Appendix

Torfinn and Carolina

November 24, 2014

1 Introduction

We created an appendix of meta-analysis paper. To be able to visualize the output, we used an example dataset taken from Gibson et al. 2011.

The dataset to be working with should be named "data.sub". The conducted analysis using the function rma from the metafor pacakge should be renamed as such: rma of a random effects model should be named "rma.RE" and an rma of a fixed effects model should be named "rma.FE" in order for the automatisation to work. IF a meta-regression has been conducted, it should be called "rma.RE.meta" or "rma.FE.meta" respectively. Other than that, the metafor package in R needs to be installed.

?? How can a an automised table be created for rows from e.g. different rma objects? In our case, we just have one rma object so one row is produced. If the people conduct different rmas for different data subsets, it would be nice to have this in the same table as well!

Table 1: Results of the meta-analysis. Includes the the egger's test and the fails-safe number for publication bias testing.

	Effect.Size	SE.of.Effect.Size	CI..lb.	CI.ub.	P.ES.	Q	P.Q.	I.2	Egger	P.Egger.	FSN
Value	-0.28	0.12	-0.52	-0.04	0.02	47.05	0.12	27.22	-0.44	0.66	77.00

This table should work once you have saved the rma.RE.meta and loaded it at the top of the document!!! Take it out of the %.

Table 2: Results of the meta-regression. Test for heterogeneity taking all four continents into account

	Effect.Size1	Effect.Size2	Effect.Size3	Effect.Size4	SE.of.Effect.Size1	SE.of.Effect.Size2	SE.of.Effect.Size3	SE.of.Effect.Si
Africa	0.14	-0.39	-0.39	-0.59	0.32	0.39	0.43	(

To do:

Add a table with the results from the meta regression + add a bubble plot. Add the 4 figures as well and a table for the sensitivity analysis.

!!! I tried saving the rma.meta.RE as an object but I encountered problems with saving it, as it said it cannot open the compressed file. Haven't found a solution till now. Maybe you can save the object? :)

Do the same for the meta package or use the forest plot from the meta package

Notes:

Are we going to make two scripts? One for meta and one for metafor or are we going to do a combination? Plus write a function for this script? Don't know if this such a good idea as the

Study 1		2.17%	−1.39 [−2.85 , 0.07]
Study 2		1.11%	2.41 [0.25 , 4.56]
Study 3		1.55%	−1.67 [−3.45 , 0.11]
Study 4		3.70%	−0.64 [−1.66 , 0.37]
Study 5		2.52%	−0.85 [−2.18 , 0.47]
Study 6		1.97%	−0.52 [−2.07 , 1.03]
Study 7		3.42%	−1.74 [−2.81 , −0.66]
Study 8		1.25%	−0.24 [−2.26 , 1.77]
Study 9		3.06%	−0.56 [−1.72 , 0.60]
Study 10		3.06%	0.55 [−0.61 , 1.71]
Study 11		8.34%	−0.70 [−1.10 , −0.29]
Study 12		2.57%	−1.58 [−2.89 , −0.27]
Study 13		0.56%	−1.23 [−4.35 , 1.88]
Study 14		2.70%	0.00 [−1.27 , 1.26]
Study 15		5.15%	0.72 [−0.05 , 1.49]
Study 16		2.09%	−0.92 [−2.41 , 0.57]
Study 17		1.28%	−0.18 [−2.18 , 1.81]
Study 18		1.21%	−0.31 [−2.36 , 1.74]
Study 19		2.31%	−0.29 [−1.69 , 1.11]
Study 20		3.83%	−0.28 [−1.27 , 0.70]
Study 21		4.86%	0.42 [−0.39 , 1.23]
Study 22		2.08%	−0.05 [−1.54 , 1.45]
Study 23		3.18%	0.01 [−1.12 , 1.14]
Study 24		3.18%	−0.67 [−1.81 , 0.46]
Study 25		1.30%	−0.13 [−2.11 , 1.84]
Study 26		2.01%	−0.39 [−1.92 , 1.13]
Study 27		2.31%	−0.28 [−1.68 , 1.11]
Study 28		3.87%	0.00 [−0.98 , 0.98]
Study 29		2.35%	−0.07 [−1.46 , 1.31]
Study 30		1.12%	−0.45 [−2.60 , 1.70]
Study 31		1.80%	−0.36 [−1.99 , 1.27]
Study 32		1.69%	−0.61 [−2.30 , 1.09]
Study 33		3.18%	−0.10 [−1.23 , 1.03]
Study 34		1.60%	−0.79 [−2.54 , 0.96]
Study 35		3.30%	0.93 [−0.17 , 2.03]
Study 36		2.77%	−0.20 [−1.45 , 1.04]
Study 37		2.35%	−0.01 [−1.40 , 1.37]
Study 38		3.21%	0.27 [−0.86 , 1.39]
RE Model		100.00%	−0.28 [−0.52 , −0.04]

