

Instructions for Replicating Analyses in R

Clark, William Roberts and Matt Golder. 2023. *Introduction to Interaction Models*. New York: Cambridge University Press.

The quantitative results reported in *Introduction to Interaction Models* were produced in Stata by Matt Golder. You can find a description of the do-files and datasets necessary to replicate all of these quantitative results in [interaction_book_replication_readme.pdf](#). Below we provide instructions to replicate the same quantitative results in R. The R code was written by [Ali Kagalwala](#). The R code is designed to mirror the Stata code as much as possible. The R code produces results that are nearly always identical to those produced in Stata. There are, however, some very minor differences that appear due to, say, the fact that the R and Stata code employ different ‘seeds’ when we use the method of simulated coefficients to obtain various measures of uncertainty. These very minor differences do not qualitatively affect any of the inferences that we make.

Chapter 1

No quantitative results reported.

Chapter 2

No quantitative results reported.

Chapter 3

Exercise Question 2

- [coxappend.dta](#) contains replication data from [Amorim Neto and Cox \(1997\)](#).
- [parties.R](#) uses [coxappend.dta](#) to replicate the results presented in Table 3.3 in the Exercises at the end of Chapter 3 and Table S.1 in the Solutions chapter. It also calculates the various quantities requested in Question 2 of the Exercises at the end of Chapter 3.
- [parties_R.txt](#) shows the output from [parties.R](#).

Exercise Question 3

- [AJPS2006.dta](#) contains replication data from [Adams et al. \(2006\)](#).
- [responsiveness.R](#) uses [AJPS2006.dta](#) to replicate the results presented in Table 3.4 in the Exercises at the end of Chapter 3 and Table S.2 in the Solutions chapter.
- [responsiveness_R.txt](#) shows the output from [responsiveness.R](#).

Exercise Question 4

- [rep_banks_2012a.dta](#) contains replication data from [Banks and Valentino \(2012\)](#).
- [race.R](#) uses [rep_banks_2012a.dta](#) to replicate the results presented in Table 3.5 in the Exercises at the end of Chapter 3 and Table S.3 in the Solutions chapter.
- [race_R.txt](#) shows the output from [race.R](#).

Exercise Question 5

- [anes2016_small.dta](#) contains replication data from [Block, Golder and Golder \(2022\)](#). The original data came from [anes_timeseries_2016.dta](#) downloaded in November 2019.
- [race_gender.R](#) uses [anes2016_small.dta](#) to replicate the results presented in Table 3.6 in the Exercises at the end of Chapter 3 and Table S.4 in the Solutions chapter. It also calculates the various quantities requested in Question 5 of the Exercises at the end of Chapter 3.
- [race_gender_R.txt](#) shows the output from [race_gender.R](#).

Chapter 4

Exercise Question 1

- [rep_banks_2012a.dta](#) contains replication data from [Banks and Valentino \(2012\)](#).
- [race2.R](#) uses [rep_banks_2012a.dta](#) to replicate the results presented in Table 4.1 in the Exercises at the end of Chapter 4 and Table S.5 in the Solutions chapter. It also calculates the various quantities requested in Question 1 of the Exercises at the end of Chapter 4.
- [race2_R.txt](#) shows the output from [race2.R](#).

Chapter 5

Substantive Application I: Gender, Race, and Support for the Republican Party

- [anes2016_small.dta](#) contains replication data from [Block, Golder and Golder \(2022\)](#). The original data came from [anes_timeseries_2016.dta](#) downloaded in November 2019.
- [anes2016_analysis.R](#) uses [anes2016_small.dta](#) to replicate the results presented in Chapter 5 regarding the substantive application looking at how gender and race interact to affect Republican Party support.
- [anes2016_analysis_R.txt](#) shows the output from [anes2016_analysis.R](#).

Substantive Application II: Ideology, Race, and Support for Barack Obama

- [anes2012_small.dta](#) contains the replication data. The original data comes from the [anes_timeseries_2012.dta](#) downloaded in November 2019.
- [anes2012_analysis.R](#) uses [anes2012_small.dta](#) to replicate the results presented in Chapter 5 regarding the substantive application looking at how ideology and race interact to affect support for Barack Obama.
- [anes2012_analysis_R.txt](#) shows the output from [anes2012_analysis.R](#).

Substantive Application III: Demand and Supply Effects on Women’s Legislative Representation

- `final.dta` contains the replication data from [Dhima \(2022\)](#).
- `analysis.R` uses `final.dta` to replicate the results presented in Chapter 5 regarding the substantive application looking at how demand and supply interact to affect women’s legislative representation around the world.
- `analysis_R.txt` shows the output from `analysis.R`.

