

A tutorial on setting up a reproducible workflow in R and R Studio with Quarto

Richard Ramsey^{1§*}  & Second Author^{2, 3§}

¹ETH Zurich, Department of Health Sciences and Technology

²Example Institution, Department of Examples

³Example Second Institution, Department of Examples

This is where the abstract would go.

Keywords: these are the key words

Words: 343

*Send correspondence to: Richard Ramsey, richard.ramsey@hest.ethz.ch. §Richard Ramsey & Second Author contributed equally to this work. This is an example author note.

1. Introduction

2. Methods

We report how we determined our sample size, all data exclusions (if any), all manipulations, and all measures in the study (Simmons et al., 2012).

2.1. Participants

2.2. Material

2.3. Procedure

2.4. Data analysis

We used R version (R Core Team, 2025) for all our analyses.

3. Results

3.1. Descriptive statistics

Raw data plots.
Accuracy by condition violin plot (Figure 1).

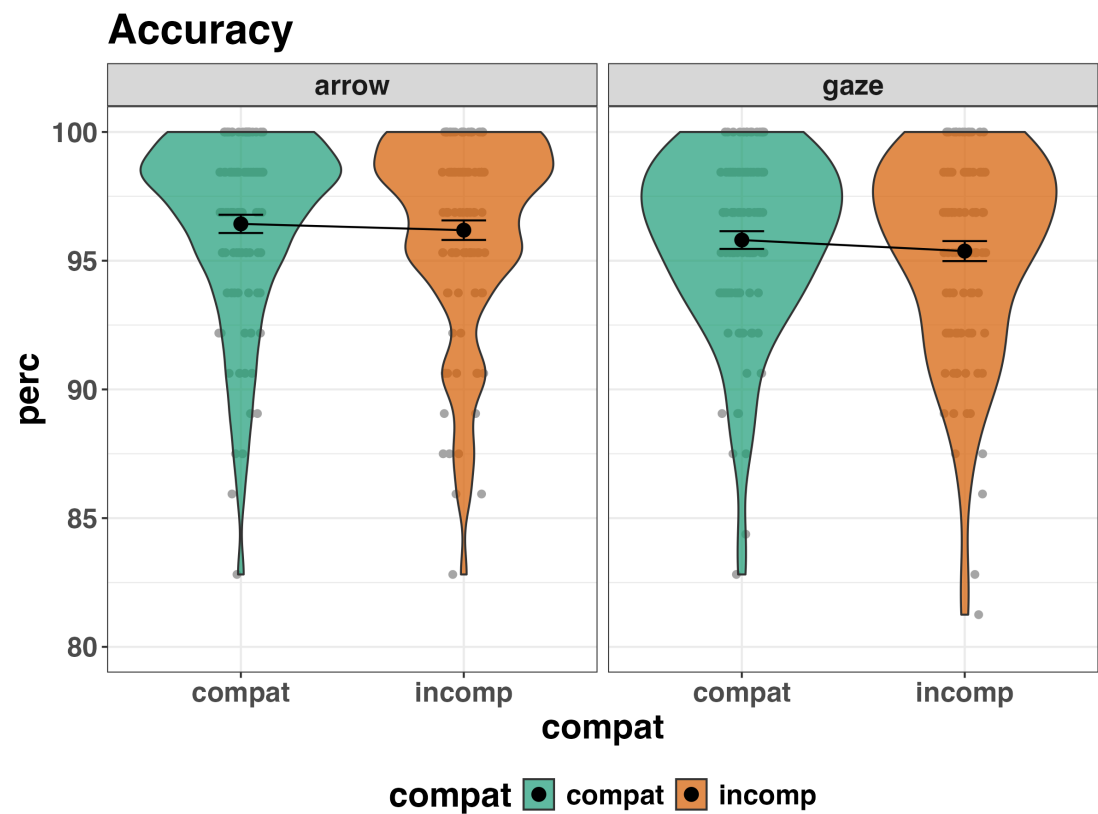


Figure 1: Accuracy is quite high for both types of stimuli.

Reaction time by condition violin plot (Figure 2).

