MP Publication Bias

originally Christina Bergmann, modified by Katie Von Holzen

Contents


```
## 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. All three tests show evidence of significant asymmetry.

```
##
## Rank Correlation Test for Funnel Plot Asymmetry
##
## Kendall's tau = 0.3235, p < .0001
```

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

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

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/

These files can be found in "p_curve_app/"

for correct: p_curve_co.txt for mispronounced: p_curve_mp.txt

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

NOTE: This will always append lines to the existing txt file, check for double writing!

Calculate Power

What is the power of the studies in the dataset?

```
##
##      Paired t test power calculation
##
##               n = 26
##               d = 0.4953466
##       sig.level = 0.05
##           power = 0.6800795
##     alternative = two.sided
##
## NOTE: n is number of *pairs*
```

What is the average power to detect a mispronunciation sensitivity effect (to be compared with p-curve estimate)

```
##
##      Paired t test power calculation
##
##               n = 26.60335
##               d = 0.4953466
##       sig.level = 0.05
##           power = 0.8
##     alternative = greater
##
## NOTE: n is number of *pairs*
```

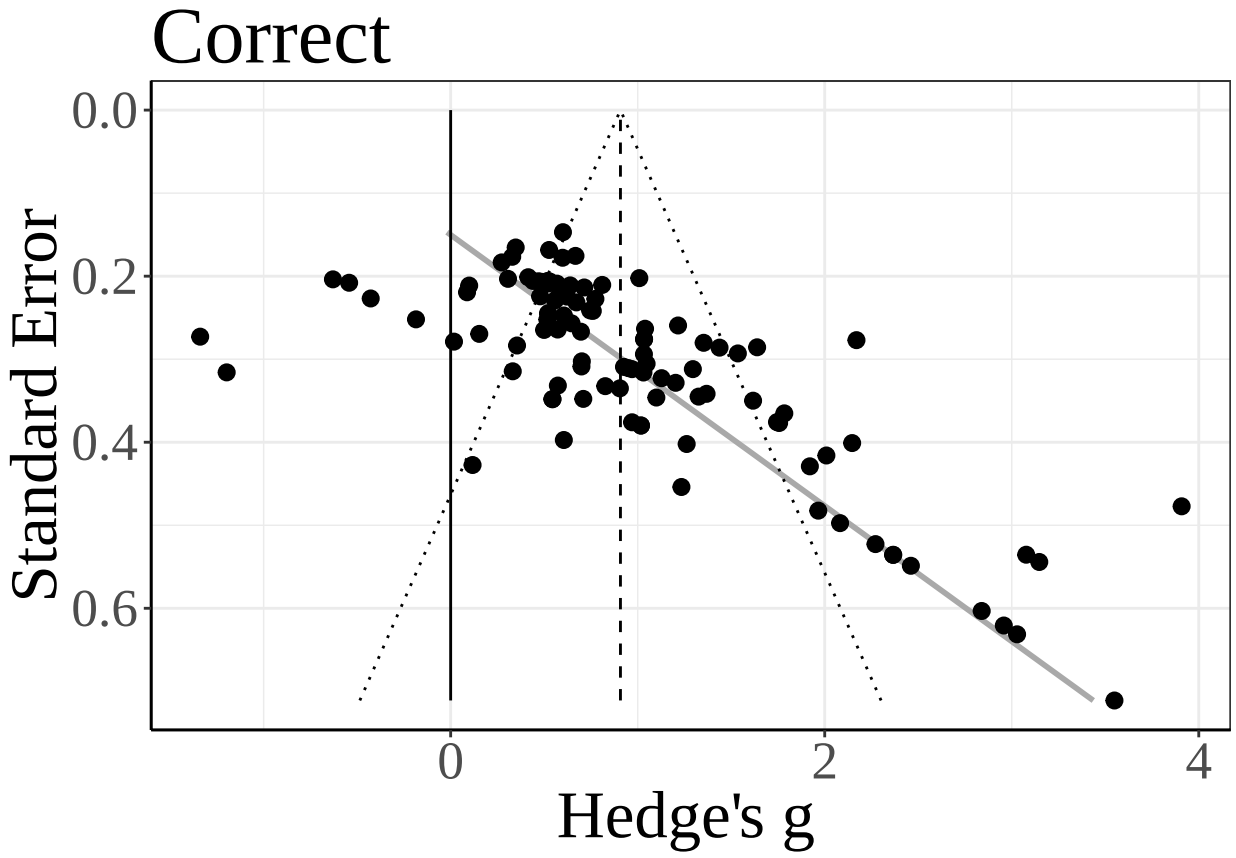
Draw Funnel Plots

Plots from Sakaluk, 2016

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

Funnel Plot for Correct Object Identification

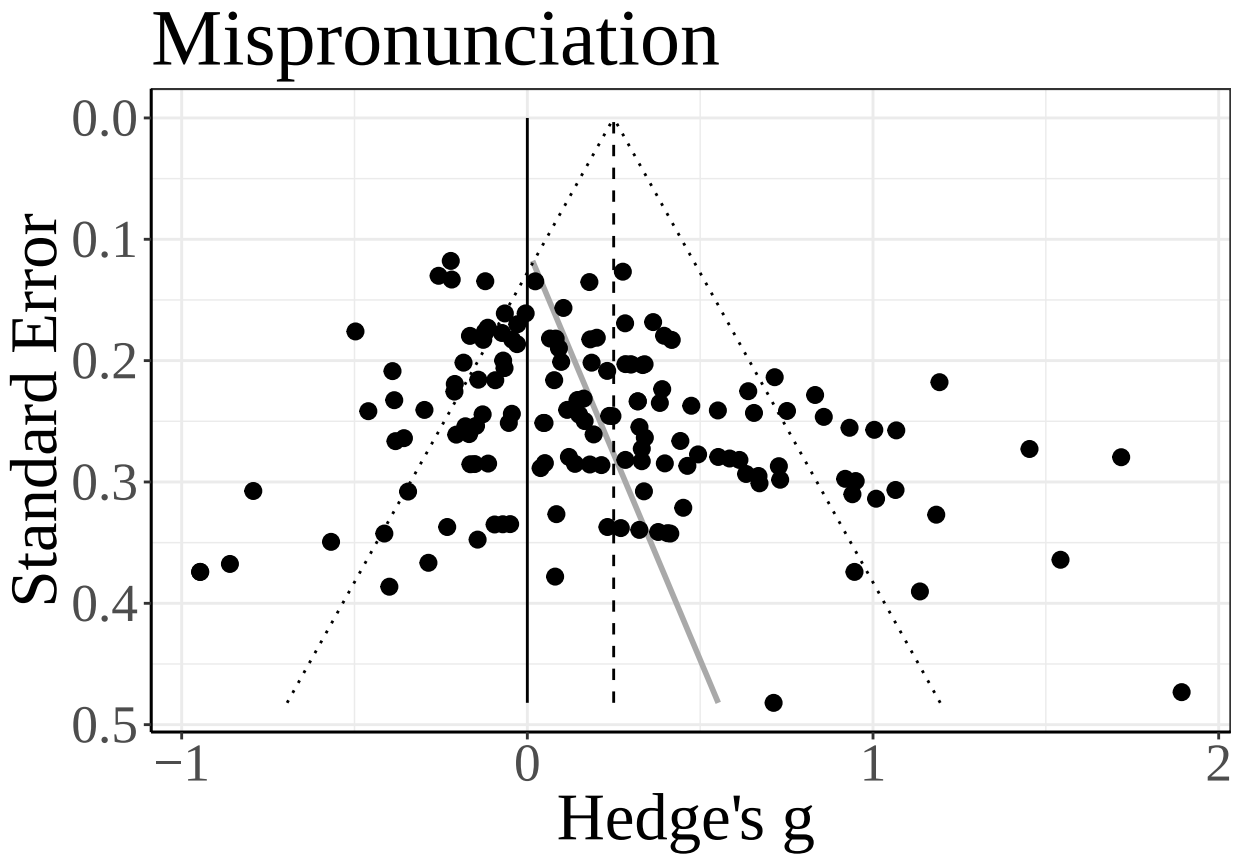
Funnel Plot for Correct Object Identification



Funnel Plot for Mispronunciation Object Identification

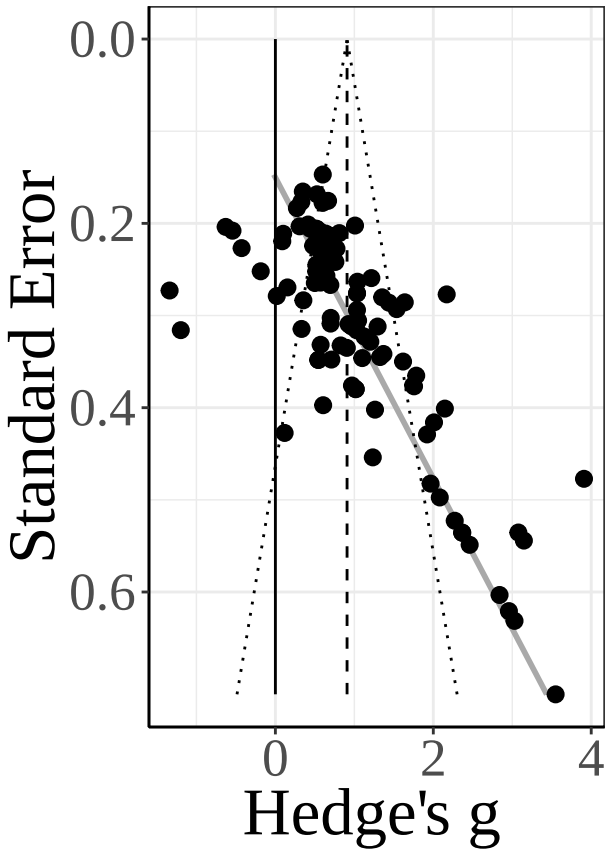
```
