Mispronunciation Sensitivity Publication Bias for CogSci

Christina Bergmann and Katie Von Holzen

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```
## Loading required package: Matrix
```

```
## Loading 'metafor' package (version 1.9-9). For an overview
## and introduction to the package please type: help(metafor).
```

Preparation

Read in data and tidy up dataset

Funnel Plot Asymmetry

Use ranktest() to check for funnel plot asymmetry. Both tests show evidence of significant asymmetry.

Object Identification Correct Words

```
##
## Rank Correlation Test for Funnel Plot Asymmetry
##
## Kendall's tau = 0.5262, p < .0001
```

Object Identification Mispronounced Words

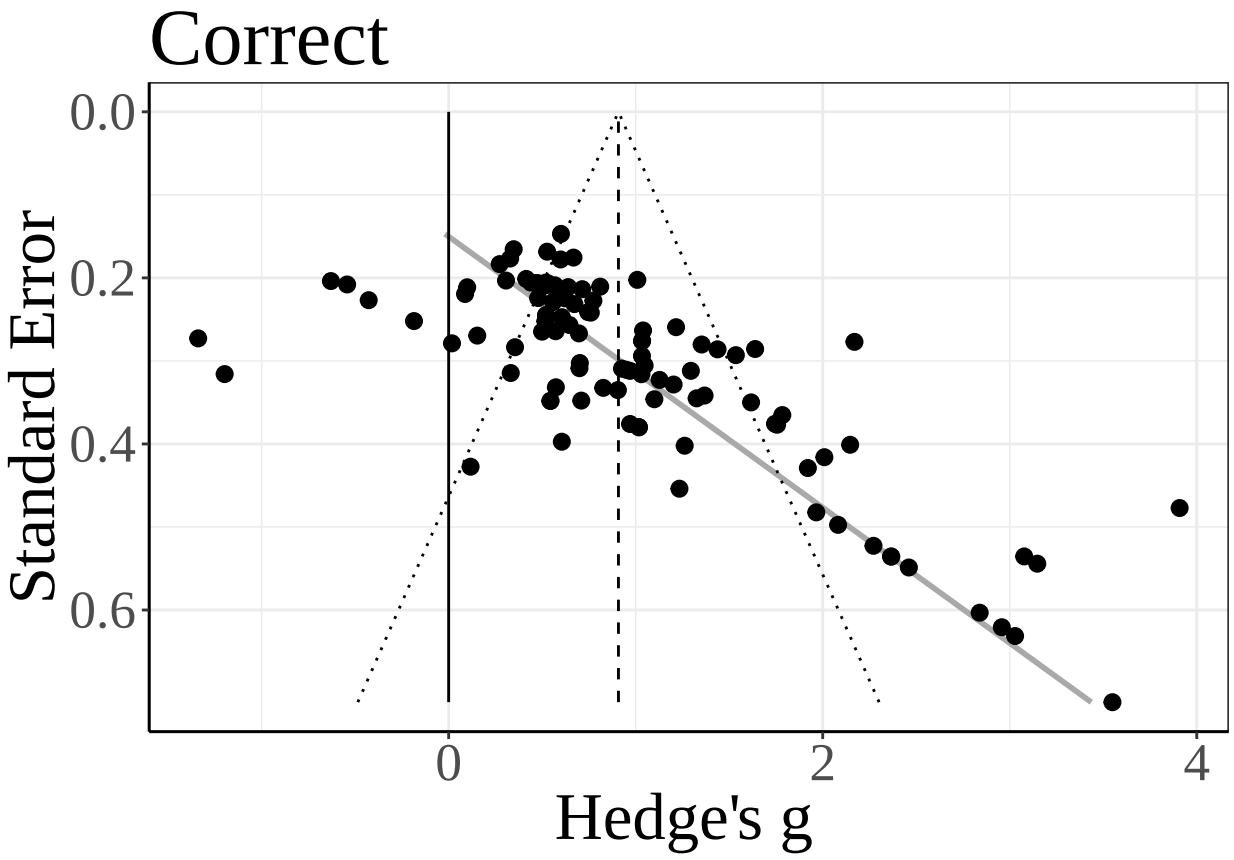
```
##
## Rank Correlation Test for Funnel Plot Asymmetry
##
## Kendall's tau = 0.1585, p = 0.0044
```