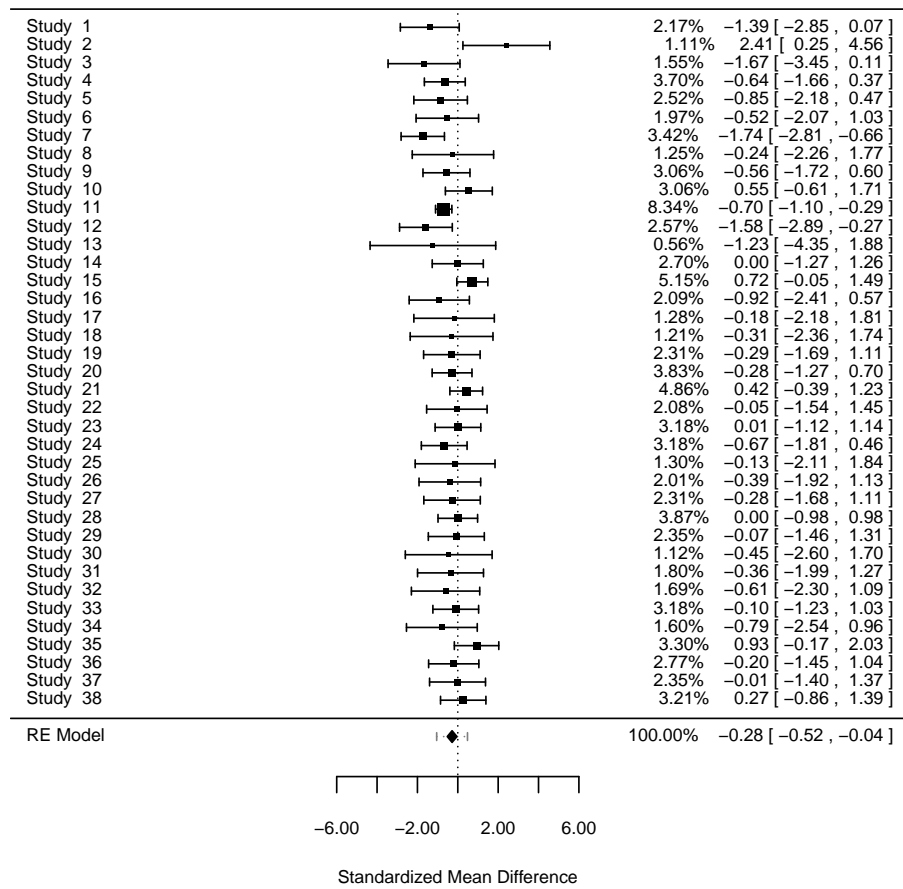−6.00   −2.00   2.00   6.00

Standardized Mean Difference

Figure 1: Forest plot of a random effects model. The column on the left represents the study. The weighted percentage is shown as well as the effect size (ES) [+- 95% CI]
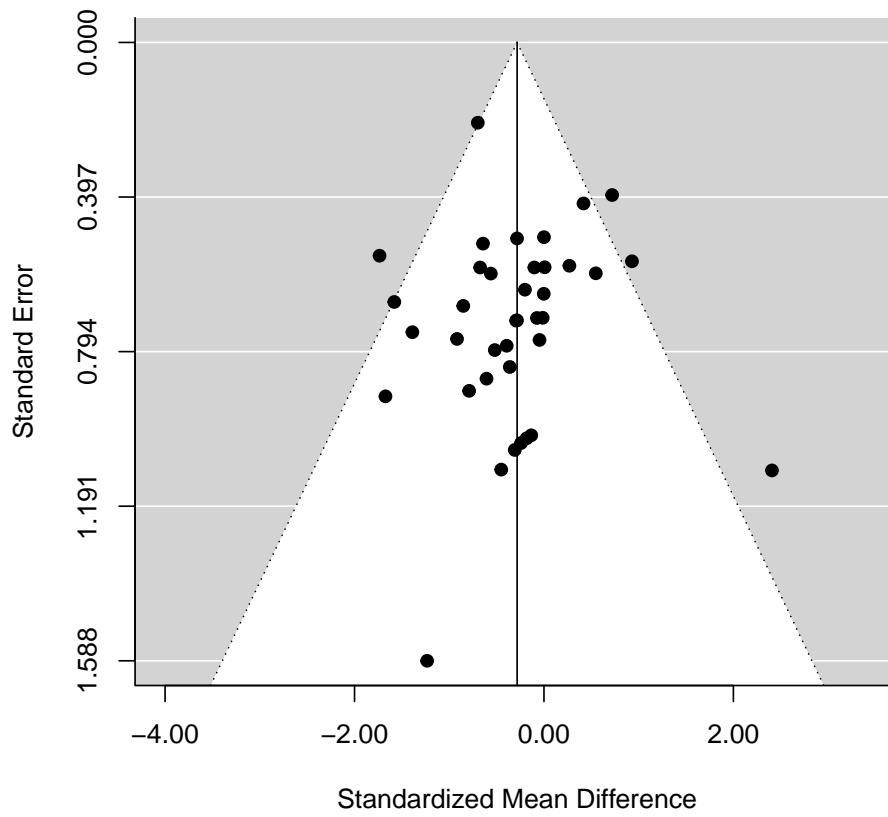
Figure 2: Funnel plot of random effects model displaying possible publication bias. The true ES is displayed by the solid verical line.