##
## Multivariate Meta-Analysis Model (k = 147; method: REML)
##
##   logLik  Deviance       AIC       BIC      AICc
## -70.1217  140.2434  146.2434  155.1942  146.4124
##
## Variance Components:
##
## outer factor: short_cite (nlvls = 32)
## inner factor: collapse   (nlvls = 52)
##
##             estim    sqrt  fixed
```

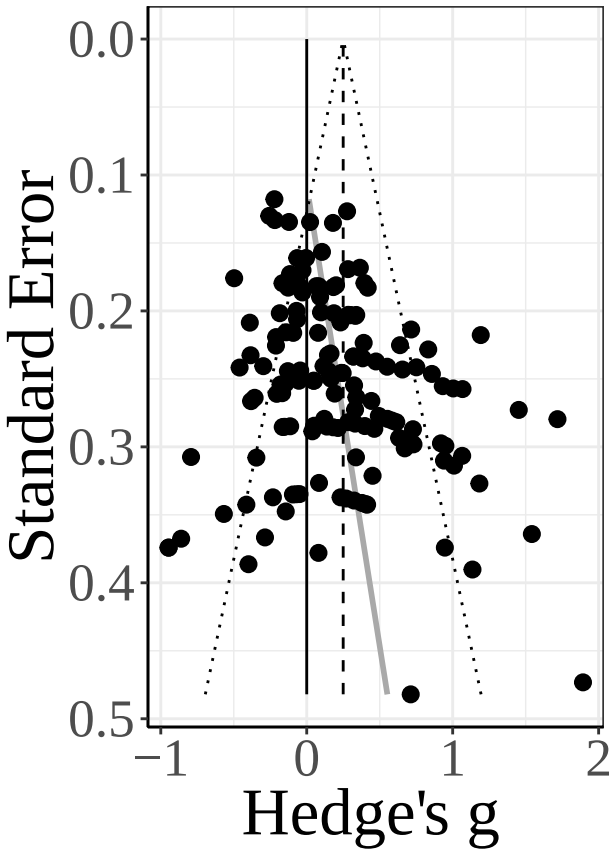
```
## tau^2      0.1192  0.3453     no
## rho        0.5924             no
##
## Test for Heterogeneity:
## Q(df = 146) = 462.5143, p-val < .0001
##
## Model Results:
##
## estimate       se     zval     pval    ci.lb    ci.ub
##   0.2498   0.0597   4.1835   <.0001   0.1328   0.3668      ***
##
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```



Combine both funnel plots for figure

```
## pdf
##   2
```


Standard Error
0.0
0.2
0.4
0.6
0
2
4
Hedge's g


Standard Error
0.0
0.1
0.2
0.3
0.4
0.5
−1
0
1
2
Hedge's g