




Advanced Research Methods for Psychologists

Practical Applications in R

What is R?

R is **free**  and **open source** programming language for **statistical computing and graphics**  (but can also do a lot more).

Why R?

- Slowly replacing SPSS as the go-to stats software in social-sci.
- R is also significantly better than Excel for data analysis (which you should not use for data analysis!).
- One of the top 10 programming languages in industry.
- New statistical methods are implemented first in R!
(often never available in commercial applications...)
- Highly extendable – over 10,000 community-developed packages .

Why *not* R?

- Requires *coding* 🧑‍💻, with no point-and-click user interface.
- Slow learning curve...



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The only way to write good code is to write tons of shitty code first.

(I hope can write some shitty code together)

Why R after all?

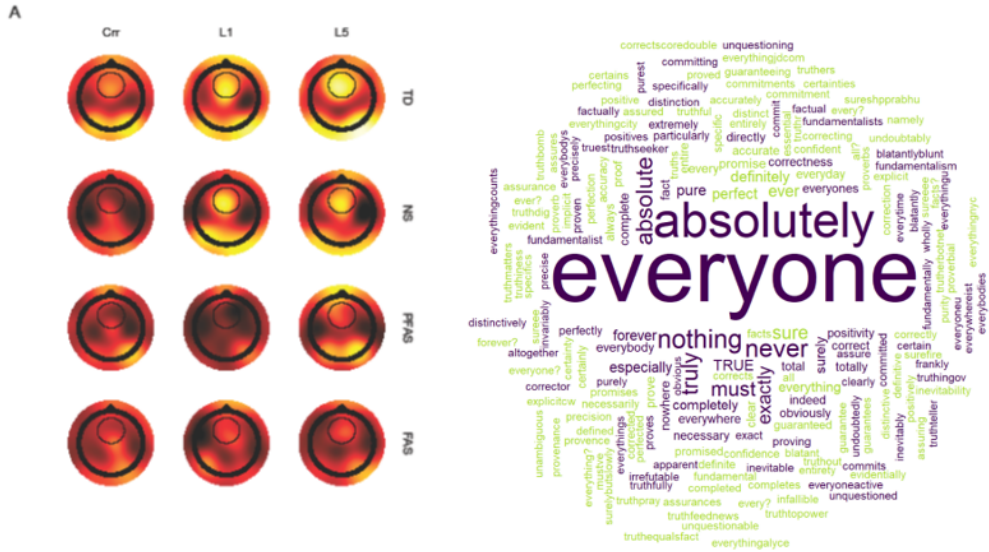
Within R you can:

- **Prepare** your data for analysis and plotting.
- **Model** your data with all the familiar (and new!) stats model.
- Create beautiful **plots and figures**.
- (Even write you whole thesis / papers...)

Long term benefits:

- All of this in a **reproducible manner**.
- **Reuse code** on new data - just copy and paste!

Why R after all?



R can also be used for writing papers and reports >>

What you will learn

- How to import and prepare data
- Summary statistics
- Plotting
- How to fit and explore (generalized) linear models
- Inferential statistics

What you will *NOT* learn

- How to make your code more efficient.
- How to write your own packages.
- You will also not learn *everything*...

Resources

- ***Free online books and courses***
 - **R for Data Science** | r4ds.had.co.nz/
 - **Learning Statistics with R** | learningstatisticswithr.com
 - **R for Psychological Science** | psyr.org
 - **Statistical Thinking for the 21st Century** | statsthinking21.org
- ***Cheat sheets*** | rstudio.com/resources/cheatsheets
- ***Stay up-to-date***
 - **R-bloggers** | r-bloggers.com
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- [Getting-help Guide >>](#)
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