appendix is not that good. Especially the table. Till now it would only work with one rma.RE object with one row and not many. Is is possible to combine specific single values of various rma objects? Can we do this?

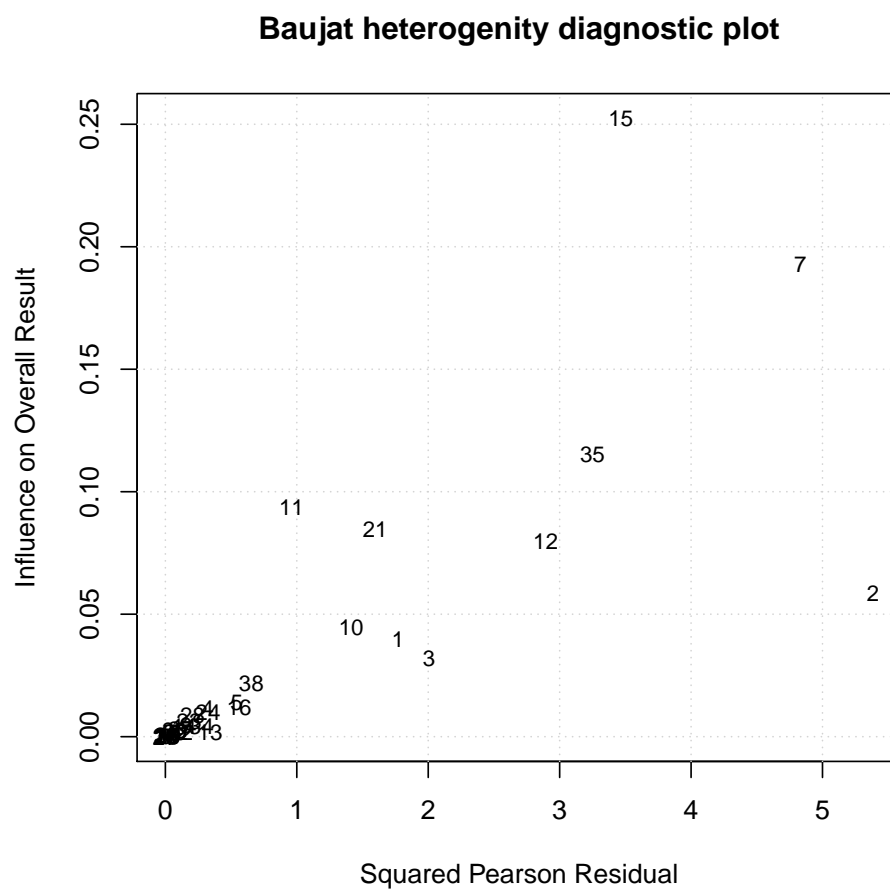To assess possible publication bias, funnel plots can be used for visualization purposes.

