5.2: How Adults Learn the Phoneme Categories in a New Language

Just because babies have learned the phoneme categories of their L1 by the time they’re one year old doesn’t mean that it’s impossible to learn phoneme categories in a new language when you’re older. Some phoneme contrasts in an L2 will be easy to learn and other will be harder, depending on your L1. This unit explains why.
Check Yourself

1. In Canadian French, the front tense vowels [y] and [i] become the lax vowels [ʏ] and [ɪ] in certain environments. Is it likely to be easy or difficult for a native speaker of Canadian French to learn the English contrast between /i/ and /ɪ/ (as in sleep and slip)?
   - Easy.
   - Difficult.

2. Arabic includes a contrast between a voiceless velar fricative [x] and a voiced velar fricative [ɣ]. Is this contrast likely to be easy or difficult for native speakers of English to learn?
   - Easy.
   - Difficult.

3. In Cree, voiceless stops become voiced between vowels. Given that Cree has both voiced and voiceless stops in its phonetic inventory, is it likely to be easy or difficult for a native speaker of Cree to learn the phonemic contrast between /b/ and /p/ in English?
   - Easy.
   - Difficult.

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Video Script

In the last unit, we learned that babies have set up the phoneme categories of their native language by the time they’re only twelve months old. This is part of the reason that it can be challenging to learn a new language as an adult. A psycholinguist by the name of Catherine Best has proposed a theory to predict which phoneme contrasts will be hard for second-language learners to learn, and which will be easy. For simplicity, let’s use the term L1 for your native language, the language you learn from infancy. And an L2 is any language you learn later than that, as an older child, a teenager, or an adult. Best’s theory of L2 learning centres around the concepts of phonemes and allophones.

Best predicts that there are two kinds of phoneme contrasts that are easy to learn in an L2. If the L2 has a phoneme contrast that maps onto a phoneme contrast in the learner’s L1, then that contrast should be easy to learn in the L2. She also predicts that if the L2 has a phoneme contrast that’s completely new, with two segments that don’t exist at all in the learner’s L1, then this contrast should be easy as well because the learner can set up two new phoneme categories from scratch.

The kind of phoneme contrast that’s hard to learn is when two contrasting phonemes in the L2 map onto a single phoneme category in the learner’s L1. In this case, the learner will have spent a lifetime treating the phonetic difference as allophonic variation, and not a meaningful contrast, so it’s a challenge to learn to pay attention to the difference as meaningful.

Catherine Best and her colleagues have tested this theory by investigating how English-speaking adults learn phonemic contrasts in Zulu. Zulu is a language that has about 27 million speakers, most of them in South Africa. First, researchers
asked the English-speakers to tell the difference between voiced and voiceless lateral fricatives in Zulu. English doesn’t have lateral fricatives, but English does have lots of pairs of fricatives that contrast in their voicing, so the theory predicts that it should be easy for English listeners to map the voicing difference between the Zulu fricatives onto those English voicing contrasts and recognize this phonetic difference. And that prediction was upheld: The English listeners were about 95% correct.

Then they asked the English speakers to tell the difference between three Zulu clicks: a dental, an alveolar, and a palato-alveolar click. English doesn’t have any clicks at all, so the English listeners should be able to simply pay attention to the phonetic differences between these segments, without any interference from their English phonology. The English listeners were about 80% correct at these sounds.

Last, they asked the English listeners to tell the difference between two different kinds of bilabial stops in Zulu: the plosive stop is similar to the English /b/ sound. The other is an implosive /ɓ/, which is made by obstructing airflow at the lips, but when the stop is released, air flows into the mouth instead of out of the mouth. The English adults were only about 65% correct at hearing this difference, not a whole lot better than chance. This is consistent with Best’s proposal that because the English listeners have only one phoneme category for voiced bilabial stops, their mental grammar simply treats the implosive as an allophone of that phoneme. So it’s very hard to hear the phonetic difference between the two sounds in the L2 because the mental grammar of the L1 considers them both members of the same phoneme category.