

Open Research Blitz

Georgia-Ann Carter
pplsopenresearch@ed.ac.uk

What is Open Research?

“... research conducted in the spirit of free and open-source software” (Wikipedia, 2022)

Practices:

- Pre-registration
- Registered Reports
- Preprints
- Data sharing
- Publishing open access



Adapted from: <https://www.meetup.com/Berlin-Open-Science-Meetup/>

Robin Champieux and Danielle Robinson



Figure 1 from Kathawalla et al. (2021)

Why should I do it?

“Transparency, openness, and reproducibility are readily recognised as vital features of science”

(Nosek et al., 2015)



Benefits

- Promote research transparency
- Sense of research community
- Greater chance for citations
- Greater research visibility

Barriers

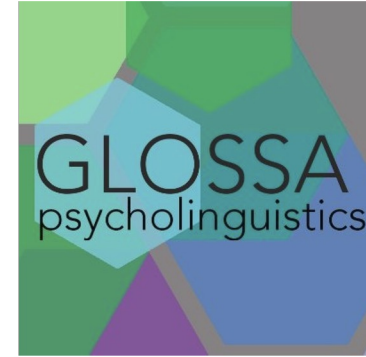
- Worries about others' taking ideas
- Difficult to share data and materials
- Where to even begin?!

Publishing Open Access

- Authors publishing in open access journals retain their rights to the manuscript and materials
- OA journals also have a peer review process











* Preprint not offered for PLOS Medicine



Many traditional journals allow you to publish OA for a fee and **some** institutions pay for this

Licensing

- Usually published under Creative Commons (CC) licenses
- Licenses tell others what they can (and cannot!) do with your work
- Licensing content and having access to software needed to use that content → go hand in hand

License	Type of use	Symbols
Attribution (BY)	 You must credit the creator, the title and the license the work is under.	
Non Commercial (NC)	 The work cannot be used for commercial purposes.	
No Derivatives (ND)	 The work can only be used exactly how it is. The work cannot be adapted or modified in any way.	
Share Alike (SA)	 Any new material produced using the work must be made available under the same license as the original work.	

Licensing



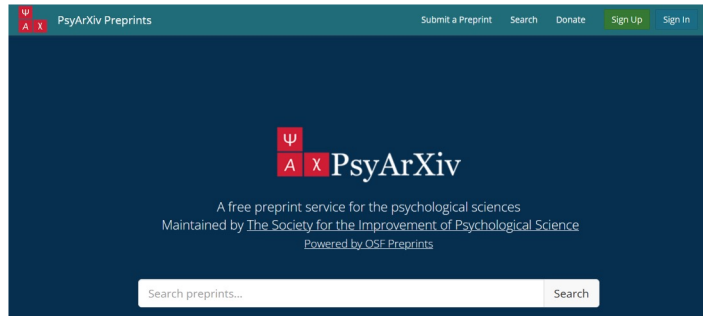
Open data

Pre-prints and peer review

Pre-printing is the act of archiving manuscripts prior to journal publication and formal peer review

Repositories:

- arXiv
- PsyArXiv
- OSF preprints



<https://psyarxiv.com/4tj3p/>

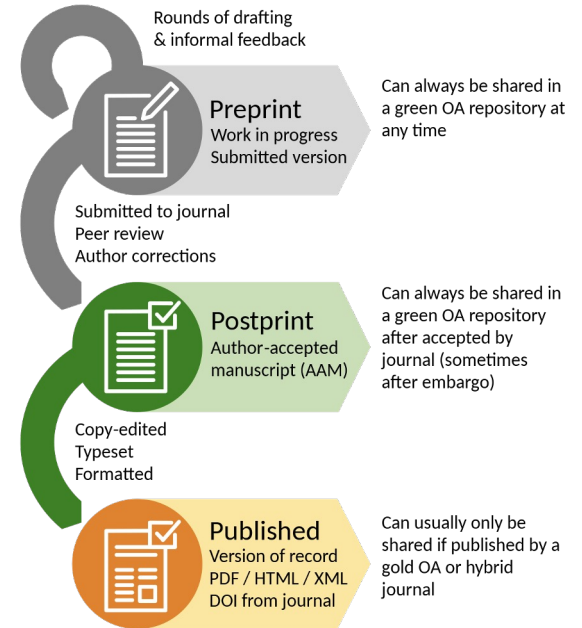
Pre-prints and peer review

Why would I pre-print?:

- Research is “out there” faster
- Accessible and available for everyone
- Can link citations from pre-prints and journal publications in Google Scholar!

