InWordDB

A comprehensive database of infant word segmentation

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Background: Infant word segmentation

Typical segmentation study[1]:

- Expose infant to words
- Test with passages (or vice versa)
  Test contains familiar (known) and novel (unknown) words
- Dependent measure:
  Listening time (LT) to both types of test trials

Significant difference between familiar and novel:
↬Words were segmented!
NB: Direction varies! (Longer LT either to novel or familiar)

Research Question

Can we identify factors that influence the outcome of a segmentation study?

What role does **age** play?
↬ Switch from preference for **familiar** test stimuli to preference for **novel** test stimuli[2,3]
(prediction based on infant information processing)

Impact of **language background**?
Emerging evidence (French, Spanish)[4,5,6]

Database Information

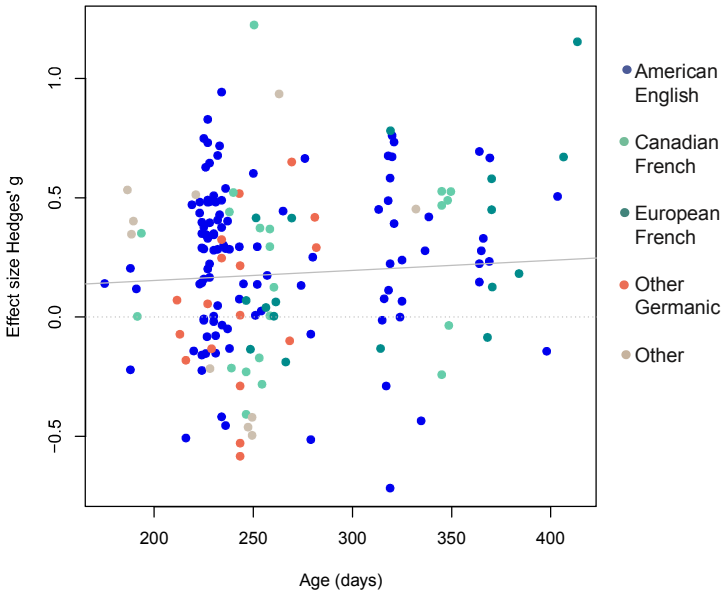
Study ID	Participants	Stimuli	Procedure	Results
Author(s)	Age in days	Language	N test trials	LT Familiar / Novel
Title	Number	Words	Fam criterion	SD for both LTs
Year	% Girls	Paragraphs	Method	% Familiarity pref.
DOI or link	% Drop-out	Edge align		**Effect size**

51 studies encoded (mostly published articles) including 175 unique experimental conditions including data from 3951 infants

Age: 5¾ - 14 months (mean: 8½ months)

Results

Mean weighted ES positive: Hedge's g = 0.2 (SE = 0.003)
Significantly above 0 with $p < 0.001$



Open Science

Access: ***sites.google.com/site/InWordDB***

- Database publicly available (with analysis scripts, plots, explanations, ...)
- Continuously updated

Join us!

↬ Add to it and **submit data** (published or not)
- Null results are also of interest!

↬ **Coordinate extensions** of the database:
- Older children
- Artificial speech input (Statistical learning)
- Word-object mapping
- ...

Effect Sizes for repeated measures

"Ingredients" to compute Effect Size (**ES**) for rm
1. Infant behavior per condition
2. Standard deviation of 1.
3. Correlation between conditions
4. Number of infants tested

↬ These depend on reporting standards in a field!
(NB: correlation usually not reported)

ES for repeated measures: **Formula** (Hedge's g)

$$\left(1 - \frac{3}{4N_{Participants} - 5}\right) \times \frac{LT_{Familiar} - LT_{Novel}}{\sqrt{SD^2_{Familiar} + SD^2_{Novel}/2}}$$

Correct for small sample sizes — Effect Size

ES is weighted by the correlations (3.)
↬ How "systematic" was infant behavior during test?

References

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