

Want bilingual kids? Start from birth

Babies' ability to distinguish language sounds weakens by first year: Study

WASHINGTON: New research is showing just how children's brains can become bilingual so easily – findings that scientists hope could eventually help adults learn a new language a bit more easily.

Among other things, scientists have found that children can pick up two languages between birth and age seven, and do it best when they are exposed to foreign languages at an early age.

"We think the magic that kids apply to this learning situation, some of the principles, can be imported into learning programmes for adults," said Dr Patricia Kuhl of the University of Washington, who is part of an international team now trying to turn those lessons into more teachable technology.

Scientists now know that babies are born with the ability to distinguish all languages, but that ability starts weakening

even before they start talking, by the first birthday.

Dr Kuhl offered an example: A Japanese does not distinguish between the "l" and "r" sounds of English.

Her team proved that a seven-month-old in Tokyo and a seven-month-old in Seattle responded equally well to those different sounds. But by 11 months, the Japanese infant had lost a lot of that ability.

Mastering your dominant language also gets in the way of learning a second, less familiar one, the research suggests. The brain tunes out sounds that do not fit. "You're building a brain architecture that's a perfect fit for Japanese or English or French," Dr Kuhl explained.

It is remarkable that babies being raised bilingual – by simply speaking to them in two languages – can learn both in the time it takes most babies to learn one.

On average, monolingual and bilingual babies start talking around age one and can say about 50 words by 18 months.

Italian researchers reported this month in the journal *Science* that being bilingual seems to make the brain more flexible. When they tested 44 12-month-olds to see how they recognised three-syllable patterns, they found that bilingual babies learnt two kinds of patterns at the same time, while the one-language babies learnt only one, concluded Dr Agnes Melinda Kovacs of Italy's International School for Advanced Studies.

While new language learning is easiest by age seven, the ability markedly declines after puberty. "We're seeing the brain as more plastic and ready to create new circuits before than after puberty," Dr Kuhl said.

It is a totally different process for adults, she added. "You won't learn it in the same way. You won't become (as good as) a native speaker."

What might help people who missed their childhood window? Baby brains need personal interaction to soak in a



Picking up a second language

What scientists found:

- **Innate ability:** Babies are born able to distinguish all languages, but this ability weakens as they grow older.
- **Start young:** The best time to learn a foreign language is between birth and the age of seven.
- **Start bilingual:** Mastering a dominant language can get in the way of learning a second one, as the brain tunes out sounds that do not fit.
- **Personal interaction:** Parents should expose youngsters to a second language often, so that they have a chance to hear and speak it regularly.

new language.

So, researchers are improving the technology that adults tend to use for language learning, to make it more social and possibly tap brain circuitry that children use.

Dr Kuhl and scientists at Tokyo Denki University and the University of Minnesota helped develop a computer language program that pictures people speaking in "motherese", the slow exaggeration of sounds that parents use with babies.

Japanese college students who had had little exposure to spoken English underwent 12 sessions listening to exaggerated "l" and "r" sounds while watching the

computerised instructor's face pronounce English words.

Brain scans showed the students could better distinguish between those alien English sounds. And they pronounced them better too, the team reported in the journal *NeuroImage*.

Dr Kuhl, however, would rather see parents 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.

"You'll be surprised," she said. "They do seem to pick it up like sponges."

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