

LANGUAGE FROM THE BEGINNING



“The language journey actually begins in the womb.”

Even before they’ve uttered a single word, babies are picking up the skills they need to learn language. In fact, the process begins *in utero*.

While at the University of British Columbia (UBC), Judit Gervain (who is now working in Paris) collaborated with Italian researcher Jacques Mehler to put together a comprehensive review of language development in the first year of life. Their work reflects the complex, multidimensional nature of the language development process. Forget nature versus nurture. Both are essential for language, and biological and environmental processes must work together to make it possible.

TALK TO YOUR PREGNANT BELLY

The language journey actually begins in the womb. At birth, infants can already *“distinguish between languages that have a different rhythm,”* says Gervain. *“At around four to five months, they can identify and recognize their first name. Between that time and their first birthday, infants start to pick out more and more of the very frequent word forms. ... It’s around*

their first birthday that they start to produce some of these word forms. They may have an intended meaning, but it might be quite different from the actual meaning.”

In addition, *“some of the cries of newborn infants actually reflect the unique melody of their native language. Later, babies use this knowledge to help them identify correct word order and certain grammatical structures, such as the beginning and end of a sentence. Lots of simple things they extract from speech then help them to learn more complicated grammar,”* says Gervain. *“This is known as bootstrapping.”*

Until recently, behavioural research was the cornerstone of infant language studies. It was through this research that experts learned that by about seven to eight months of age, infants can recognize the basic word order of their native language (e.g. verb-object in English; object-verb in Japanese). They seem to learn this by identifying the position of very frequent words. In English, for instance, words

like “he, she, it, this, that, there” often come at the beginning of sentences.

More recently, near infra-red spectroscopy or optical topography, a safe way to image babies’ brains, has allowed for further bridging of the gap between mind, brain and behaviour. For instance, says Gervain, it has helped researchers to determine that infants can recognize simple patterns in speech, such as repetition (e.g. ma-ma, yum-yum, bow-wow).

PUTTING IT TOGETHER

Putting all this research together means that it can eventually be used to help identify potential delays or problems in language development even before babies utter their first word.

“Is the organization there at birth that you expect?” asks Janet Werker, another language expert from UBC. *“Are the biases there at birth that you expect? Is the ability to pick up regularity (patterns) there? Are babies learning the sound system of their native language? Do they have appropriate speech-sound discrimination, with preference for sounds used in their native language?”* Answering these questions can not only help to identify problems but also pinpoint exactly where difficulties lie, allowing for the development of targeted preventive and treatment strategies.

Such testing is particularly important for preemies, infants with brain injuries, or infants with a hearing impairment. As the research progresses, it could provide real solutions for such common and pervasive problems as learning disabilities and speech delay. 🐼

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