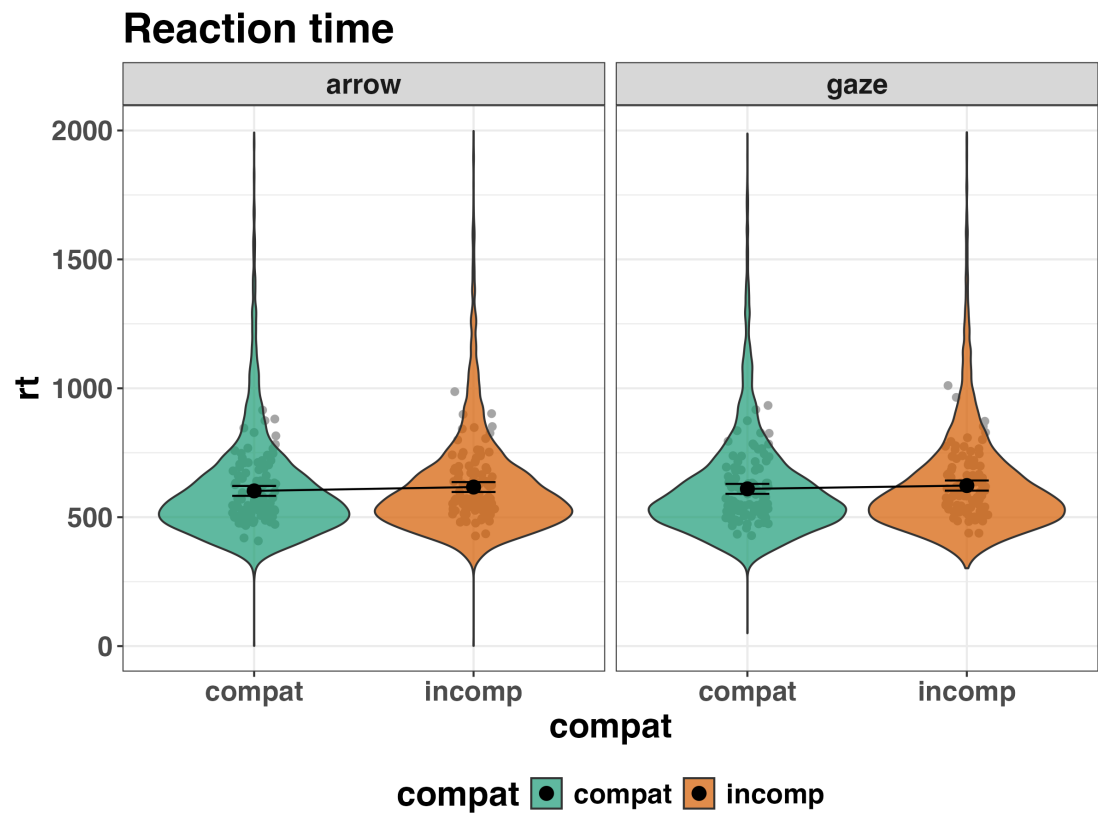


Figure 2: RT as a function of stimuli and conditions.

Reaction time by difference scores violin plot (Figure 3).