Baujat heterogenity diagnostic plot

Figure 3: Baujat heterogenity plot for diagnostics of meta analysis
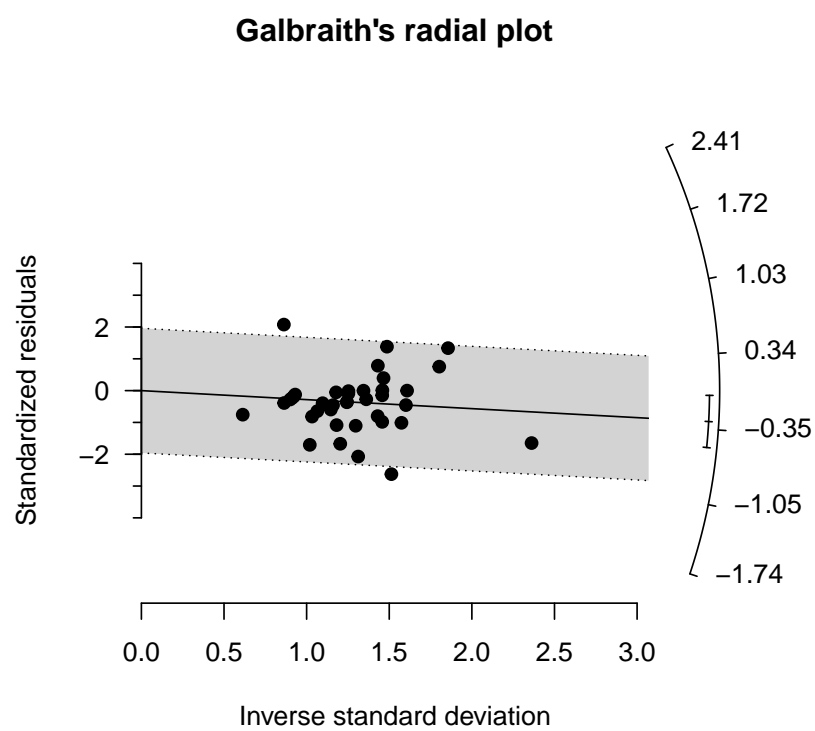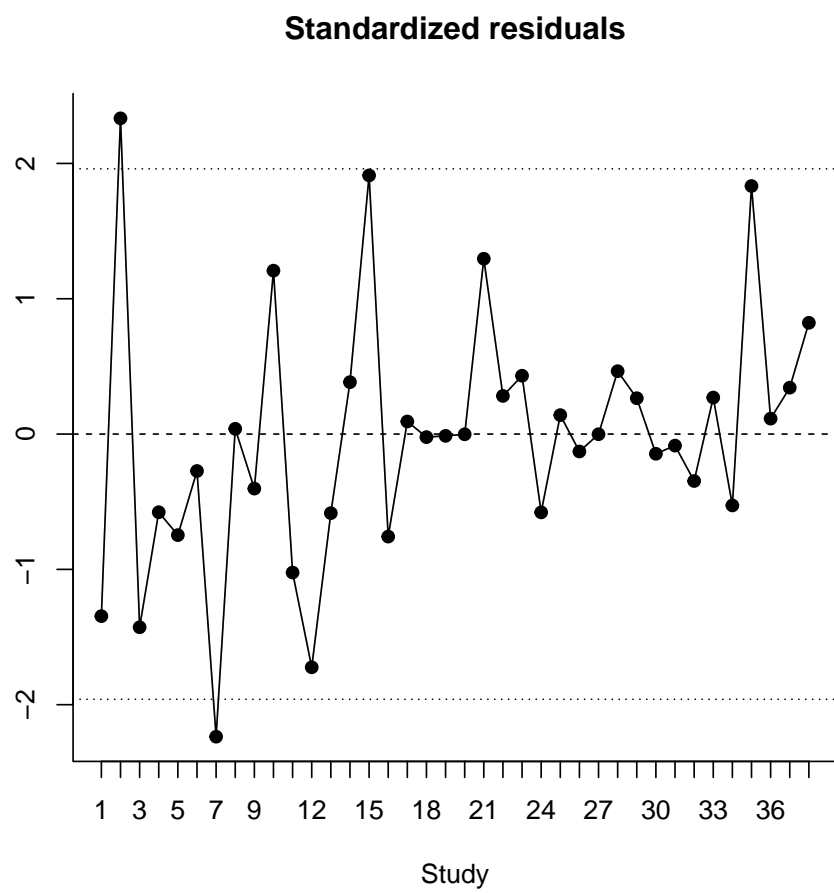
Figure 4: Galbraith's radial plot for diagnostics of meta analysis

