

# Language Roots

Philip T. Reynolds

Language learning emerges out of the language interaction between adult and child that begins in the early months of life. Parent and child establish their own voices in the interaction, with the roles evolving as the pair's needs and abilities change. Evolution on the child's side is strongly molded by his biology, the linguistic input he receives, and his own unique personality. Yet his language is profoundly a social enterprise. He feels driven to talk with, even at, other people and to act as if he is being understood. What drives him? It is called the *conversational imperative*.

Because of the conversational imperative, when in the presence of another person, people (at least in contemporary America) are inclined to talk. Why is this so? Because we attempt to make sense of our social interactions. We justify the anthropomorphic feelings we have for our pet dog if we can talk to it. We handle the reality of one-sided conversation with a newborn by providing enough language for both of us.

The conversational imperative does more than feed delusions of being understood. As we raise young children, the conversational imperative leads to a self-fulfilling prophecy: the very act of talking to infants as if they understand us is the single most important thing we do to help children become full-fledged participants in a language community. The main reason children succeed in learning language is that they are born into social groups in which language is the medium of exchange. Infant cooing and babbling increase when adults verbalize

back. Toddlers imbibe the sounds, words, and phrases they hear around them.

But mastering a native language is hardly child's play. The fact that every normal child moves from total incomprehension at birth to sophisticated speaking and understanding by about age 5 attests not only to the remarkable efforts children put into the process, but also to the social and personal drives that lead children to figure out the system.

A profound force underlying language development in human beings is the fact that we have things to say to those around us. Children, who have so little control over their physical environment, feel this need from the start. Their lack of articulate expression both generates frustration and provides a superb motivation to master the language tools necessary to make themselves understood.

Children have a great deal they want to tell us. Much of it initially relates to creature comforts: hunger, pain, wetness, and disorientation. Over time, as children learn that objects and activities have names, the drive to articulate comes (at least in part) from specific desires for milk, a ride in the car, another bedtime story. By the time children become 2 or 3 years old, their increasingly complex emotions need avenues of expression.

Children quickly realize that besides offering a means of expressing what is on their minds, language provides an immediate hook into a social relationship. Adults learn to make small talk with people they have never met before. Three- and four-year-olds discover that by asking "You know what?" (regardless of whether they have anything to say) they can capture an older person's attention. Even children who cannot decipher one another's sounds spontaneously initiate verbal exchange. Speech is a natural accompaniment to human activity: babies squeal with delight, fans cheer at ball games, audiences boo down speakers. Only through long years of socialization do we learn to channel our vocalizations into articulate language (and to restrain ourselves when social decorum calls for quiet).

Given that children are motivated to talk, and parents (along with others in the local environs) to talk with them, how do the two sides team up to form a *language twosome*? The first step is to divide up the conversational load. Occasionally the two communicate in unison, but more often portions of the conversation are parcelled out. The participants' roles are complementary though not always equal. One may render suggestion and the other agreement. The roles may shift back and forth, or the first person may dominate the conversation, with the second entering only at selected intervals.

When the language twosome is played by a young child and an adult, the conversational load undergoes dramatic changes over the first few years. From the time their children are born until they reach their second or third birthdays, parents bear major responsibility for initiating and maintaining conversations. This responsibility entails getting the child's attention, setting a topic (often by posing a question), encouraging a response, and trying to keep the give-and-take of comment (or question) and reply going.

Before a child has any recognizable words, the adult generally plays both lines in a twosome. As children begin to find their own conversational voices—having something to say and knowing words to express their thoughts—the conversational burden becomes increasingly distributed. In the early stages, both parents and children must do some accommodating. Driven by the conversational imperative, parents naturally suspend disbelief at their children's babbling (or even silence) and keep the conversational ball in motion. But children themselves also have a vital role in the suspension of disbelief when they listen intently to words and sentences that make no sense and keep working at the problem until they successfully decode adult mutterings.

Given this mutual commitment from parent and child to include the newcomer in the conversational community, how do parents aid young children in the

induction process? In many societies of the world, adults specially tailor the language they use in addressing children. Such tailoring is known as *baby talk*.

