The 10 Commandments

1. Plot your data. Use small multiples.
2. Use plain text.
3. Use a README to carefully explain the structure of the files.
4. Preserve the unchanged, raw data in the original format.
5. Document your data sources carefully.
6. Use comments liberally to explain changes you make to the raw data—what and why.
7. Automate.
8. Use open source software.
9. Keep a version control history.
10. Use GitHub! Sharability. Browsability.

A Good Workflow

A good workflow is…

- **principled** if you made correct decisions
- **implemented** if you did what you decided to do
- **documented** if you can check that you did what you decided to do

Sources of Errors in Implementation

1. errors in a script
   A. software bugs
   B. user errors
2. mismanage files
   C. mismanage versions
   D. mismanage dependencies

CTFI

Carlisle's Fundamental Theorem of Implementation (CFTI): The same strategies that allow others to easily check your work (1) allow you to easily check your work and (2) ensure that you implement your decisions correctly in the first place.

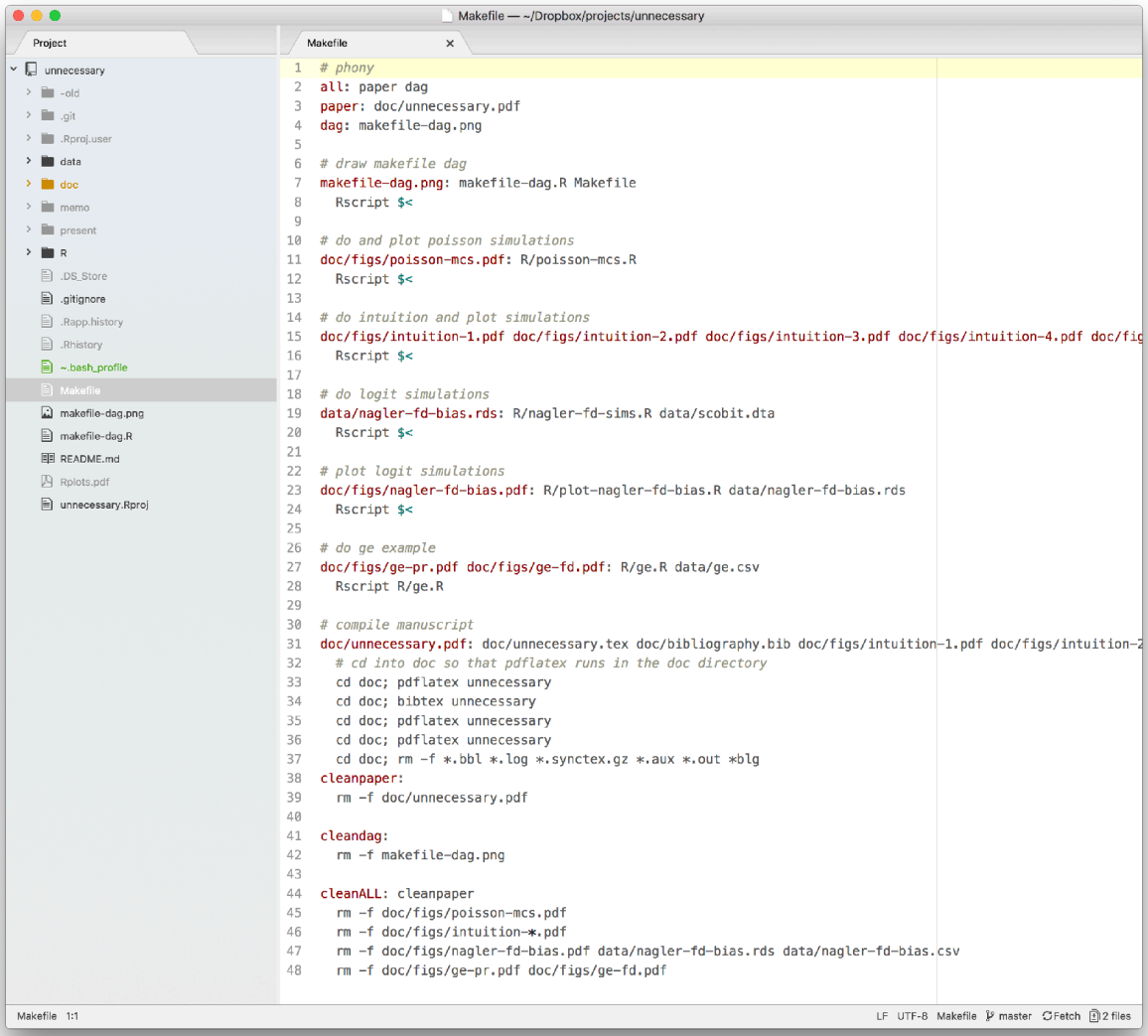
Tools

The Order You Should Learn Tools (IMO)

1. R + RStudio or Stata
2. LaTeX
3. Makefile
4. Git + GitHub

Resources

- Broman and Woo. 2018. "Data Organization in Spreadsheets." https://github.com/kbroman/Paper_DataOrg.
- Healy. 2018. The Plain Person's Guide to Plain Text Social Science. https://kieranhealy.org/publications/plain-person-text/
- Bryan. 2018. "Excuse Me, Do You Have a Moment to Talk about Version Control?" https://peerj.com/preprints/3159/
- Wilson et al. 2017. "Good Enough Practices in Scientific Computing." https://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1005510
- Others at https://pos5737.github.io/resources.html.


Makefile — ~/Dropbox/projects/unnecessary
Project
unnecessary
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.git
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data
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memo
present
R
.DS_Store
.gitignore
.Rapp.history
.Rhistory
~.bash_profile
Makefile
makefile-dag.png
makefile-dag.R
README.md
Rplots.pdf
unnecessary.Rproj
Makefile
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do and plot poisson simulations
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cleanpaper:
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cleandag:
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cleanALL: cleanpaper
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Makefile 1:1
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