

The Everyday Experience of American Babies: Discoveries and Implications

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Like many other professionals inspired by John F. Kennedy and Martin Luther King Jr., Betty Hart and I devoted our early careers to programs to give poor children a head start on learning. We all thought we could break the ‘cycle of poverty’ in one generation through preschool education. We all learned instead that providing 15 to 20 hours a week of enriched experience and practice when they were four and five did not bring poor children up to the level of the average American child in later school success. Betty’s and my response to this was to consider the family lives of the children before they entered preschool. Since children are awake (and able to learn) about 100 to 110 hours in every week of life, they would already have used up over 15,000 hours of learning-opportunity time by age three. We wanted to know how full or empty of learning experience were those hours of opportunity -- and to compare the lives of babies from the poorest families with the lives of babies from working-class and professional families.

Our book *Meaningful Differences in the Everyday Experience of Young American Children* was published in 1995. It was the first report of the voyage of exploration that Betty and I began in 1982 when we set out to find out what parents and babies actually do, all day long, in real life, in American homes. From birth announcement in Kansas City newspapers we recruited 42 new babies from a wide variety of families – some parents were doctors and lawyers, some were business owners, some had white-collar jobs, some had blue-collar jobs, some were working poor, and some were on welfare. When the babies were 7 months old we began to visit their homes each month at different times when they were awake on days, evenings and weekends, until they were 36 months old. During each visit we recorded (with audiotape and notes) everything said to the baby, all talk the baby overheard, and everything the baby did or said during an hour of daily life. Each of the resulting 1200 hours of recordings took about 20 more hours of work: 11 hours to transcribe; another hour to independently transcribe a sample to assess inter-observer agreement; and 8 more hours to code each utterance for context and grammar and to enter it into the computer. We had asked the simple natural history question “*What actually goes on between American parents and babies in everyday family life while babies are learning to talk?*” After 24,000 person-hours -- or 12 person-years -- of work we had collected enough reliable data on enough families to give a first approximate answer to that question. We had our own prior notions of what we might find -- ‘hypotheses’, we called them -- but the most important things we found surprised us. Since the findings seem to have also surprised most people who read about them, we think of them as ‘discoveries’. There were seven surprising discoveries that we reported on in *Meaningful Differences*, and in our 1999 book: *The Social World of Children Learning to Talk*. This paper reviews those discoveries.

1. A lot of talk goes on between average parents and typical infants and toddlers in everyday home life. We found that during each hour they were awake at home average

American babies heard an average of 340 utterances and 1,440 words per hour addressed to them. They were personally responded to 150 times, and received 17 affirmations per hour from their parents.

If this is the average amount of language experience that typical American babies get at home, how do infant and toddler out-of-home daycare programs compare? How do the home lives of special needs babies, or older children, or babies of other cultures compare? And most important to remember, this is the amount of language experience that is being given -- hour after hour, month after month -- to those 'average' children against whose achievements all other children are compared.

2. *There are large and consistent differences between families in the amount of time, encouragement, and talk given to their infants and toddlers.* We found that in an hour together, some parents spent more than 40 minutes of their time interacting with their babies and some others spent less than 15 minutes. Some parents took more than 500 turns of interaction in their 'social dance' with their babies, and some took fewer than 150 turns an hour. Some parents expressed approval and encouragement of their babies' actions more than 40 times in an hour of family life, and some less than 4 times. And, some parents said over 3000 words, and some others said fewer than 200 words in an average hour to their babies.

For each family, the amount of time and talk that parents gave to their baby was consistent across time, so the differences between babies' lifetime experience mounted up. When we extrapolate the talk that we recorded for parents across all the waking hours of their infants' and toddlers' lives, we estimate that by the time children were three years old and starting preschool, some children would have already heard over 33 million words said to them by their parents, while others would have heard only 10 million; and some would have already heard over 500 thousand affirmative statements about their actions from their parents, while others would have heard less than 60 thousand.

This was our most surprising discovery: that the size of the differences between families in the amount of talk to babies is so enormous -- and that those differences add up to massive advantages or disadvantages for children in language experience long before they start preschool.