Exercise Question 1

- `final.dta` contains the replication data from [Dhima \(2022\)](#).
- `exercise1.R` uses `final.dta` to provide answers related to Question 1 in the Exercises at the end of Chapter 5.
- `exercise1_R.txt` shows the output from `exercise1.R`.

Exercise Question 2

- `rep_banks_2012a.dta` contains replication data from [Banks and Valentino \(2012\)](#).
- `exercise2.R` uses `rep_banks_2012a.dta` to provide answers related to Question 2 in the Exercises at the end of Chapter 5.
- `exercise2_R.txt` shows the output from `exercise2.R`.

Chapter 6

Substantive Application I: Gender, Education, Age, and Support for Feminism

- `anes2016_small.dta` contains replication data from [Block, Golder and Golder \(2022\)](#). The original data came from `anes_timeseries_2016.dta` downloaded in November 2019.
- `anes2016_feminism_analysis.R` uses `anes2016_small.dta` to replicate the results presented in Chapter 6 regarding the substantive application looking at how gender, education, and age interact to affect support for feminism.
- `anes2016_feminism_analysis_R.txt` shows the output from `anes2016_feminism_analysis.R`.
- `feminism_collectdata.R` uses `anes2016_small.dta` to grab the data on age necessary to create the histograms in the two panels of Figure 6.9. The data are saved in `age_educated.csv` and `age_uneducated.csv`.
- `feminism_collectdata_R.txt` shows the output from `feminism_collectdata.R`.

Substantive Application II: The Impact of Demand, Supply, and Regime Type on Women's Legislative Representation

- [final.dta](#) contains the replication data from [Dhima and Golder \(2022\)](#).
- [analysis_regime.R](#) uses [final.dta](#) to replicate the results presented in Chapter 6 regarding the substantive application looking at how demand, supply, and regime type affect women's legislative representation.
- [analysis_regime_R.txt](#) shows the output from [analysis_regime.R](#).
- [regime_collectdata.R](#) uses [final.dta](#) to grab the data necessary to create the histograms, "balls", and significance region in Figures 6.17 and 6.18. The data are saved in [labor_R.csv](#), [labor0_R.csv](#), [labor20.csv](#), [predictions0_R.csv](#), [predictions10_R.csv](#), [predictions20_R.csv](#), [predictions30_R.csv](#), [predictions40_R.csv](#), [predictions50_R.csv](#), [predictions60_R.csv](#), [predictions70_R.csv](#), [predictions80_R.csv](#), [predictions90_R.csv](#), and [predictions100_R.csv](#).
- [regime_collectdata_R.txt](#) shows the output from [regime_collectdata.R](#).

Exercise Question 1

- [anes2012_small.dta](#) contains the replication data. The original data comes from the [anes_timeseries_2012.dta](#) downloaded in November 2019.
- [exercise1_analysis.R](#) uses [anes2012_small.dta](#) to provide answers related to Question 1 in the Exercises at the end of Chapter 6.
- [exercise1_analysis_R.txt](#) shows the output from [exercise1_analysis.R](#).

Exercise Question 2

- [final.dta](#) contains the replication data from [Dhima and Golder \(2022\)](#).
- [exercise2_analysis.R](#) uses [final.dta](#) to provide answers related to Question 2 in the Exercises at the end of Chapter 6.
- [exercise2_analysis_R.txt](#) shows the output from [exercise2_analysis.R](#).

Chapter 7

- [sentiment.dta](#) contains replication data from [Crabtree et al. \(2020\)](#).
- [sentiment.R](#) uses [sentiment.dta](#) to replicate the results presented in Chapter 7 regarding the substantive application looking at party ideology and campaign sentiment.
- [sentiment_R.txt](#) shows the output from [sentiment.R](#).