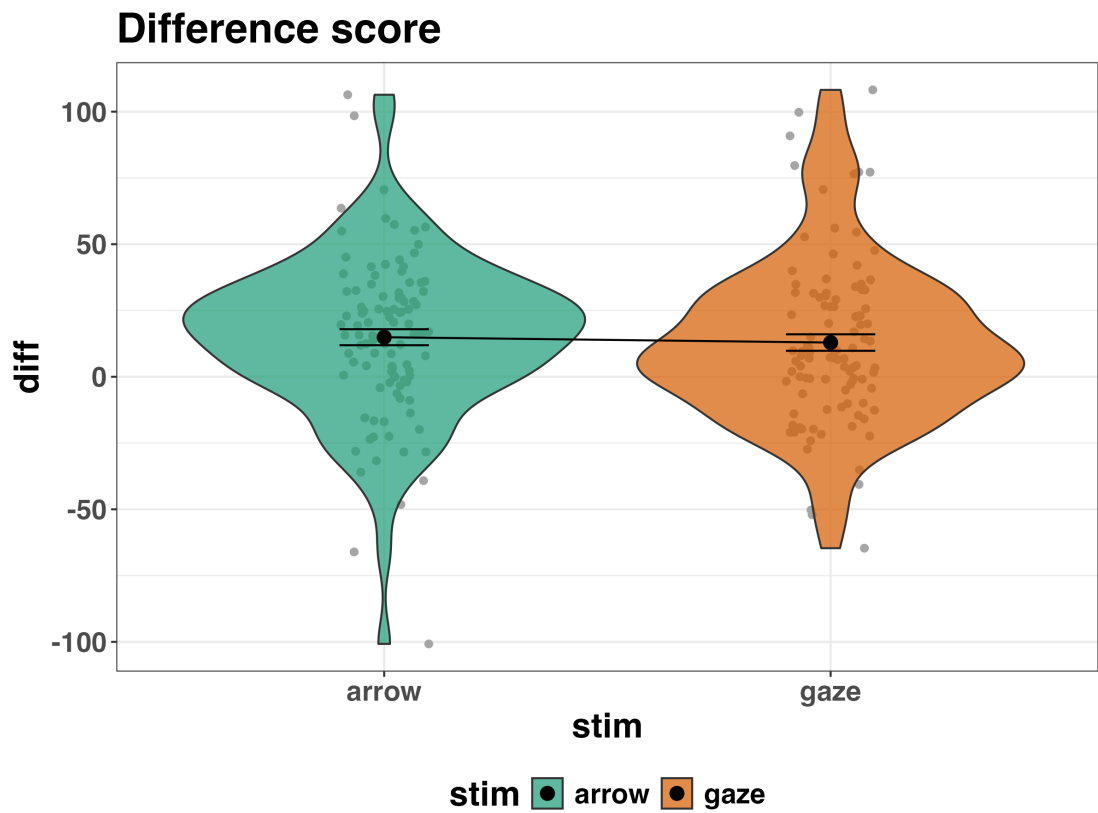


Figure 3: RT difference scores (incomp - compat) by stimulus type.
Reaction time by difference scores density plot with quantiles (Figure 4).

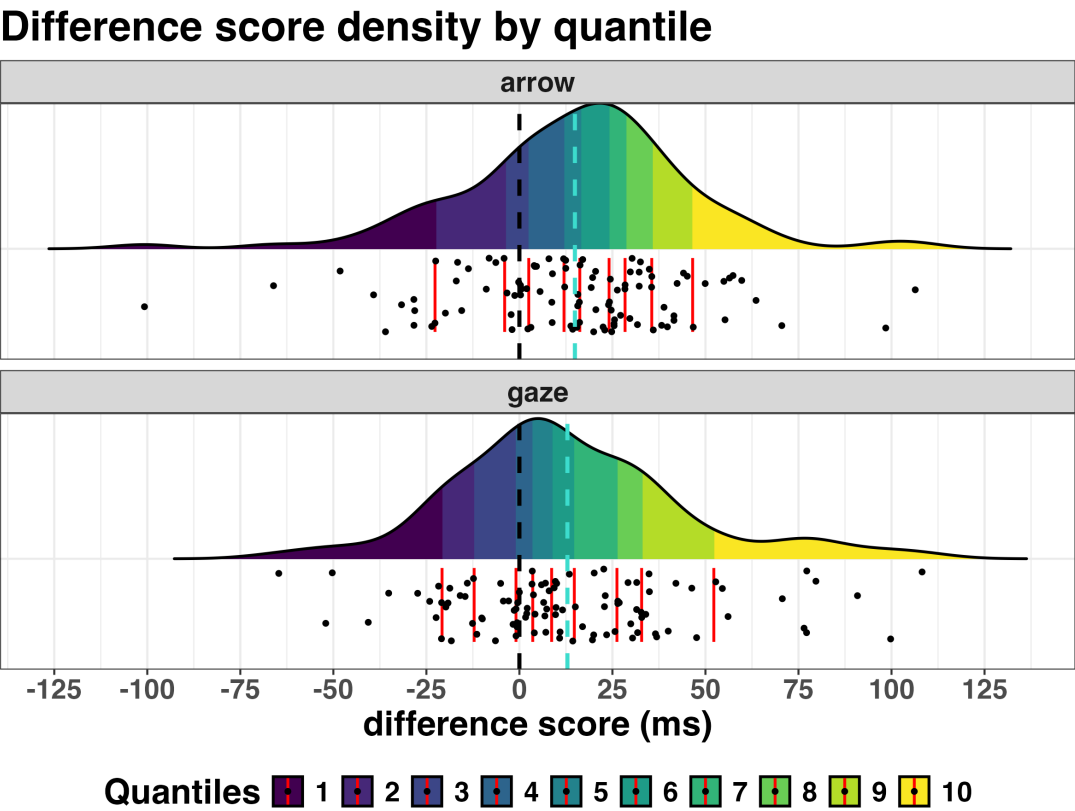


Figure 4: RT difference scores (incomp - compat) as a density plot.

