



The science behind early language learning

There are several scientific and academic studies which have researched the subject of early second language acquisition. What follows is only a snapshot of some of the most recent and relevant key findings. If you are interested in delving into the subject more deeply, please follow the links at the end of this document for a good starting point.

Two decades ago, experts believed that if young children were exposed to more than one language, they would suffer 'language confusion' which might delay their speech development. Since then, research has shown that this is not the case, and in fact, it has become increasingly clear that young children have an incredible knack for acquiring one, two, three or even more languages!

But while those early fears about confusion and delay have happily been refuted, questions remain about how best to introduce language to young children.

Scientists have studied the differences between infant brains exposed to one language and those exposed to two, tracking and analysing both neurological activity and infant behaviour, during exposure to familiar and unfamiliar languages.

The results have enabled us to understand more about how the brain takes on language, and, conversely, how early language learning shapes the brain. Each language uses a unique set of sounds. Scientists now know that babies are born with the ability to distinguish all of them, but that ability starts weakening even before they start talking, by their first birthday.

Researchers at the University of British Columbia have shown that language learning can even begin in the womb. A recent study suggested that newborn babies prefer languages rhythmically similar to the one they've heard in the foetus, and that babies born to bilingual mothers not only prefer those languages over others — but are also able to register the differences between the two languages. (1)

Babies learn language from people, not from screens

Interestingly, research in Seattle showed that exposing English infants to a person speaking to them in Mandarin, helped those babies to detect Chinese language sounds. However, when the Mandarin was delivered via TV or audio recording, the babies learned nothing. (2)

This suggests the importance of social interaction in language mapping. Babies need to be face to face, interacting with other people in order for their brains to fully absorb what they hear.

Early advantage

Researchers at York University in Toronto assert that bilingualism provides benefits at all stages of life. The study also showed that bilingual children have improved focus, literacy and multi-tasking skills. (3)

Academics presenting at the 2011 American Association for the Advancement of Science meeting, claimed that bilingualism has huge benefits for the growing child. Among them:

- Babies raised in bilingual households can tell unfamiliar foreign languages apart
- Bilingual speakers who rapidly switch between languages are better mental multi-taskers
- Bilingual speakers have enhanced 'cognitive control'
- It is even thought that the mental workout involved in speaking two or more languages can lead to a delay in the onset of Alzheimer's Disease

Babies can learn 2 languages as fast as one

Amazingly, babies raised in bilingual households can learn both languages in the same time it takes most babies to learn one. On average, monolingual and bilingual babies start talking around age 1 and can say approximately 50 words by the age of 18 months.

But while new language learning is easiest during early childhood, the ability declines dramatically after puberty. Research from the University of Virginia suggests that there is a strong correlation between the age of initial exposure and ultimate attainment of the language, if the child is exposed before age 15. After the age of 15, this correlation disappears. (4)

What the experts recommend

Baby brains need personal interaction to soak in a new language — TV or CDs alone do not work. In fact, the American Psychology Association recommends NO TV before the age of 3!

Follow biology and expose youngsters early. If you speak a second language, speak it at home. Or find a play group or caregiver where your child can hear another language regularly.

Relevant studies

1. May, L., Byers-Heinlein, K., Gervain, J. & Werker, J.F. (2011) 'Language and the newborn brain: does prenatal language experience shape the neonate neural response to speech?'
2. Kuhl, P. K., Tsao, F.-M., & Liu, H.-M. (2003) 'Foreign-language experience in infancy: Effects of short-term exposure and social interaction on phonetic learning'
3. Ellen Bialystok (2012) 'Bilingual Effects on Cognitive and Linguistic Development'
4. Newport and Johnson (1991) 'Critical period of effects on universal properties of language'

Further information and resources

- Excellent site for helping raise bilingual children - www.growingupbilingual.org
- Comprehensive resource library - <http://www.bilingualism-matters.org.uk/resources/>
- Talk by top bilingualism academic - www.ted.com/talks/patricia_kuhl_the_linguistic_genius_of_babies.html
- Lecture by Patricia Kuhl - <http://www.ircs.upenn.edu/pinkel/lectures/kuhl/index.shtml>
- Useful article summarising key findings - http://www.nytimes.com/2011/10/11/health/views/11klass.html?_r=0
- Summary of a study by Italian academics - <http://news.nationalgeographic.com/news/2009/04/090413-bilingual-babies.html>

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