Post-printing

- A lot of journals allow you to archive the article open access after peer review

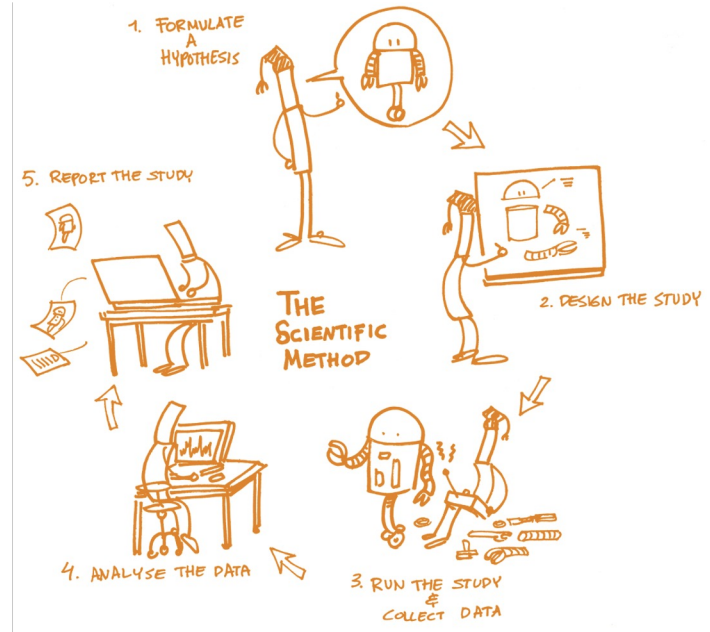
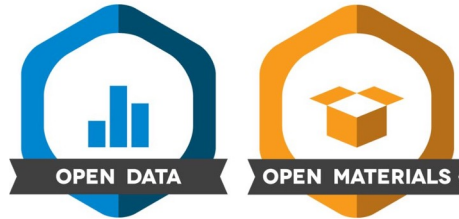


Data Sharing

Data sharing is the act of making data/code accessible to others

Benefits:

- Citation advantage
- Reproducibility
- Transparency



Data Sharing

How?: submit data and materials to independent repository e.g., OSF, Github

- Important to include metadata → comments on making data useable
 - Explaining abbreviations
 - Highlighting where to change folder names

Name	Size	Version	Downloads	Modified
Definiteness & Prediction				
OSF Storage (Germany - Frankfurt)				
Analysis Scripts				
article_data.rds	123.1 kB	1	2	2021-07-30 07:39 AM
articulatedata_brms.R	21.8 kB	2	2	2021-04-13 04:43 PM
articulatedata_brms_marginal_comparisonplot.R	7.7 kB	2	2	2021-04-13 04:43 PM
bayes_sensitivity.R	9.6 kB	1	1	2021-08-13 04:35 PM
lme_article_analysis.R	6.3 kB	3	2	2021-04-13 04:43 PM
lme_noun_analysis.R	4.5 kB	3	2	2021-04-13 04:43 PM
lme_sf_analysis.R	8.0 kB	3	2	2021-04-13 04:43 PM
newdat_articles.txt	365.6 kB	1	2	2021-04-13 04:48 PM
newdat_nouns.txt	363.4 kB	1	2	2021-04-13 04:48 PM
newdat_sf.txt	269.6 kB	1	2	2021-04-13 04:48 PM
noun_data.rds	123.8 kB	1	2	2021-07-30 07:39 AM
noundata_brms.R	10.8 kB	3	2	2021-04-13 04:43 PM
sf_data.rds	122.2 kB	1	2	2021-07-30 07:39 AM
stats_preprocessing.R	4.7 kB	3	2	2021-04-13 04:43 PM
total_data.RData	368.8 kB	1	2	2021-07-30 07:39 AM
Data				

