Factors that influence word learning in bilingual children

Mary Alt

University of Arizona, Tucson, AZ

Introduction

Research Question: How do children who are exposed to two sets of statistical patterns use that information when learning a novel word?

Word learning is an essential skill for everyday communication and academic success. Children are sensitive to the implicit linguistic patterns of their native language, like phonotactic probability, and that sensitivity influences how they learn words (Alt & Plante, 2006; Storkel, Armbrüster, & Hogan, 2006). The way monolingual children use phonotactic probability appears to change with age (e.g. Edwards, Beckman, & Munson, 2009). One cannot assume that the learning strategies found in monolingual children automatically apply to bilingual children, especially given evidence of differential response to the phonotactic probability in bilingual nonword recall tasks (Messer, Leseman, Boom, & Mayo, 2010). This study investigated the word learning patterns of typically-developing bilingual children in relation to manipulations of English phonotactic probability.

HYPOTHESES:
1. Bilingual children will show unique learning patterns in response to a language-specific factor (phonotactic probability) compared to monolingual children.

2. The effect of this factors will change over time.

Participants
- Typically-developing children
- 46 4-5 year olds; 35 7-8 year olds
- Bilingual (exposed to Spanish and English)
- Monolingual (exposed to English)
- Matched for age, sex, and SES

Methods

Participants were asked to fast-map 24 nonwords as part of a computer game where they encountered novel animated dinosaurs.

- "Look!" "I see a gaystul!" "It’s a gaystul."

Stimuli
- 24 nonwords, orthogonally contrasted for length (short, long) and English phonotactic probability (high, low).
- Nonwords were made as English-like as possible in terms of syllable shape, phoneme choice, and stress patterns.
- Recognition task always preceded production task
- Foils in recognition task were presented in random order.
- No feedback provided

Results

HYPOTHESIS 1: Bilingual children will show unique learning patterns in response to a language-specific factor (phonotactic probability).

YES for 4-5 year olds; NO for 7-8 year olds. Children exposed to two sets of statistical probabilities show evidence that they are not able to benefit from the properties of the L2 in the same way as children who only have L1.

HOWEVER, this is only true for children aged 4-5.

HYPOTHESIS 2: The effect of this factor will change over time.

YES. Possible Explanations:
- Younger children have less experience with L2 and may need more exposure to benefit from the phonotactic facilitation of L2.
- Older bilingual children may have better problem solving skills, regardless of their experience with L2, which led to their equivalent performance to monolinguals.

Clinical Implications: Stimuli chosen based on the phonotactic properties of English will likely benefit older bilingual (Spanish/English) children as well.

Conclusions

Acknowledgements

Generously funded by the University of Arizona Foundation

Thanks to the many wonderful students in the L4Lab for their tireless work.

Thanks to the students and their teachers and parents who so graciously took part in this study.