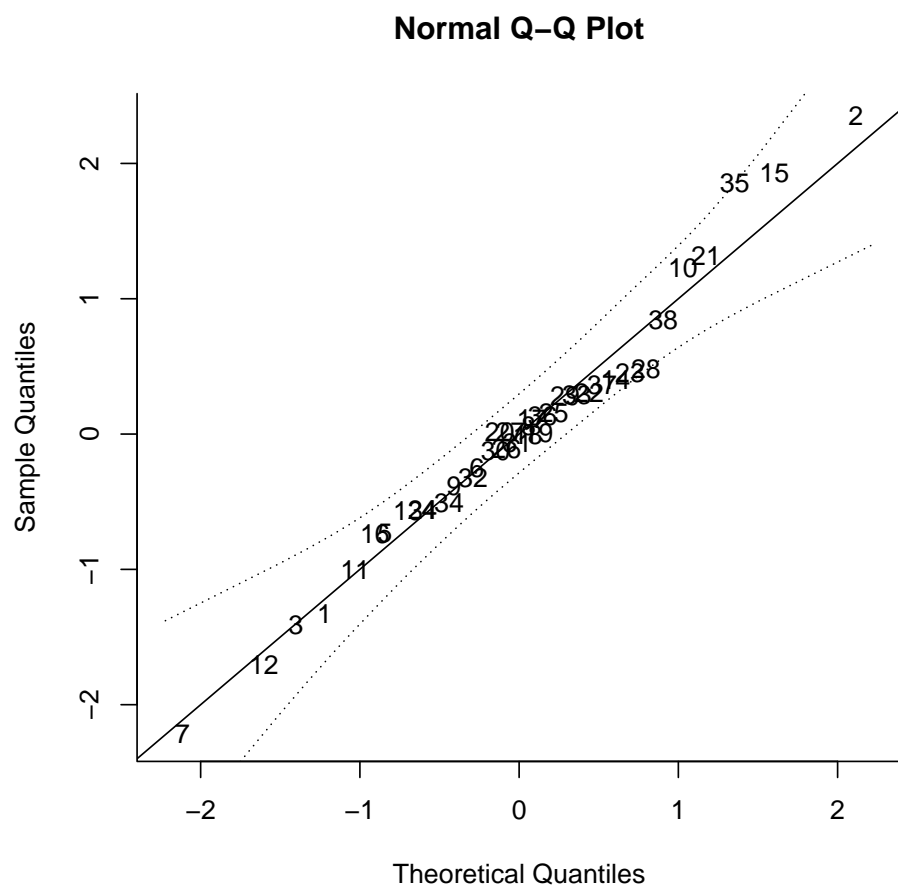Figure 5: Standardized residuals plot for diagnostics of meta analysis