TIP!: preparing research materials for sharing during the active research phase is easier than afterwards (McKiernan et al., 2016)

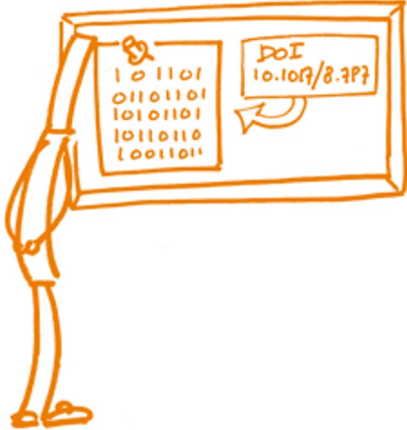
Open Data Principles

FAIR DATA PRINCIPLES

AH!



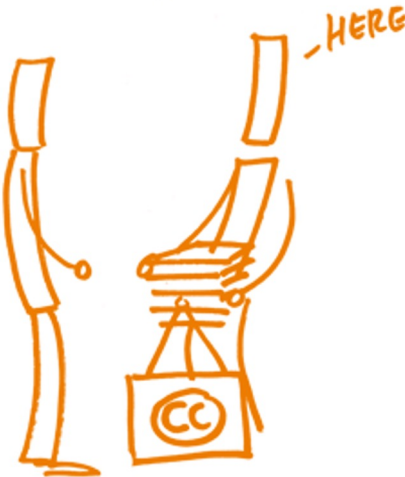
FINDABLE



ACCESSIBLE



INTEROPERABLE



REUSABLE

Pre-registration



Pre-registration is the act of specifying your research plan before conducting the study

General process:

- State clear research hypothesis
- Outline analysis plan prior to data collection
- Link hypothesis to analysis plan

A screenshot of the OSF Registries website showing a public registration entry. The header includes 'OSF REGISTRIES' and navigation links like 'Add New', 'My Registrations', 'Help', and 'Donate'. The main title is 'DEFINITENESS PREDICTION'. The entry is a 'Public registration' with 'Updates' available. The left sidebar contains navigation options: Overview (selected), Files, Wiki, Components (0), Links (0), Analytics, and Comments (0). The main content area displays the 'Preregistration Template from AsPredicted.org'. It includes a question 'Have any data been collected for this study already?' with the answer 'Yes, at least some data have been collected for this study already'. Below this is the 'What's the main question being asked or hypothesis being tested in this study?' section, followed by a detailed description of the study's purpose and methods. The 'Describe the key dependent variable(s) specifying how they will be measured.' section describes the EEG recording setup and data analysis. The final question 'How many and which conditions will participants be assigned to?' is partially visible. The right sidebar contains metadata: 'Contributors' (Georgia-Ann Carter and Mante S. Nieuwland), 'Description' (No description), 'Registration type' (Preregistration Template from AsPredicted.org), 'Date registered' (February 22, 2019), 'Date created' (February 22, 2019), 'Associated project' (osf.io/ud2b7), 'Internet Archive link' (https://archive.org/details/osf-registrations-b8fuz-v1), 'Category' (Project), 'Registration DOI' (10.17605/OSF.IO/B8FUZ), and 'Publication DOI' (No publication DOI).



Pre-registration

Does that mean I can't change my plan?

