

## Having a good ear greatly promotes L2 phonology, vocabulary, and grammar learning in immersive settings

### What this research was about and why it is important

Learning a second language (L2) after puberty is characterized by a great amount of individual variation, with some achieving highly-advanced performance and others showing tremendous difficulty. Interestingly, recent research has shown that the source of this variability cannot simply be ascribed to experience-related variables (how much and how L2 learners have practiced the target language). In the current study, we introduce an emerging paradigm that as in first language (L1) acquisition, having a good ear (i.e., the ability to represent, track and integrate various dimensions of acoustic signals), may play a key role in various aspects and stages of post-pubertal L2 learning.

### What the researchers did

- We recruited 139 post-pubertal L2 learners of English with different L1 backgrounds (Spanish, Chinese, Polish) and diverse levels of proficiency (beginner, mid, advanced) and immersion experience (inexperienced, experienced).
- We measured their L2 proficiency from multiple angles by using a battery of comprehension tests (vowel perception, prosody perception, nonword judgements, grammaticality judgement).
- We assessed their acuity to various dimensions of sounds by using a set of psychoacoustic tests (formant, pitch, amplitude, duration discrimination).
- We surveyed the onset, length, and intensity of their L2 English learning experience.
- We examined which factors (auditory processing vs. experience) are relatively important for determining the degree of success in adult L2 learning.

### What the researchers found

- Those with more advanced L2 proficiency demonstrated not only more extensive immersion experience, but also more precise auditory processing abilities.
- The degree of success in post-pubertal L2 learning could be determined by the extent to which individuals are perceptually good at detecting, processing and analyzing audio input during their L2 immersion experience.
- Auditory processing was a strong predictor especially among certain L2 learners with ample L2 immersion experience (length of residence > 1 year).

### Things to consider

- Auditory processing is a critical determinant of post-pubertal L2 learning, particularly in an interactive, meaningful and immersive setting (similar to L1 acquisition).
- If certain individuals are endowed with more precise auditory processing, they could better notice, analyze, and internalize all the received auditory input throughout naturalistic L2 learning experience.
- The current study lends empirical support to the bilingual-cognitive account of L2 acquisition. According to this view, even adult L2 learners continue to rely on the same cognitive, perception-based mechanisms they used in acquiring their L1.

**Materials and data:** Materials are publicly available at <https://www.iris-database.org>.

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