



# Word Learning in the Switch Task: The Case of Phonologically Unassimilable Non-Native Words

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## Introduction

- A narrowing occurs by 20 mo for “what may be a word.”
- Given sufficient social/referential/perceptual cues, infants 12-18 mo, but not 20-26 mo, learn non-linguistic stimuli as object labels<sup>1-4</sup>.
  - Digital noises, gestures, pictograms.
- The mechanism behind this narrowing is not known.
  - Is it language vs. non-language sounds?
  - Or, are there native language constraints?

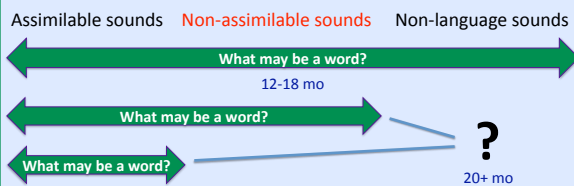
## Phonological Category Assimilation Hypothesis

- We propose that “what may be a word” narrows according to a **Phonological Category Assimilation**<sup>5,6</sup> word-learning constraint.
  - For older word-learning infants (20mo+), the sounds within “possible words” must all assimilate into native language phonological categories.

### “Possible Words”?



## What may be a Word: Developmental Narrowing



## Methods

### Participants

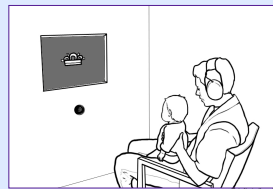
- 14 mo (n=13, Age range= 13.75- 14.5 mo).
- 20 mo (n=20, Age range= 19.5- 20.5 mo).
- Infants were all monolingual English-learning (>80%).


### Stimuli


- CV words containing click consonants, from the language N|uu<sup>7</sup>.
  - Click consonants have been found to be non-assimilable for English language listeners (Best, McRoberts, & Sithole, 1988).
- [!a] and [!u]


### Procedure


- Referential<sup>8</sup> Switch Word-Learning Task<sup>9</sup>.
- Parents filled out MacArthur-Bates Vocabulary Short-Form Vocabulary Checklist (14 mo: Level I, 20 mo: Level II-Form A).



Training (x4):  [kitty]

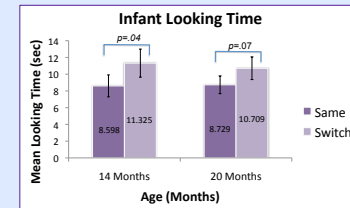
Habituation:  
Pair 1:  [!a]

Pair 2:  [!u]

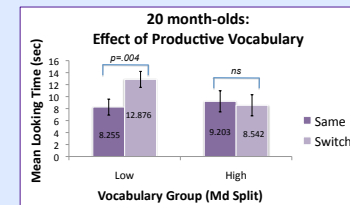
Test:  
Same:  [!a]

Switch:  [!u]

## Results



- Overall, “Switch” > “Same”,  $F = 8.72, p < .01$ .
- At 20 mo, an interaction was found between test trial and vocabulary,  $F = 9.506, p < .01$ .



## Discussion

- 14 mo infants treat words containing non-assimilable sounds as potential object labels.
- By 20 mo, only infants with smaller vocabularies accept non-assimilable sounds in labels.
- Vocabulary data support a **Phonological Category Assimilation** word-learning constraint that emerges once infants have acquired a sufficiently sized lexicon.

### References:

1. Woodward & Hoynes, 1999;
2. Namy & Waxman, 1998;
3. Namy, 2001;
4. Hollich et al., 2000;
5. Best, McRoberts, & Sithole, 1988;
6. Best & McRoberts, 2001;
7. Miller, 2009;
8. Fennell & Waxman, in press;
9. Werker, Cohen, et al., 1998.

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