# A Short Demo of R

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## Author Note

This is a demostration of *papaja*.

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## Abstract

One or two sentences providing a **basic introduction** to the field, comprehensible to a scientist in any discipline. Two to three sentences of **more detailed background**, comprehensible to scientists in related disciplines. One sentence clearly stating the **general problem** being addressed by this particular study. One sentence summarizing the main result (with the words "**here we show**" or their equivalent). Two or three sentences explaining what the **main result** reveals in direct comparison to what was thought to be the case previously, or how the main result adds to previous knowledge. One or two sentences to put the results into a more **general context**. Two or three sentences to provide a **broader perspective**, readily comprehensible to a scientist in any discipline.


*Keywords:* R, Teaching,

Word count: X

# A Short Demo of R

## Introduction

R is a powerful programming language for statistical analyses and more. We can use R for the whole workflow after getting our raw data, from pre-processing to the final manuscript!

Here we will demonstrate how to use `papaja` for preparing manuscript in APA 6th style.

## Methods

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

### Participants

We recruited 44 participants (27 females, age = 20.91 ± 2.58). ....

### Material

We used *Pyschopy 3* to present stimuli and collect participants' responses. ...

### Procedure

We follow the procedure of Sui et al (2012)

### Data analysis

We used R (Version 4.3.3; R Core Team, 2023) and the R-packages *dplyr* (Version 1.1.4; Wickham, François, Henry, Müller, & Vaughan, 2023), *forcats* (Version 1.0.0;

Wickham, 2023), *ggplot2* (Version 3.5.1; Wickham, 2016), *here* (Version 1.0.1; Müller, 2020), *lubridate* (Version 1.9.3; Grolemund & Wickham, 2011), *papaja* (Version 0.1.3; Aust & Barth, 2023), *purrr* (Version 1.0.2; Wickham & Henry, 2023), *readr* (Version 2.1.5; Wickham, Hester, & Bryan, 2023), *report* (Version 0.6.0; Makowski et al., 2023), *stringr* (Version 1.5.1; Wickham, 2022), *tibble* (Version 3.2.1; Müller & Wickham, 2023), *tidyr* (Version 1.3.1; Wickham, Vaughan, & Girlich, 2023), *tidyverse* (Version 2.0.0; Wickham et al., 2019) and *tinylabels* (Version 0.2.4; Barth, 2023) for all our analyses.

## Results

See figure 1 for $d$ prime of the experiment.

Morality ($F(1, 41) = 4.86$, $p = .033$, $\hat{\eta}^2_G = .016$, 90% CI $[.000, .127]$) has an effect on $d$ prime and there is an interaction bewteen these two variables. $F(1, 41) = 12.08$, $p = .001$, $\hat{\eta}^2_G = .055$, 90% CI $[.000, .201]$.

## Discussion

Here we show R is powerful.

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Table 1

*A really beautiful ANOVA table.*

| Effect | $\hat{\eta}^2_G$ | 90% CI | $F$ | $df^{\text{GG}}$ | $df^{\text{GG}}_{\text{res}}$ | $p$ |
|---|---|---|---|---|---|---|
| Identity | .002 | [.000, .065] | 0.31 | 1 | 41 | .579 |
| Morality | .016 | [.000, .127] | 4.86 | 1 | 41 | .033 |
| Identity × Morality | .055 | [.000, .201] | 12.08 | 1 | 41 | .001 |

*Note.* Note that the column names contain beautiful mathematical copy: This is because the table has variable labels.

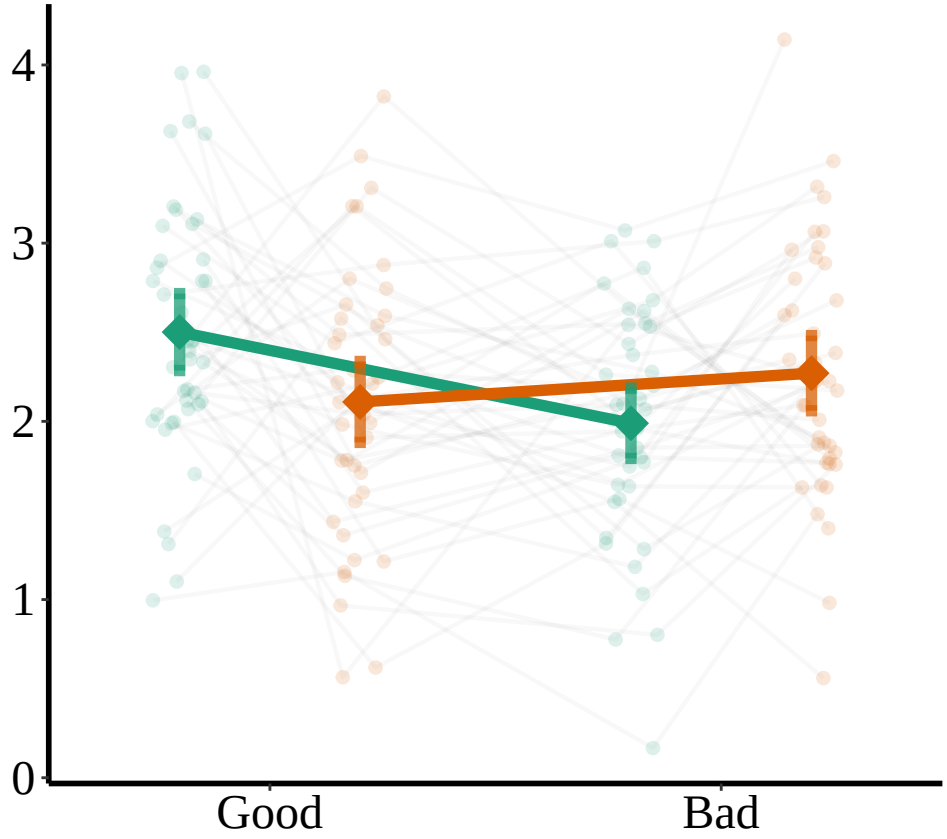


*Figure 1*. *d* prime.