Baby talk is a special language style many adults use in addressing infants and young children. The style may include speaking in a higher pitch than is normally used with other adults, repeating their own words, asking a lot more questions, weeding out complex vocabulary, substituting special names for everyday things (such as “choo choo” for “train” or “kitty” instead of “cat”). Using shorter sentences, or even simplifying grammar to the point of ungrammaticality (as in “No eat !”).

Baby talk styles are found in most cultures around the globe, though many specific features differ from one society to the next. Adults often do not recognize they are addressing children in a special language style. When made aware, they are prone to disagree on whether the effects of baby talk are good, ill, or irrelevant.

The language style we call baby talk is really multiple linguistic threads joined by an attitude—an attitude that special language adaptations are appropriate when addressing young children. The threads are drawn from all four basic components of human language: sound, meaning, grammar, and conversation. While some forms of baby talk are obvious when you hear them, others are more subtle and become clear only in retrospect (e. g., tending to ask more questions of children than of adults or consistently expanding upon what children have just said).

What are the common forms of baby talk found in American society? Chart 1 presents a spectrum of possibilities.

## CHART 1 Common Baby Talk Features

## Sound

**higher pitch** than is normal in language addressed to adults.

**greater range** of frequencies (moving back and forth between high and low pitch)

**louder volume**

**slower rate** of speech

**clearer enunciation**

**emphasis on one or two words** in a sentence (Is that your very own *apple juice* ?)

**special pronunciation** of individual words (“My what a *bi-i-i-g* boy you are !”)

**echoing child’s incorrect pronunciation** (*bozer* for *bulldozer*)

## Meaning

**substitutions** (*choo choo* instead of *train*)

**diminutives** (*kitty* for *cat*)

**semantically inappropriate words** (calling an orangutan a *monkey*)

**echoing child’s invented words**

**coining non-standard words**

## Grammar

**grammatically simple utterances**

**shorter utterances**

use of **nouns in lieu of pronouns** (“Daddy wants Gene to brush his teeth”)

use of **plural pronouns in place of singular** (“Shall we brush our teeth now ?”)

**intentional ungrammatical usage** (“No touch !” for “Don’t touch that !”)

## Conversation

**restricted topics** (generally limited to the present, immediate past, or very near future)

provision of **both questions and answers** by adult (“Shall we go outside now ?  
Yes ? OK !”)

more **questions**, fewer declaratives

**sentences naming objects** (“That’s a duck, Gene. That’s a duck.”)

**repetition of own utterances**

**repetitions, expansions, recastings**

Why do parents (or adults more generally) slip into using baby talk with young children? When pressed, parents offer two explanations. The first is educational. By using baby talk, parents simplify the language, thereby making it easier to understand. For some forms of baby talk, this rationale makes obvious sense. It stands to reason that by slowing down the rate of speech, eliminating difficult words or grammar, and using a lot of repetition (both of their own speech and of their children's) parents' assist in the learning process.

But what about other baby talk features, such as higher pitch, using plural pronouns in lieu of singulars, or echoing children's invented words? Do we really believe that these linguistic gymnastics promote faster language learning? Hardly. Instead, they serve a second function: to enhance social integration with children by expressing emotion (e. g., through heightened pitch), exercising control (repeating your own words to capture the child's attention), or simply working to keep the communication channel open by building upon a child's interests.

From among the available baby talk threads a language community has to offer, adults make their own selections. Their choices heavily reflect the baby talk they have heard used by others, since especially first-time parents have little independent idea about what an appropriate way of speaking with a young child might be. But other variables enter the construction of baby talk style as well. Chief among them are parental age, level of education, the amount of time spent with the child, and the extent to which parents are aware of the kinds of language modulations they are using.

An additional factor is the child's age and level of linguistic sophistication. Some baby talk features (e. g., high pitch, large frequency modulations) are most common when addressing infants. Others (e. g., repetition, heightened grammaticality) are especially prevalent as toddlers begin using recognizable language. However, since so much of baby talk is unconscious, many parents do

not eliminate an age-appropriate baby talk feature (such as calling a bulldozer a *bozer*) until the child is articulate enough to ask the parent to call a halt (“Not *bozer*, Daddy. It’s a *bulldozer*”).