Figure 6: Quantile-Quantile plot for diagnostics of meta analysis

Standardized residuals

Normal Q–Q Plot

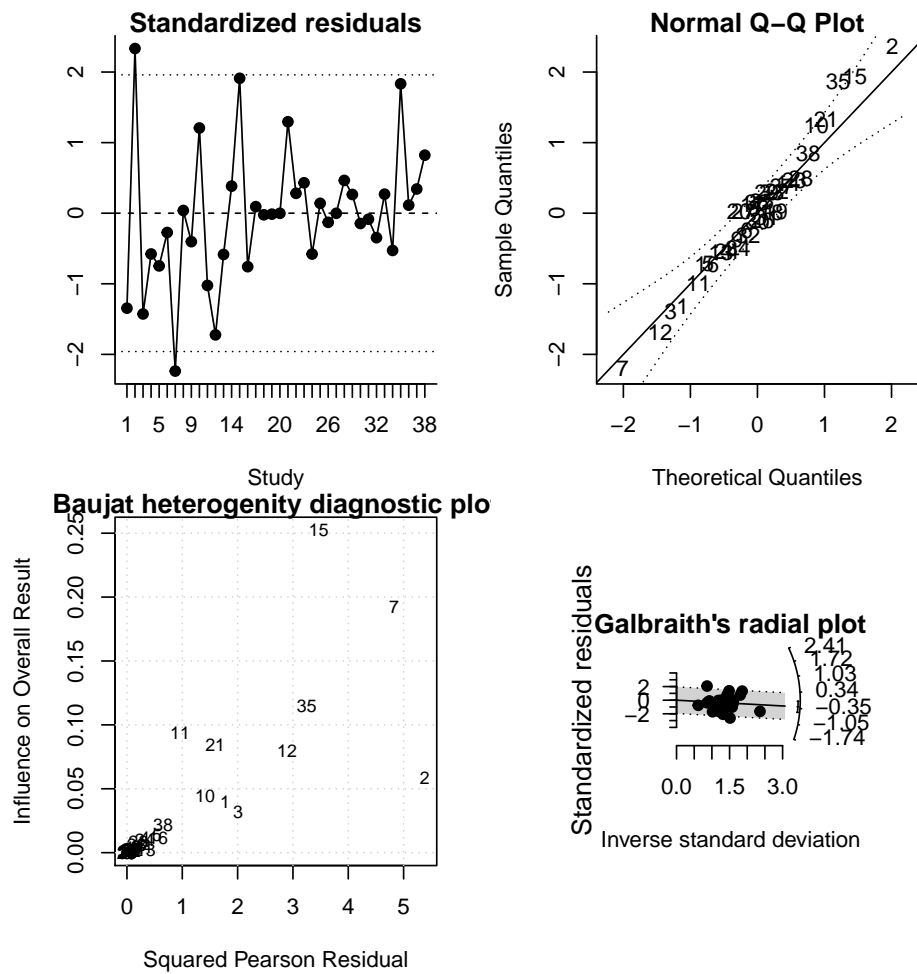**Baujat heterogenity diagnostic plo**

Galbraith's radial plot

Figure 7: Quantile-Quantile plot for diagnostics of meta analysis