school’s [Thirty Million Words project](#), did a study with 17 nannies in Chicago. Each attended a workshop on the importance of talk, strategies for increasing it, and how to use the Lena recorder. Then they used it once a week for six weeks. [Suskind found \(pdf\)](#) that the nannies increased the number of words they used by 32 percent and the number of conversational turns by 25 percent.

Suskind has also done a randomized controlled trial with low-income mothers on Chicago’s South Side — not yet published, but with good results: she said that parents asked if they could keep getting reports on their number of words even after the study finished.

All these studies were small, short-term and limited in scope. “One thing is to say we can change adult language behavior,” Suskind said. “Another thing is to show that it is sustainable, and that it impacts child outcomes.”

Providence has the money to be more ambitious. The city plans to begin enrolling families in January, 2014, and hopes to eventually reach about 2,000 new families each year, said Mayor Angel Taveras. It will most likely work with proven home-visitation programs like the [Nurse-Family Partnership](#). The visitors will show poor families with very young children how to use the recorders, and ask them to record one 16-hour day each month.

Every month they will return to share information about the results and specific strategies for talking more: how do you tell your baby about your day? What’s the best way to read to your toddler? They will also talk about community resources, like read-aloud day at the library. And they will work with the family to set goals for next month. The city also hopes to recruit some of the mothers and fathers as peer educators.

Taveras, who was raised by a single mother, an immigrant from the Dominican Republic, chose the program because of the role Head Start played in his own life. At Harvard, he found that his roommate and several friends were also Head Start babies. “It did and still does have a big impact,” he said. “The research on the gap that exists is pretty startling in some ways. But this is something we can address with different strategies. We have an opportunity to level the playing field.”

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*This post has been revised to reflect the following correction:*

### **Correction: April 11, 2013**

*A previous version of this article misstated details about the Thirty Million Words Project. The study involving nannies was held in Chicago, not Denver, and the randomized control model studied low-income mothers of all ages, not teenaged mothers only.*