Perhaps surprisingly, the primary benefactor of baby talk is often adults, not children. In the process of adjusting their language, parents acknowledge the importance of their child as a member of the conversation. Many of the most common forms of baby talk have little if any direct ramifications for language learning but prove ideal avenues for establishing social rapport. The list runs the gamut of language categories: in **sound**, special pronunciations and echoing of children’s incorrect pronunciations; in **meaning**, the use of substitutions and diminutives, and echoing of children’s invented words; in **grammar**, use of plural instead of singular pronouns and intentional ungrammatical usage (of the “No eat!” variety); and in **conversation**, repeating your own utterances and providing both questions and answers in a dialogue.

Does parental baby talk benefit children as well? While researchers continue to debate how to interpret their data, it seems clear that a number of baby talk features are likely to facilitate language learning. In **sound**, the use of heightened pitch, large frequency modulations, and louder volume can all help capture a child’s attention, and slower rate and clearer enunciation are obvious boons to anyone attempting to make sense of an unknown language. In the same vein, placing special emphasis on one word helps single out that word and make it easier to learn.

In **meaning**, the use of semantically inappropriate words (like *monkey* for *orangutan*) can prove conceptually beneficial for young children (generally below age 2) who are struggling to puzzle out categories of objects in the world. However, we should not forget that toddlers and preschoolers are veritable language sponges and can absorb a vast array of complex words.

**Grammatically**, it makes intuitive sense that simpler and shorter utterances

from parents make it easier for children to crack the grammatical code. However, notions of simplicity and length are themselves relative. While no one would advocate the style of Henry James in addressing a 2-year-old, parents can also err on the side of oversimplification and neglect to provide their young children adequate grammatical models and challenges.

What about **conversational** features of baby talk? Restriction of topics can prove useful with very young children, but only up to a point. Filling one's conversation with ostension is an excellent way of teaching children new words, as long as it is balanced with conversational give and take. Asking many questions provides multiple opportunities for children to enter the conversational stream, because most questions at this stage can be answered with a single word.

Perhaps the most demonstrable conversational benefit that parents can contribute to their children's linguistic development is the active use of repetitions, expansions, and recastings of children's own utterances. Simple repetitions confirm to the child that his language has been understood. Expansions provide an ideal medium for stretching a child's grammar to catch up with his linguistic intent. And recastings are a natural way of teaching a child to integrate isolated utterances into conversation.

Can baby talk prove harmful? Hardly ever, even in the short run. Children continue to learn words and grammar from many sources (friends, teachers, other adults, books, television), even if parents persist in using limited vocabulary or grammar. In fact, it is often children, not parents, who demand an end to baby talk from their parents.

Now let's consider when language acquisition begins. We've seen cartoons showing husbands intently reading to their pregnant wife's abdomen. Some medical practitioners have taken the image seriously. According to Dr. F. Rene Van de Car, fetal learning can begin several months after conception, and so he founded Prenatal



University to train parents-to-be how to get a head start on early pedagogy. Dr. Van de Carr suggests, for example, that mothers begin stroking their abdomens and saying, “Stroke, I’m stroking you, ” and that families make prenatal audiotapes (to be played daily with headphones on the broadened belly), to introduce Mom and Dad ahead of time, so they won’t be strangers in the delivery room.

Can unborn babies really understand sounds from the outside world? Contemporary research shows that sometime between 24 and 28 weeks of gestation (during the sixth month of pregnancy), fetuses respond to sounds. The question is, What do they hear?

For years, reports have trickled in that unborn babies register differential responses to music heard in the womb. One audiological study notes, for example, that when mothers-to-be listened to Mozart or Vivaldi, the fetal heart rates of their babies became steadier and the level of kicking decreased. Other selected forms of music (from Beethoven to rock) generated more violent fetal kicking.

But what about fetal perception of human speech? A team of scientists in France has been studying the reception of actual human voices from the baby’s vantage point. After inserting a small microphone into the uterus to pick up speech from the “outside” and recording what was received “inside,” the researchers played the tape back to independent observers. Of the 3,000 sounds recorded, the observers were able to recognize only 30 percent of them. However, when the recording of a nursery rhyme (received in the womb) was analyzed by special equipment, it became obvious that the intonation pattern on the tape was perfectly received in utero. While individual sounds are probably not perceived prenatally in any reliably distinct way, intonation patterns are.

