

How can you help your baby to acquire language? A view from research.

Traditionally, it was thought that babies had very limited capacities for language. In fact, researchers traditionally thought that before children spoke their first words, they were not really learning language. Over the past forty years, psychologists have disproven this view of babies as a result of careful investigations of what babies really know about language. Research has shown us that from a very early age, babies are actively engaged in learning language, continuously discovering important facts about how their language. These discoveries bring babies to the point where they can produce their first word.

Even before they are born, babies are actively tuned into their linguistic environment. In fact, we now know that babies learn a number of things about language even while they are in the womb. For example, babies can recognize the sound of their own language while in the womb and can tell their language apart from other languages a few hours after birth. They also grow familiar with the sound of their mother's voice during pregnancy and prefer to listen to her voice over other voices within hours of being born. They learn the specific words in nursery rhymes that their mother read to them during pregnancy while in the womb. They also know something about the number of languages they may be expected to learn: newborn babies whose mothers spoke to languages during pregnancy can already tell these languages apart within hours of birth! From the moment they are born, their cries take on the sound patterns of the language they heard during pregnancy. At birth, French babies sound different from German babies when they cry, because the pitch patterns of French and German are different from one another. All of these feats of learning occur because the fetus is actively listening in to their mother's voice, attending closely to her voice as a valuable stream of information.

Over the months after birth, babies are engaged in a very important linguistic task. They are working hard to figure out the rules of their language. For example, when babies are born, they are 'citizens of the world' and can tell apart sounds that matter in any language of the world. As early as six months, babies go through an important transition. They start to lose the ability to tell sounds apart that do not matter for their language. For example, babies learning Swedish will have to tell apart subtle vowel sounds in order to learn Swedish. The same sounds do not feature in English. All babies can tell these vowels apart at birth, whether they are raised in Singapore, Stockholm or Senegal. However, babies raised in Singapore and Senegal (and all other non-Swedish speaking nations) will lose the ability to tell these sounds apart at six months, whereas Swedish learning babies will retain this ability. This process of sorting out sounds of language continues for several months and marks an important step in mastering the building blocks of language. In order to learn words and sentences, babies first have to identify which sounds matter in their language. In fact, babies who take this step earlier in development have higher vocabularies several years later as children!

Babies are heavily invested in the sounds of language. However, they are also mastering the rudiments of meaning. Babies as early as six months already know the meanings of several common words. As parents, we don't always notice this, as parents given there are limits to how much they can express in ways observable to us. However, subtle measures of eye gaze used in research laboratories have shown us that babies between six and nine months already link words like 'hair', 'apple', 'bottle' to corresponding objects when their parents speak to them. This knowledge is unbeknownst to their parents, who report that their babies do not know any of these words before seeing the data! Another important milestone in learning meaning is name recognition: babies learn the sounds of their own names as well as names for their parents (e.g. 'mama', 'dada') early as 4 months. They use this information resourcefully, carefully picking out words produced alongside their names and identifying these sounds as different words. As early as 8 months, babies can tell apart grammatically correct strings of words from grammatically incorrect strings of words, which is an important prerequisite for joining words together when they are toddlers. As you can see, babies are hard at work! They are furiously engaged in sorting out the structure of their language, noticing how sounds combine to form words and how words combine to form sentences. By the end of their first year, they have worked out the sounds that make up their language, have linked several sounds to meaning and can predict how words go together according to the grammatical rules of their languages. This is not something babies are ever taught, they learn simply by 'listening in!'

What can you do to help your baby learn language?

The findings described above are a small sampling of the numerous discoveries made about the infant mind over recent years. In addition to studying babies, several laboratories have followed babies from a few months of age to childhood. From these studies, we now know what types of behaviors help a baby to pick up his/her language. Here are some tips based on research studies:

1. Talk to your baby.

Pure and simple, one of the best things you can do for your baby is surround him/her with speech. The more words a baby hears, the more words they will later produce as children. However, babies benefit from words that are presented in a live interaction (not on a screen) and from words that are specifically directed to them (not overheard from other conversations). When you talk to your baby, you may feel that they are not always responsive nor do they always acknowledge the sound of your voice. However, rest assured that the sound of your voice is helping your child to master language even though your child's attention may waver at times. In contrast, you may observe your baby attend closely to the iPad with rapt attention. However, this doesn't mean they are learning anything at all. Research has shown us that infant language learning takes place much more effectively in a life interaction versus a televised display.

2. Engage your baby's attention.

Types of talk that have been shown to be particularly helpful to babies are conversations that are intended to engage the child. Examples are book reading and talk during play sessions. As a parent, you know your child best and can best sense when he/she is really engaged. If your baby is really interested in cars, talk to him about cars and other vehicles. If your baby loves strolling through the park, use that as a basis for chatting, identifying familiar and new objects. If your baby loves watching you wash the dishes or loves playing with water in the shower, talk to him/her while doing these activities. Try to be sensitive to your child's natural flow of attention, attempting to follow the child's attention and adapt your conversation to what he/she is focused on.

3. Short, simple and sweet.

As adults, we naturally change the way in which we speak around a baby. We liberate ourselves from normal adult communication style and launch into a 'sing-songy' style of talking that we commonly reserve for babies. This style of talking is called 'infant-directed speech'. The effects of infant-directed speech on language learning have been widely researched and this speech style has been shown to be very helpful to babies as they learn words. Infant-directed speech is helpful for several reasons. First, it has positive appeal. It sounds sweet and comforting; we naturally colour our voices with positive intonation around babies (even melodically producing words like "No, no, no..."). Second, it is filled with repetition. This is very helpful to babies as they try to lay down the foundations of language and track words that they hear. Third, sentences are often short and simple and are eventually easier for a baby to analyze. We also naturally stress words that refer to objects in our environment, saying things like "Here's your *bottle!*" So don't worry that your child is hearing a simplified speech style. They will not grow up speaking in a simpler speech style as a result! On the contrary, they are hearing a speech style that is exquisitely tuned to their ears that will help them to acquire language in the longer term.

4. Diversity is good.

Research has shown us that babies who hear words produced in multiple voices and accents learn to recognize those words more effectively. Singapore is a multi-ethnic, multilingual society and babies are naturally exposed to many different ways of producing the same set of words. Laboratory studies have shown that accent diversity is helpful to learning words and leads to a more robust phonological system. Likewise, babies who hear words produced by many different speakers recognize those words more easily than those who hear words only by one speaker. This doesn't mean that you have to re-arrange your child's life to increase the number of people talking to them! Rather, if your baby

is exposed to words from a number of people with different accents, this will not hinder their language and it may even be helpful to them.

If you and your baby would like to participate in research studies in language development, we would love to have you visit the NUS Infant and Child Language Centre. Our studies are short (about 15 minutes) and entertaining for babies. Please contact us at infantlanguagecentre@nus.edu.sg or sign up at <http://blog.nus.edu.sg/babytalk/enquiries/>.

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