Chapter 8

Substantive Application: Determinants of Pre-Electoral Coalition Formation

- [pec_BJPS.dta](#) contains replication data from [Golder \(2006a,b\)](#).
- [pec.R](#) uses [pec_BJPS.dta](#) to replicate some of the results presented in Chapter 8 regarding the substantive application looking at the determinants of pre-electoral coalition formation. The replicated results refer to Table 8.2 as well as the effects related to the propensity of pre-electoral coalition formation, including the information shown in Figures 8.10 and 8.11.
- [pec_R.txt](#) shows the output from [pec.R](#).
- [pec2.R](#) uses [pec_BJPS.dta](#) to replicate the results presented in Chapter 8 regarding the substantive effect of *Disproportionality* on the probability of pre-electoral coalition formation, including the information shown in Figures 8.12, 8.13, and 8.14.
- [pec2_R.txt](#) shows the output from [pec2.R](#).
- [pec3.R](#) uses [pec_BJPS.dta](#) to replicate the results presented in Chapter 8 regarding the substantive effect of *Polarization* on the odds of pre-electoral coalition formation, including the information shown in Figures 8.15.
- [pec3_R.txt](#) shows the output from [pec3.R](#).
- [pec4.R](#) uses [pec_BJPS.dta](#) to replicate the results presented in Chapter 8 regarding the substantive effect of *Coalition Size* on the probability of pre-electoral coalition formation, including the information shown in Figures 8.16.
- [pec4_R.txt](#) shows the output from [pec4.R](#).
- [pec_collectdata.R](#) uses [pec_BJPS.dta](#) to grab the data necessary to help create various histograms and confidence intervals for figures in Chapter 8. The data are saved in [sona.csv](#), [pec_prob_R.csv](#), [pec_prob2_R.csv](#), [pec_prob3_R.csv](#), [pec_prob4_R.csv](#), [pec_prob5_R.csv](#).
- [pec_collectdata_R.txt](#) shows the output from [pec_collectdata.R](#).

Exercise Question 1

- [pec_BJPS.dta](#) contains replication data from [Golder \(2006a,b\)](#).
- [pec_exercise.R](#) uses [pec_BJPS.dta](#) to provide answers related to Question 1 in the Exercises at the end of Chapter 8.
- [pec_exercise_R.txt](#) shows the output from [pec_exercise.R](#).

Chapter 9

Substantive Application: Ideology, Race, and Presidential Approval of Barack Obama

- [anes2012_small.dta](#) contains the replication data. The original data comes from the [anes_timeseries_2012.dta](#) downloaded in November 2019.

- `anes2012_analysis_approval.R` uses `anes2012_small.dta` to replicate the results presented in Chapter 9 regarding the substantive application looking at how ideology and race interact to affect presidential approval for Barack Obama.
- `anes2012_analysis_approval_R.txt` shows the output from `anes2012_analysis_approval.R`.
- `approval_collectdata.R` uses `anes2012_small.dta` to grab the data necessary to help create confidence intervals for figures in Chapter 9. The data are saved in `odds_R.csv`.
- `approval_collectdata_R.txt` shows the output from `approval_collectdata.R`.

Chapter 10

Substantive Application: Ideology, Gender, and Party Support in the 1992 UK Elections

- `bes1992_small.dta` contains the replication data. The original data comes from the `92BES.dta` downloaded in June 2021.
- `bes1992_analysis.R` uses `bes2012_small.dta` to replicate the results regarding voter utility presented in Chapter 10 for the substantive application looking at how ideology and gender interact to affect party support in the 1992 UK elections.
- `bes1992_analysis_R.txt` shows the output from `bes1992_analysis.R`.
- `bes1992_analysis2.R` uses `bes2012_small.dta` to replicate the results regarding the substantive effect of ideological distance related to the appropriate level of government intervention from the substantive application in Chapter 10 looking at how ideology and gender interact to affect party support in the 1992 UK elections.
- `bes1992_analysis2_R.txt` shows the output from `bes1992_analysis2.R`.
- `bes1992_analysis3.R` uses `bes2012_small.dta` to replicate many of the results regarding the substantive effect of being female presented in the substantive application in Chapter 10 looking at how ideology and gender interact to affect party support in the 1992 UK elections.
- `bes1992_analysis3_R.txt` shows the output from `bes1992_analysis3.R`.
- `bes1992_collectdata.R` uses `bes1992_small.dta` to grab the data necessary to help create figures in Chapter 10. The data are saved in `bes_female_R.csv`, `bes_female2_R.csv`, `sim_pred_R.csv`, and `sim_pred2_R.csv`.
- `bes1992_collectdata_R.txt` shows the output from `bes1992_collectdata.R`.

Exercise Question 1

- `bes1992_small.dta` contains the replication data. The original data comes from the `92BES.dta` downloaded in June 2021.
- `bes1992_exercise1.R` uses `bes1992_small.dta` to provide answers related to Question 1 in the Exercises at the end of Chapter 10.
- `bes1992_exercise1_R.txt` shows the output from `bes1992_exercise1.R`.

References

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