The findings may account for some fascinating data on the auditory preferences of newborn infants. One group of psychologists has been studying how much fetuses have already learned about sounds by the time they are born. The

researchers used a special non-nutritive sucking technique, where newborns easily learn to suck in one of two patterns on a nipple attached to a tape recorder to choose between two recorded voice messages. In one study, the first recording was of the baby's mother and the second of another woman's voice. The newborns' sucking preferences were to hear their own mothers' voices, suggesting familiarity from close contact over the months while in the womb.

A second experiment, again using the sucking choice technique, called upon mothers during their last 6½ weeks of pregnancy to read to their fetuses, twice a day, Dr. Seuss's rhyme-filled book *The Cat in the Hat*. Once the babies were born, experimenters offered them the opportunity to choose (through the appropriate sucking pattern) to hear their mothers read either *The Cat in the Hat* or another children's poem, *The King, the Mice, and the Cheese*, which has a different metric pattern. The newborns preferred *The Cat in the Hat*. Both of these studies suggest not only that infants can distinguish intonational differences before birth but also that they can remember what they heard before entering the outside world.

When do infants begin to distinguish between the several dozen distinct sounds in a language? While researchers have demonstrated that infants in the first few weeks of life can perceptually distinguish between basic speech sounds, it is not clear that these initial inborn skills carry over beyond age 6 or 7 months (much as newborns lose their initial ability to "walk" or infants lose their early facility in pronouncing *k* or *g*). It seems that children need to begin all over again by the time they start formulating recognizable words.

Most of what we know about young children's evolving linguistic abilities comes from the sounds they actually produce. What are the roots of articulate speech? The following is not an uncommon occurrence: Ten-week-old Natalie was crying. What was the problem? Natalie's mother was not sure. Hunger? Natalie rejected the bottle outright. Wetness? A quick check ruled out that

possibility. Too hot or cold? The room was a steady seventy degrees. Perhaps Natalie was lonely, and some holding or rocking would help. These moves only made matters worse. The crying continued and, in desperation, her mother started her blind round of possible remedies over again.

In nearly all babies, the meanings of one or two cries (e. g., of intense pain) are easy to identify. But what about the rest of the loud vocalization that characterize infancy? Many parents claim they can discern distinctive cries when their babies are hungry or uncomfortable or want attention, though other parents believe no such differences exist in infants' vocalizations. Over a century ago, Charles Darwin claimed that babies cry differently when they are hungry than when they are in pain, but more recent studies have failed to garner conclusive evidence that infant cries are perceptually distinguishable or even that they are phonetically distinct.

Why do numbers of parents maintain they can detect different meanings in their infants' cries? Context is one explanation. The fact that a baby has just fallen, has been left alone too long, or is past her regular feeding time leads the listener to read meaning into the child's vocalization. Such inferences often transcend the acoustic information given. (In fact, we have no independent evidence that babies themselves are conscious of the source of their unhappiness, much as adults sometimes become grumpy when they are hungry but don't recognize why they are in ill humour.) Another possibility is that the experiments to date are flawed in design. Most studies have kept the length and intensity of crying constant and studied only qualitative differences in cries. Some researchers have suggested that the real differences lie in length of crying and in growing intensity over time, variables that have received very little attention. And there is always the possibility that some children really do vary their cries while others do not.

The first discernible noises that genuinely sound language-like typically appear around age 2 to 4 months. From deep in the back of the throat emanates a

sequence sounding like *ku* or *gu*. As we have already seen, **cooing** is a physiological, not a linguistic, development, since the ability to coo disappears with normal maturation of the vocal tract.

Somewhere between 4 and 8 months, most children begin playing with sounds in patterns we call **babbling**. Babbling means what it intuitively seems to: making language-like sounds that have no identifiable meaning.

What kinds of sounds do children babble? Babies have been known to utter sounds not only unknown in the language of the community around them but even unknown in any language on record. It used to be said that children babble all the sounds possible in human language, but that claim is clearly wrong. Moreover, some children are prolific babblers, and others are not.

Common early babbling sounds include single vowels, consonants that stop the flow of air in the mouth, nasals, and consonant-vowel combinations. By age 6 months to a year, most children babble extended sequences of sounds, often repeating (or reduplicating) the same syllable (e.g., *papapa*).