3.2. Inferential statistics

Now we plot and tabulate parameters from the posterior distribution.
Fixed effects from model b2 (Figure 5).

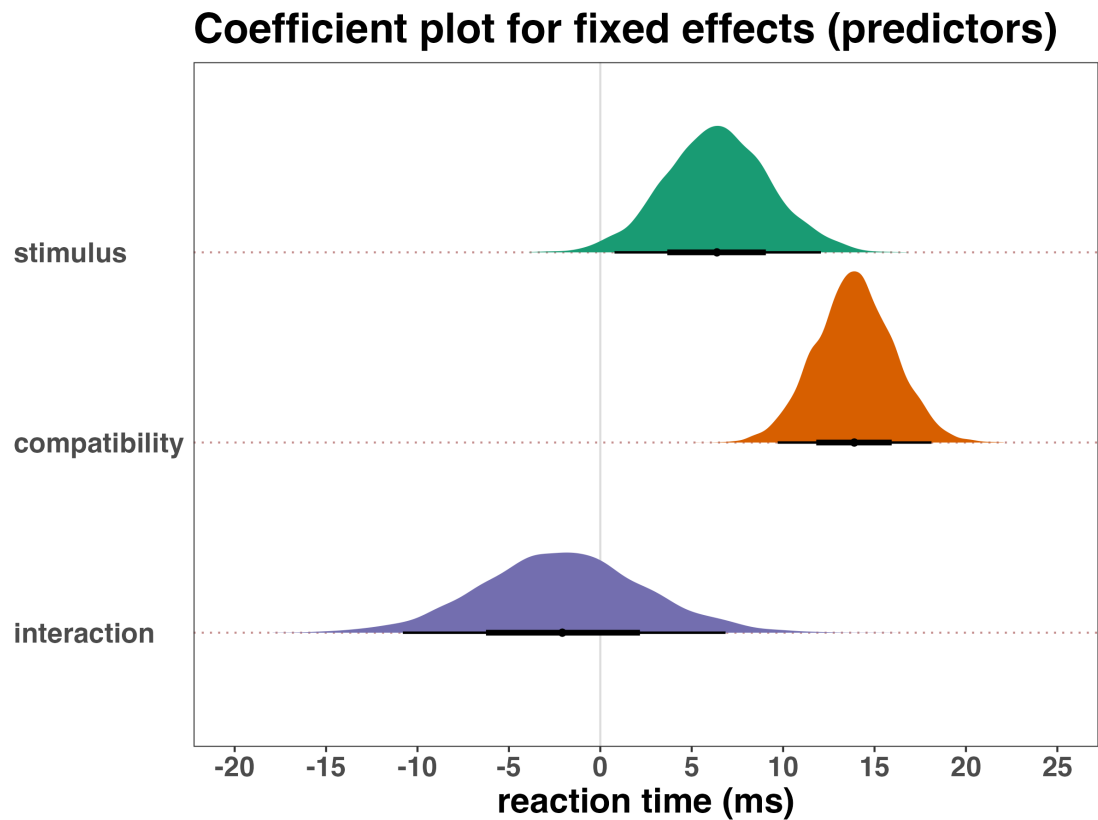


Figure 5: Fixed effects from model b2.

Here are a couple of example tables displaying fixed effects (Table 1, Table 2).

Table 1: Table created with `tinytable::tt()`

term	value	.lower	.upper
intercept	613.9	593.62	635
stimulus	6.4	0.77	12

Note. This is a footnote.

Table 2: Table created with `knitr::kable()`

term	value	.lower	.upper
intercept	613.94	593.62	634.79
stimulus	6.38	0.77	12.07

4. Discussion

5. Disclosures

5.1. Data and code availability

blah.

5.2. Author contributions

We follow the Credit system. <https://credit.niso.org/>
Blah.