3. *'Extra' talk is more complex and positive--automatically!* We found that both talkative and taciturn parents used similar numbers of initiations, imperatives, and prohibitions per hour to govern their children. This is the 'business' talk that all parents of young children must do: 'stop that'; 'come here'; 'what you got there'; 'hold still', 'put that down'. The more taciturn parents usually said little else beyond this necessary business talk, but whenever parents talked more than was necessary for just business, the 'extra' talk was *not* about business -- it was 'conversational talk' about other things. It was 'chit-chat' and gossip and running commentary that was automatically rich in the varied vocabulary, complex ideas, subtle guidance, and positive reinforcement that are thought to be important to intellectual development -- the 'good stuff' of Developmental Psychology.

This discovery is vitally important to any effort at parent training. Whenever a parent simply talks more, *or can be induced to talk more*, most of the extra talk *has* to be descriptive and conversational. As commentary and conversation increase, business talk will stay constant and the parent's ratio or 'parenting style' will automatically improve.

Focusing on parenting style misdirects our efforts. We don't have to (try to) get parents to learn *how* to talk differently to their children. We just have to help them practice talking *more*. They all know how: even the most taciturn mothers in our study had moments of 'ebullience' when they were sociable with their children – and at those moments their talk to their babies was the complex and positive 'good stuff'.

4. Toddlers' talkativeness stops growing when it matches the level of their parents' talkativeness. We found that parents talk to their infants and toddlers at the frequency per hour that is typical between all members of their family: amount of talking is a characteristic of the 'microculture' of a family. In a taciturn family talk between everyone is mostly only to get something done, only about necessary business; while in a talkative family everyone has conversations and engages in commentary and 'thinking aloud' *in addition to* the necessary business talk. As toddlers began talking, their utterances containing recognizable words increase in frequency until their utterances match their parent's frequency of talking. At this point growth in talking levels off, and a toddler's frequency of talking stabilizes at whatever level is typical within his or her family – because they are talking about the same kinds of things: business only, or business *and* commentary and conversation. Thus, while babies are being cared for, family traits of high or low sociability and language -use are being transmitted across generations.

5. Expressive language practice is linked to receptive language experience. While *hearing* words during daily life gives children their vocabularies through observational learning, *using* words in daily life gives children their verbal fluency skills through practice-based learning. We found that at three, children of average families express themselves in language about 400 times an hour, children of the most talkative families express themselves over 600 times an hour, while children of the most taciturn families express themselves less than 200 times an hour. If we extrapolate across the waking hours of toddlers' lives, we estimate that by the time they are three years old average American children will have accumulated about 8 million words of expressive language practice, and children of the most talkative families will have accumulated over 12 million words, while children of the most taciturn families will have accumulated less than 4 million words – less than half the expressive language practice of the average children when they enter preschool. Children who are seldom talked to as babies not only have smaller vocabularies, but they are also less practiced speakers.

6. The amount of family talk is a characteristic of low and high social class. We found that welfare parents were taciturn. Working-class parents (with either 'blue-collar' or 'white-collar' occupations) varied greatly from the most talkative to the most taciturn. Parents with advanced, professional degrees were mostly talkative.

We were shocked by this discovery--and amused at our shock. Like our friends and colleagues in our college environs, we unconsciously had assumed that almost everyone was more-or-less like us, except, of course, for those people who were in trouble. Virtually all the people *we* knew talked a lot to their children -- and to everyone else. It was a shock to realize that we, and all our highly educated friends, were as different from average Americans in one direction, as welfare recipients were in the other. Conversely, in our

experience with taciturn families we find that *they* are amused by people who ‘talk all the time’ to babies, and often think it an odd, even silly, thing for adults to be doing.