If babbled sounds have no meaning, why do infants and toddlers babble? Largely for the same reasons they crawl and turn over and throw things out of their crib: to exercise their bodies and explore the world. Listen to, and watch, a 6- or 7-month-old babbling. His mouth has the plasticity of an accordion; opening and closing, narrowing and widening. Sound wells up inside from the throat, and then the articulators go to work. The lips happen to clamp shut, and you hear a *p*. The tongue gets stuck in the middle, and a *t* comes out. The velum (at the back end of the soft palate) flips down, and you get an *n*. To say that the child “intends” to babble one sound or another is to forget that sound-making at this stage is overwhelmingly a form of play.

A second function of babbling is to make social contact. If you don't know the words, you can at least go through the motions. Some 8- or 9-month-old

babblers are already accomplished conversationalists. They know when it's their time to "speak" and when to be quiet. In the later stages of babbling, many children incorporate a number of intonation features from the surrounding language community, making their vocalizations sound deceptively speech-like.

As adults, we vary a good deal in when we tend to talk. Some of us prattle on when driving with a companion, while others relish the silence. Babies also differ in when they like to babble. Outgoing babies for whom babbling is primarily a vehicle for social interaction, typically are at peak form when in "conversation" with adults. Other infants are most circumscribed in their choice of babbling venues.

Is there any linguistic future in babbling? The answer depends in part on a child's babbling style. Not all children babble the same amount, the same number of sounds, or for the same number of months. Some children cease babbling around the time they utter their first word (typically around 12 months), while others continue babbling for at least another year, by which time they may have spoken vocabularies of several dozen words. Still other children progress in stages.

For children who cease babbling before the community reinforces particular sounds the children are producing, we hardly expect to find much continuity between babbling and speech. However, for children whose babbling eludes into speech or continues alongside words for some months, there is growing evidence that the sounds of late babbling become the sounds of early speech.

Where do children's first spoken words come from? A combination of sounds and meanings. The sound component may originate from a number of sources. Sounds occurring in first words often echo words frequently used in children's presence. The first word of one of my colleague's children was *turtle*, pronounced (so I am told) with all the requisite consonants and vowels. The family had a music box in the shape of a turtle, which the boy often played with and which his

mother often referred to by name.

More commonly, the source is sounds children are babbling about the time they utter their first word. Though not all children have the same favorite babble sounds, many heavily use *duh* (or *da*, *dada*, or *duhduh*) in the later months of babbling. Why the preference for *duh*? Because it is so easy to say. Try it out, starting with your mouth in repose and feeling where your tongue is. Now push your tongue off the roof of your mouth like a diver off a springboard, let your vocal cords vibrate, and open wide. The result: *duh*.

The task of identifying children's first words is often fraught with problems. For all our desire to read meaning into babble, we may overlook meaningful utterance we do not understand. We also need to keep in mind that when children begin using words to refer to objects and events in the real world, their meaning for a word is probably not the same as ours. By the time we become adults, we have built up complex definitional networks, based on a wealth of experiences of using words in varied contexts and years of schooling during which we are taught to define words in isolation. Children's introductions to the world of meaning typically involve isolated words used in highly specific situations. A child's use of the words *daddy* may refer to all men, not exclusively his progenitor. *Mommy* might mean "Give me comfort" and not refer to people at all. In hearing children's early words, adults have no clear way of figuring out what their child's initial words really mean. During the second year of life, children's word meanings may be equally idiosyncratic, but it gradually becomes easier to puzzle out what children intend when they talk.

## REFERENCES

- Lust, Barbara C. (2006). *Child Language: Acquisition and Growth* (Cambridge Books in Linguistics). Cambridge University Press.
- Mclaughlin, B. (1984). *Second Language Acquisition in Childhood: Volume 1 Pre-School Children*. Lawrence Erlbaum Associates.
- Messner, D. J. (Author) & Turner, G. J. (Editor) (1993). *Critical Influences on Child Language Acquisition and Development*. Palgrave Macmillan.
- Richie, W. C. & Bhatdia, T. (Editors) (1999). *Handbook of Childhood Language Acquisition*. Academic Press.