How journals can improve code and data sharing in Neuroscience

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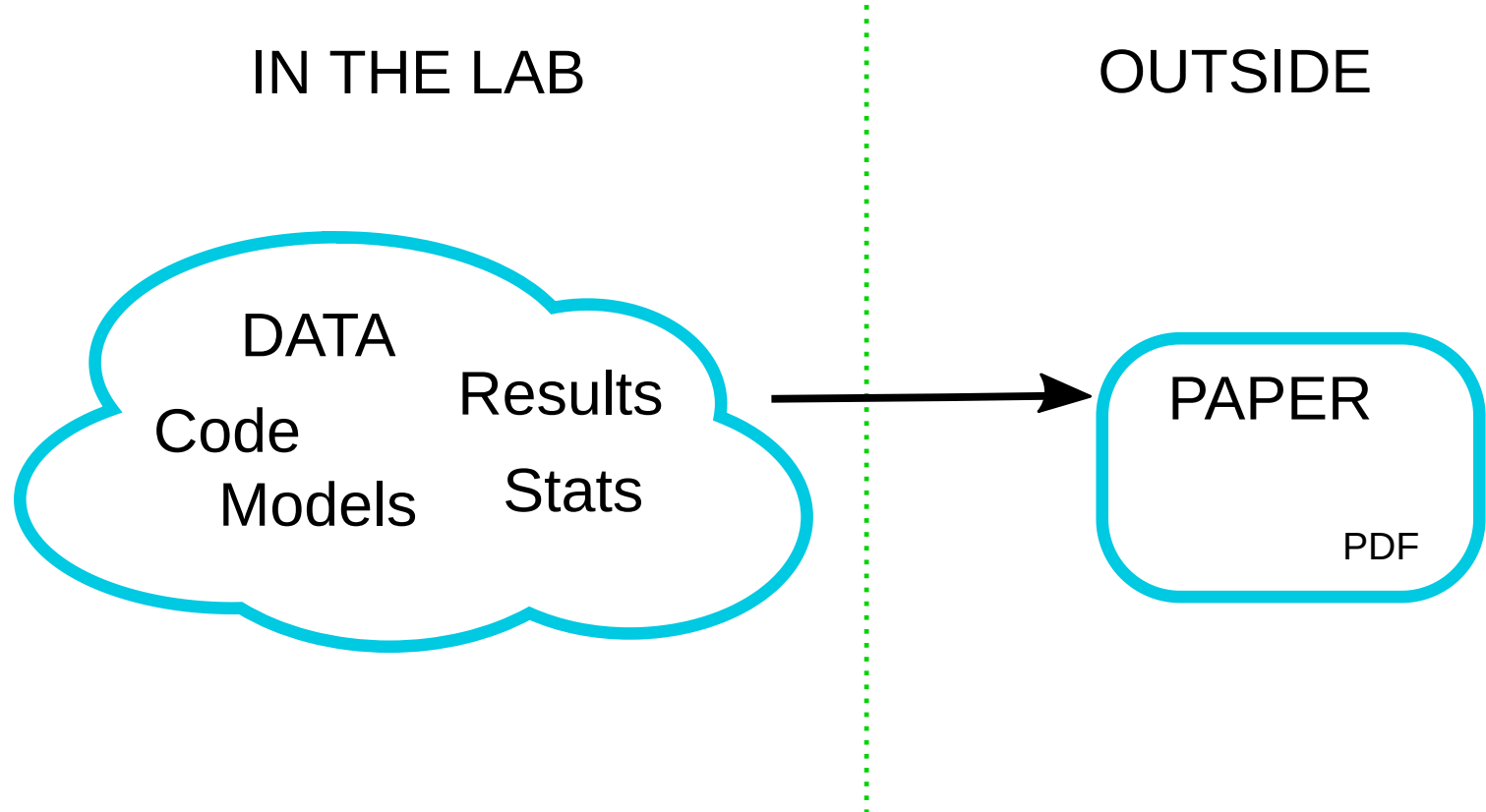Slides: http://bit.ly/eglen-neuromatch (CC-BY license)

