

The Window for Learning a Language May Stay Open Surprisingly Long

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Language learning isn't kid stuff anymore. In fact, it never was, a provocative new study concludes. A crucial period for learning the rules and structure of a language lasts up to around age 17 or 18, say psychologist Joshua Hartshorne of MIT and colleagues. Previous research had suggested that grammar-learning ability flourished in early childhood before hitting a dead end around age 5. If that were true, people who move to another country and try to learn a second language after the first few years of life should have a hard time achieving the fluency of native speakers.

But that's not so, Hartshorne's team reports online May 2 in *Cognition*. In an online sample of unprecedented size, people who started learning English as a second language in an English-speaking country by age 10 to 12 ultimately mastered the new tongue as well as folks who had learned English and another language simultaneously from birth, the researchers say. Both groups, however, fell somewhat short of the grammatical fluency displayed by English-only speakers.

After ages 10 to 12, new-to-English learners reached lower levels of fluency than those who started learning English at younger ages because time ran out when their grammar-absorbing ability plummeted starting around age 17. In another surprise, modest amounts of English learning among native and second-language speakers continued until around age 30, the investigators found, although most learning happened in the first 10 to 20 years of life.

Earlier investigations have included too few monolingual and bilingual participants—typically no more than 250 per study—to reveal the entire timeline of grammar learning, Hartshorne says. Aiming for a sample of tens of thousands of volunteers, he began by contacting friends on Facebook to take an online English grammar quiz, which used a person's responses to guess his or her native language and dialect of English. After completing the quiz, volunteers filled out a questionnaire asking where they had lived, languages they had spoken from birth, the age at which they began learning English and the number of years they had lived in an English-speaking country.

As Hartshorne had hoped, the quiz was shared widely on Facebook and other social media, allowing the researchers to analyze responses of 669,498 native and nonnative English speakers. Statistical calculations focused on estimating at what ages people with varying amounts of experience speaking English reached peak grammar ability.

Researchers who study language learning regard the new study as intriguing, but preliminary. "I see this as a first foray, a blast of data that, while powerful, lacks precision," says psycholinguist David Barner of the University of California, San Diego.

For instance, Hartshorne's team can't yet say that language skill develops along a single timeline. Different elements of grammar, such as using correct word order or subjects and verbs that agree with one another, might be learned at different rates, Barner says. It's also unclear whether the responses of volunteers to an online, 132-item grammar test reflect how well or poorly they actually speak English, he says.

Because the researchers did not test children younger than age 7, the team couldn't adequately assess how long it really takes to learn English, says psycholinguist Elissa Newport of Georgetown University in Washington D.C. The researchers claim that learning takes a total of 30 years, leading to their estimate that the critical period of learning comes to an end at age 17. But Newport emphasizes that hundreds of previous studies, including hers, have found that native language learning is largely done by age 7 (SN: 7/28/01, p. 54), and second-language learning proceeds best for those who start by around age 5.

What's more, language learning involves more than a crucial period for acquiring grammar, cautions linguist David Birdsong of the University of Texas at Austin. For instance, growing up speaking two languages at once puts still poorly understood strains on the ability to grasp grammar, he says.

In the new study, people who were bilinguals from birth fell short of peak English grammar scores achieved by English-only speakers. That's consistent with evidence that bilinguals cannot easily turn off one language while speaking another, Birdsong says. Interactions between tongues spoken by one person may slightly depress how much can be learned about both languages, even if bilingual communication still reaches high levels, he suggests.

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