

The benefit of learning from multiple voices in second language vocabulary learning

What this research was about and why it is important

Child second language (L2) learning is highly common (due to immigration, bilingual communities, etc.), however, research in this area is sparse compared to that on child first language and adult L2 acquisition. Existing research is largely focused on differences between early and late L2 acquisition, with relatively little research exploring which factors best promote L2 learning in children, and whether these are the same as for adults. For adults, speaker variability (i.e. hearing L2 words spoken by multiple voices rather than a single voice) has been shown to benefit L2 vocabulary learning, with acoustically varied examples of the same word helping adults form stronger representations and learn the words better. This has not yet been investigated for child L2 learners. The current study examined whether hearing multiple voices benefitted L2 vocabulary learning in both children and adults.

What the researchers did

- Native English-speaking adults, 7-8 year-olds, and 10-11 year-olds (32 learners per age group) completed a 30-minute experiment comprising of a computerized L2 vocabulary training task, a production test and a comprehension test. Approximately half of the participants were bilinguals since infancy, but none had any previous exposure to the language used in the study (Lithuanian).
- Participants learned 12 words (repeated 8 times each during the training task). In each trial, the learner heard a Lithuanian word produced by a native Lithuanian speaker (e.g., *namas-house*) and chose between two pictures – the target (e.g., a picture of a house) and a distractor. Learners also repeated each word aloud in order to practise production. Feedback was provided, and the word was played again to strengthen learning.
- For all learners six of the words were always produced by the same speaker (low-variability condition) while the other six words were produced by eight different speakers (high-variability condition).
- After the training, learners' ability to produce the Lithuanian words was tested using a production (picture-to-L2 word recall) test, and a comprehension test where participants heard a Lithuanian word produced by a novel speaker and selected the corresponding picture from a grid containing all 12 trained words. Each word was tested twice during each test task with presentation order randomised and no feedback given.

What the researchers found

- In all tasks, adults outperformed children, and 10-11 year-olds outperformed 7-8 year-olds, in line with a benefit of age seen in previous studies of vocabulary learning.
- Adults demonstrated better production of the words learnt from multiple speakers (high variability condition) compared to the words learnt from a single speaker (low variability condition), consistent with previous research. The results of the comprehension test did *not* show this difference, however performance was generally very high in this test (>86%) compared with previous experiments.
- Children did not show better production or comprehension of the words they had heard spoken by multiple voices (although the results of the 11 year-old's comprehension test were ambiguous, and in general their performance was somewhat intermediary between 7 year-olds and adults).
- 7 year-olds also had more difficulty in the training task identifying the words heard from multiple speakers.

Things to consider

- In line with previous research, the production data in this study provides evidence that adult L2 vocabulary learners benefit from high variability input. Although no variability benefit in the adult comprehension test was observed, this is likely to be due to adults' overall high performance on the comprehension test (i.e., making the test suitable for children made it too easy for adults).
- The results from the training data shed light on why children do not benefit from hearing words spoken by multiple voices: Younger learners having difficulty attuning to different speakers in each training trial, leading to these words being identified more slowly as well as making it more difficult for younger learners to make use of acoustically varied examples of the same word which help adults learn the words better.
- An important direction for future work will be to discover whether benefits of speaker variability might be present at a later stage of child L2 learning, perhaps once the phonology of the L2 becomes more familiar.

Data available from <https://osf.io/fpmyg/>

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