5.3. Competing interests

Blah.

6. References

- R Core Team. (2025). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. <https://www.R-project.org/>
- Simmons, J. P., Nelson, L. D., & Simonsohn, U. (2012). *A 21 Word Solution* (SSRN Scholarly Paper 2160588). Social Science Research Network. <https://doi.org/10.2139/ssrn.2160588>

Appendix A: Supplementary Materials

Model formulas

The regression formula for the full model (model b2):
$$rt \sim 1 + stimulus*compatibility + (1 + stimulus*compatibility \mid pid)$$

Note: rt = reaction time (ms); stimulus = blah; compatibility = blah; pid = subject/participant identifier.

A supplementary table

Here, I just reproduce the table from the main manuscript to save time making anything else. But of course in a real paper, you wouldn't do this, you'd just show whatever you needed. It is labelled differently to reflect that it is a supplementary table (Table A.1).

Table A.1: Supplementary table created with `tinytable::tt()`

term	value	.lower	.upper
intercept	613.9	593.62	635
stimulus	6.4	0.77	12

Note. This is a footnote.

A supplementary figure

Let's take a look at the mixing of chains in the model. This is a useful model diagnostic check to see that the model built ok (Figure A.1).

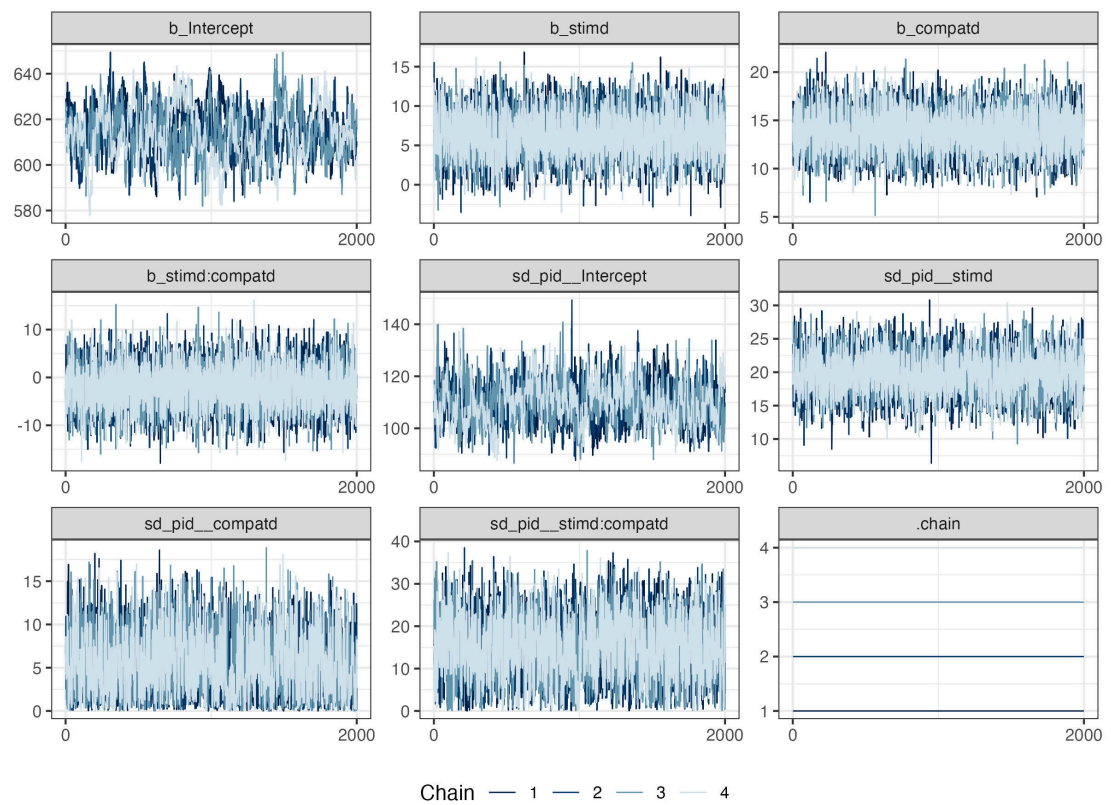


Figure A.1: Caterpillar plots showing the mixing of chains across parameters in model b2.