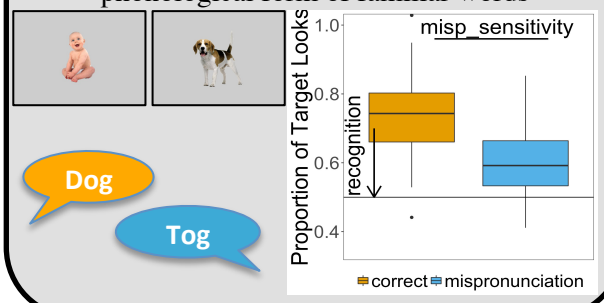
# A meta-analysis of mispronunciation sensitivity in infancy

*Katie Von Holzen[1,2] & Christina Bergmann[3,4]*

1. University of Maryland, USA
2. Université Paris Rene Descartes, Laboratoire de Psychologie de la Perception CNRS, France
3. Max Planck Institute for Psycholinguistics, The Netherlands
4. LSCP, Département d'Etudes Cognitives, ENS, EHESS, CNRS, PSL Research University

## Mispronunciation Sensitivity

Infants' sensitivity to changes in the phonological form of familiar words



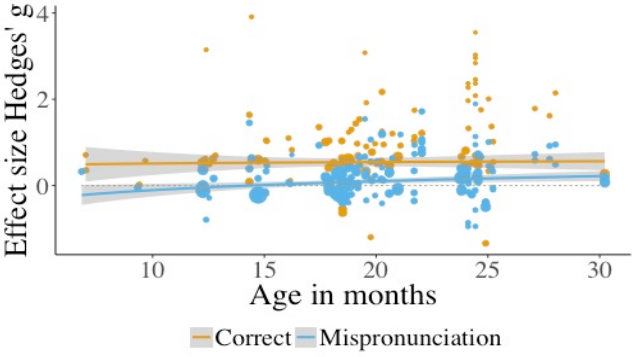

## Database Information

- 32 papers (27 journal articles)
- 249 unique experimental conditions
- 2252 infants
- 6 to 31 months-of-age

| Participants | Stimuli | Procedure | Results |
|---|---|---|---|
| Age in days | # features | # trials | DV type |
| Sample size (*n*) | Change position | Distractor familiarity/ overlap | vocabulary |
| Native Language | Consonant/vowel | | misp sensitivity |

## How does mispronunciation sensitivity change as infants develop?

1) More sensitive with development[1]
2) Less sensitive with development[2]
3) No change in sensitivity with development




**Correct**

Recognition: $g = 0.91$, SE = 0.12, $p < .0001$

**Mispronunciation**

Recognition: $g = 0.25$, SE = 0.06, $p < .0001$

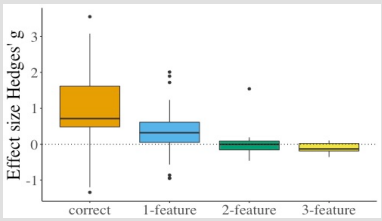
**Correct vs. Mispronunciation**

Sensitivity: $g = .5$, SE = .03, $p < .0001$

**Interactions with Age**

No significant interactions with Age

## Does the number of phonological features changed modulate mispronunciation sensitivity?




**Features**

Number: $g = -0.31$, SE = 0.03, $p < .0001$

**Interactions with Age**

No significant interactions with Age

**Focus on ages 18 to 30 months where feature is manipulated**

## Does familiarity with the distractor image modulate mispronunciation sensitivity?

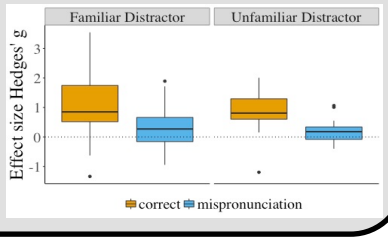
**Distractor Familiarity**

Sensitivity: $g = 0.19$, SE = 0.09, $p < .05$

**Interactions with Age**

No significant interactions with age

**Focus on ages 18 to 25 months where familiar & unfamiliar distractors used*




## Conclusions

- Sensitivity to mispronunciations stays consistent as infants age (Theory 3)
- Sensitivity to mispronunciations increases as the number of features changed increases; consistent as infants age
  - Infants are sensitive to size of mispronunciation[3,4]
- Mispronunciation sensitivity greater with unfamiliar distractor; consistent as infants age
  - Unfamiliar object is a more viable option for mispronunciation than known familiar object[5]

MetaLab

## What's in your File Drawer?

Do you have a mispronunciation study that is unpublished?

Contact us and add it to our meta-analysis!

## References

1. Werker & Curtin (2005). PRIMIR: A Developmental Framework of Infant Speech Processing. *Lang Learn and Dev*
2. Best (1994). The emergence of native-language phonological influences in infants: A perceptual assimilation model. *Haskins Laboratories Status Report on Speech Research*
3. White & Morgan (2008). Sub-segmental detail in early lexical representations. *Journal of Memory and Cognition*
4. Mani & Plunkett (2011). Does size matter? Subsegmental cues to vowel mispronunciation detection. *J of Child Lang*
5. Halberda (2003). The development of a word-learning strategy. *Cognition*

Contact: Katie Von Holzen (katie.m.vonholzen@gmail.com) & Christina Bergmann (chbergma@gmail.com)