Declarations

1. Member of *Bullied into Bad Science* campaign
2. Affiliate editor of *bioRxiv*
3. Senior editor of *Scientific Data*

Acknowledgements

Problems

Science as inverse problem

IN THE LAB

OUTSIDE

DATA
Code
Models
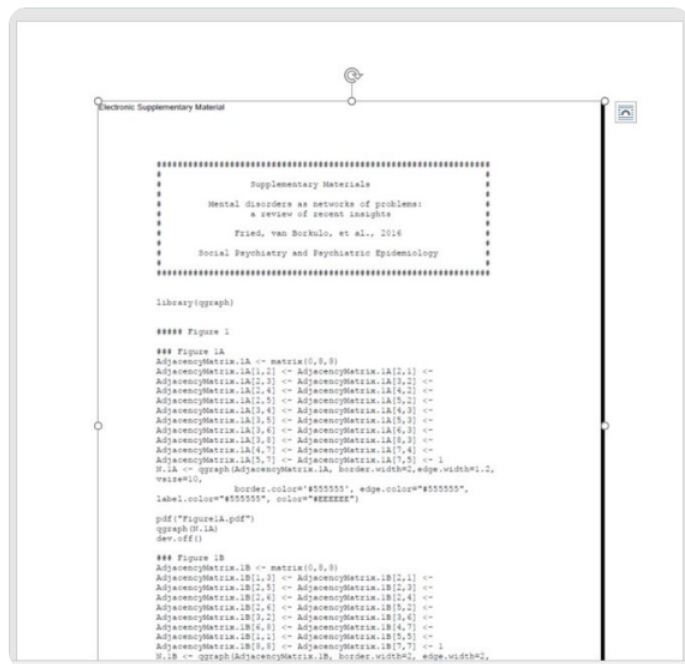Results
Stats

PAPER

PDF

How do journals host code?

Eiko Fried
@EikoFried

Journal didn't know what to do with our #rstats supplementary .. so they took screenshots and pasted into word o.O

link.springer.com/article/10.100...

11:52 PM · Dec 7, 2016 · Twitter Web Client

eLife: clone github repos (good), but also 'curate' to archive, changing filenames (bad).

https://twitter.com/eikofried/status/806647708853346306

Data accessibility statements

Many journals still allow the famous sentence:

> Code/data available upon REASONABLE request

Journals need to tighten up on this.

Peer review

Peer reviewers don't have time to look at code. (Or at least I don't).

I only ever received one review to date where a referee checked (and edited) my code.

We have "data papers"; what about "code papers"?

Few journals that want to take your purely code papers. Not seen as research.

Good neuro data repos still in infancy (perhaps with exception of neuroimaging) to support journal policy

Some journals sharing "workflows" (Gigascience, Scientific Data).

Opportunities

Sharing code now seen as important

- Saga of Imperial College (UK) COVID model has shown that finally code seen as important. People want to see the code of the model. (That has been used since early 2000s).

https://www.nature.com/articles/d41586-020-01003-6

Journal initiatives

- Growing appetite among journals with checks of code.

- PLOS Comp Biol have launched a code review May 2020.

- Spectrum of reproducibility: "reproducible forever, by everyone" (CodeOcean), to "it worked once for someone else outside the group" (CODECHECK).

- example certificate: https://zenodo.org/record/3674056

Other issues that impact on journals.

- Funders are asking for other outputs, beyond traditional paper publication.

- Likewise (in UK) research outputs can include research artifacts. And what the funders ask for, journals I hope will help provide.

- Plan S: will helping curate your code be something that journals might use to justify APC? (Just like with a data paper, where you can see effort beyond typesetting.)

- Rise in the "research software engineers" that are helping scientists write better code that we are happier to share.

- small research pots available for open science, hopefully they will grow.