But, most important was to find such great diversity among American working-class families. Some working-poor families talked to their babies as much as professionals, while some affluent business families talked as little as those on welfare. *And their amount of talk – not their social class or income or race -- predicted their children’s intellectual accomplishments.*

7. Amount of family talk accounts for children’s vocabulary growth and related intellectual outcomes. We found that the large differences in the amount of parent talk that infants and toddlers received, particularly the amount of non-business conversation and commentary, was powerfully related to large differences in the size of the toddlers’ vocabulary growth and to standardized test measures of their intellectual achievement at age three ($r = .78$) and later at age nine ($r = .77$). Parent talkativeness to babies accounted for *all* the correlation that existed between socio-economic status (SES) -- and/or race -- and the verbal intellectual accomplishments of these American children.

Socio-economic status and race are moderately correlated with measures of intellectual achievement. Most scholars assume that SES and race are only ‘marker variables’ and that the ‘real’ things contributing to intellectual achievement are simply associated with SES or race. From our findings, parent talkativeness or, more broadly, parent ‘sociableness’ with their babies seems to be the major ‘real’ variable since it accounted for all the variance (other than measurement error) in those children’s intellectual achievement.

Most scholars also assume that both experience and biology are always involved in human behavior, and that both family culture and genetic makeup interact and contribute to children becoming similar to their parents. Parents may be taciturn or talkative due to both their biological temperament and their own childhood experiences. Of course they pass along their biological temperament to their children through their genes. But, it is through their family culture that they pass on to their children -- while their children are still babies -- the habits of talking a lot or a little, of what things to talk about, and of talking for pleasure or only for business. In this way, the family culture is passed on across generations: a culture of family life full of words and social ‘dancing’ – or empty.

There are massive differences between American children in their vocabulary growth and subsequent intellectual achievement. We have known this since we began the ‘War on Poverty’ initiative in 1965. This is why hundreds of preschool intervention programs were created at that time. But, since Betty’s and my longitudinal research measured vocabulary growth more thoroughly and carefully than ever before, these differences were seen directly, with little obscuring measurement error, very early in children’s lives. That there are equally massive differences in the amount of language *experience* accumulated by American babies we did not know, but discovered through this longitudinal research. Babies’ receptive and expressive language experience was measured so thoroughly and carefully that differences could be seen clearly with low measurement error. This thorough and careful measurement of both language outcomes and language experience permitted the surprising discovery that the large differences in the amount of language experience

that had accumulated before the children were three years old accounted for most of the equally large differences in vocabulary growth and verbal intellectual outcomes by age three -- and many years later. By age three, some children were so hopelessly behind in *total language experience and resultant total vocabulary size* that no later preschool or school intervention could catch them up to the constantly growing experience and vocabulary size of the average child. *

Many parents are raised in a family culture of sociability. They give to their babies the benefits of the activities and conversation they share and the vocabulary growth it engenders. And, they pass on to their babies the culture of sociableness (and conversation) itself, a pattern that is repeated for generations to come. These are advantaged families and advantaged children. But in many of the family subcultures of poverty, the hours of babies' lives are mostly empty of adult-provided structure and symbolic accompaniment, and interaction is only when necessary. To change these family subcultures we must focus on teaching parents, and potential parents, how to fill up all the awake time of babies with activities and conversation so that they are accumulating as much coherent and symbolic experience and social dance practice as their advantaged American age-mates – hour after hour, day after day, month after month from the very beginning.

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*This does NOT mean that their academic failure is inevitable. These children are only a little behind in important topics - such as math, science, logic and writing -- that are rare or nonexistent in the home conversations of even talkative families. So, in schools with *exceptionally good curricula* which concentrate on important topics, that are *well-delivered* with *exceptionally good motivation systems*, children from poor and taciturn families can soon catch up to, or even surpass, average children in just average schools -- in specific 'academic' topics.

However, children with little language experience in their family life since infancy, will always be behind the average child in the size of their 'general vocabulary' – the 'G' factor that underpins performance on new intellectual tests and tasks. Our quest for better remedial education should not obscure the central importance of all the waking hours of a child's life – 5000+ hours per year from birth – and of parent education that focuses on filling all the hours of babies', toddlers' and preschoolers' lives with interactive talk.