Draw Funnel Plots

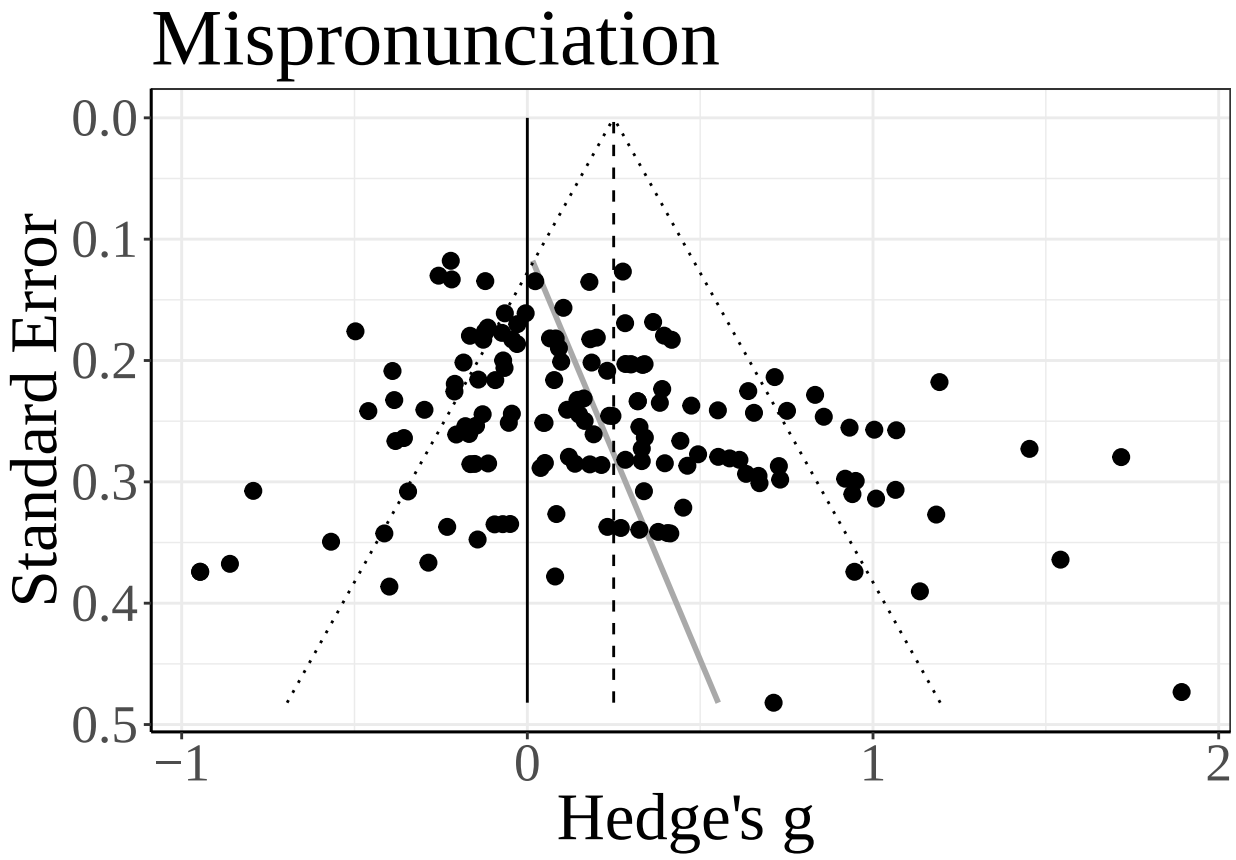
Plots adapted from Sakaluk, 2016, see also Black & Bergmann, 2017

https://sakaluk.wordpress.com/2016/02/16/7-make-it-pretty-plots-for-meta-analysis/

Funnel Plot for Correct Object Identification

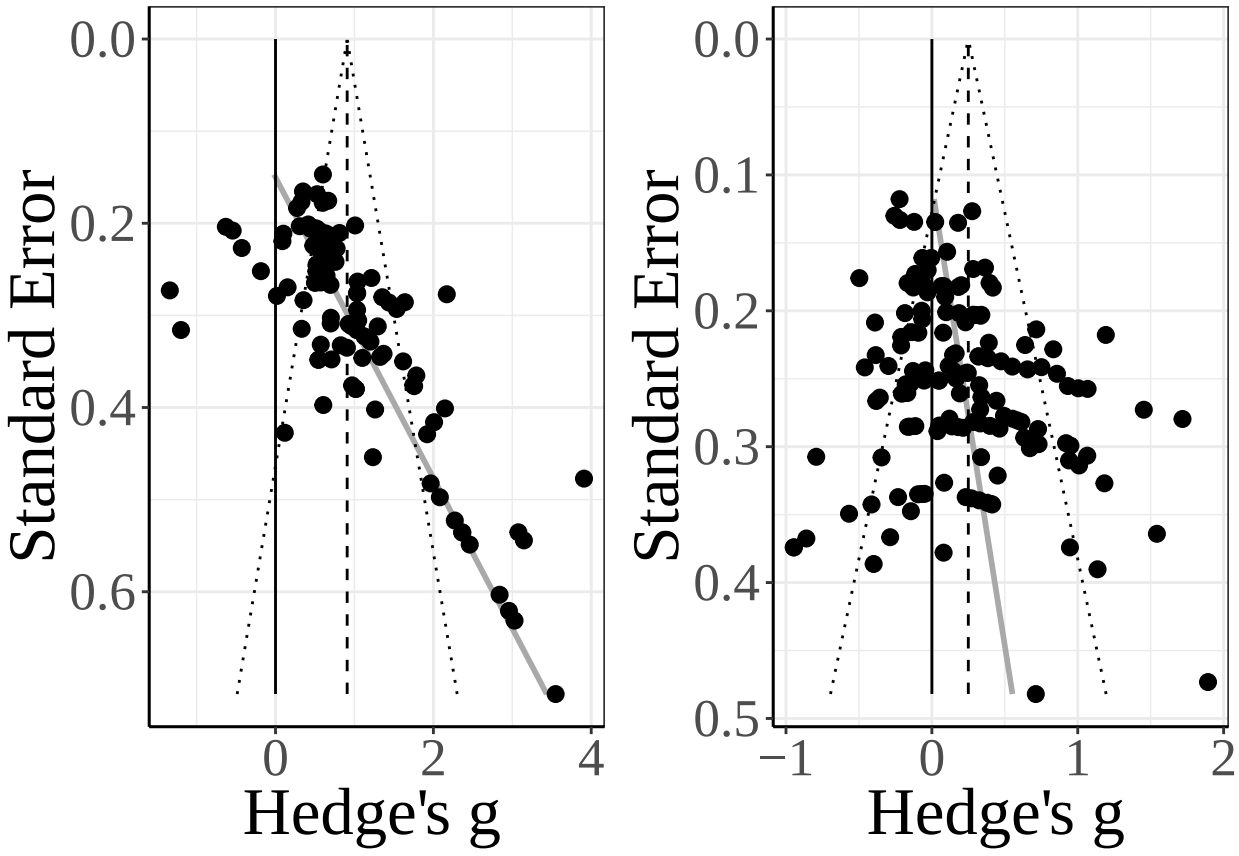


Funnel Plot for Mispronunciation Object Identification



Combine both funnel plots for figure

Below is the plot used in Figure 1. Funnel plots for object identification for correct (left) and mispronounced (right) words, plotting the standard error of the effect size in relation to effect size. The black line marks zero, the dashed grey line marks the effect estimate, and the grey line marks funnel plot asymmetry.



P-curve

Export Data for P-curve

This step creates a text file that can be used in the p-curve app: http://www.p-curve.com/app4/

for correct word object identification see "p_curve_co.txt" file

for mispronounced word object identification see "p_curve_mp.txt" file

Just copy and paste the .txt onto the website and voila!

```
## [1] TRUE
```

```
## [1] TRUE
```

Calculate Power

The median sample size across studies in our dataset was 26. To study infants' mispronunciation senstivity, which we estimate to have an effect size of 0.5, this test gives the number of participants (n = 26.14) required in a within-participant design using a one-sided t-test to conduct a study which has 80% power.

```
##
##      Paired t test power calculation
##
##               n = 26.13753
```

```
##               d = 0.5
##       sig.level = 0.05
##           power = 0.8
##     alternative = greater
##
## NOTE: n is number of *pairs*
```