Nope! → exploratory analyses are allowed, they just have to be **stated**

- Can submit edit to embargoed pre-registration plan
- This creates a list of changes and reasons why

Transparency is key



Registered reports

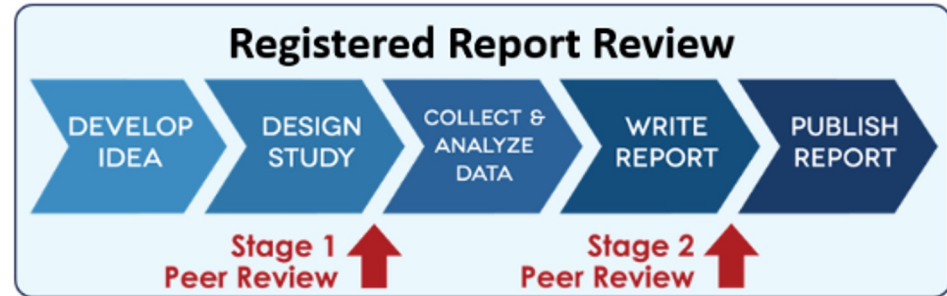
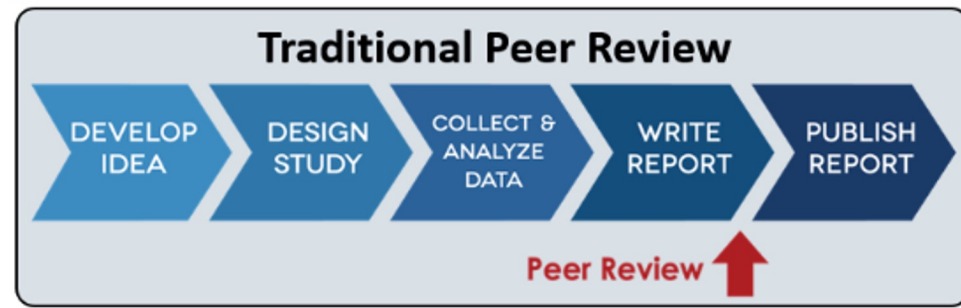
A peer-reviewed preregistration

Pros

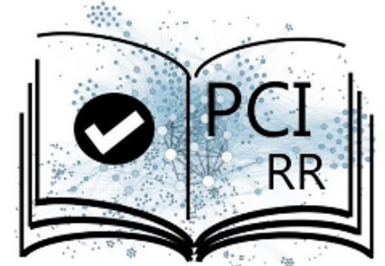
- Get reviews (and in-principle acceptance at the design stage)
- If the experiment follows the initial protocol, the report should be published
- Increases credibility

Cons

- Significant workload shift to the start of the project
- Challenging when proposing unexplored analysis pipelines
- Not all journals accept registered reports



PEER COMMUNITY
IN REGISTERED REPORTS



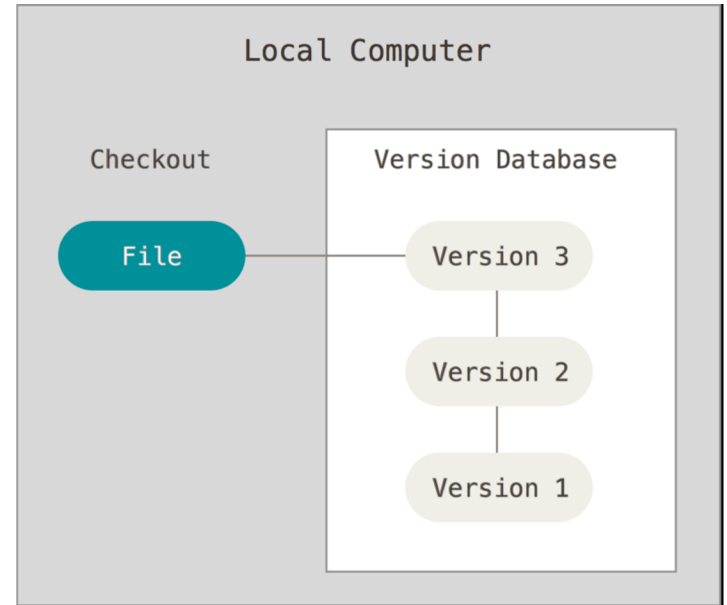
Version Control



Version control creates a ‘bookmark’ of current data processes (e.g., analysis code, paper draft)

- Documentation throughout research cycle
- Allows others to follow your research process → replication
- Creates transparency

Make a mistake? Go back in time!



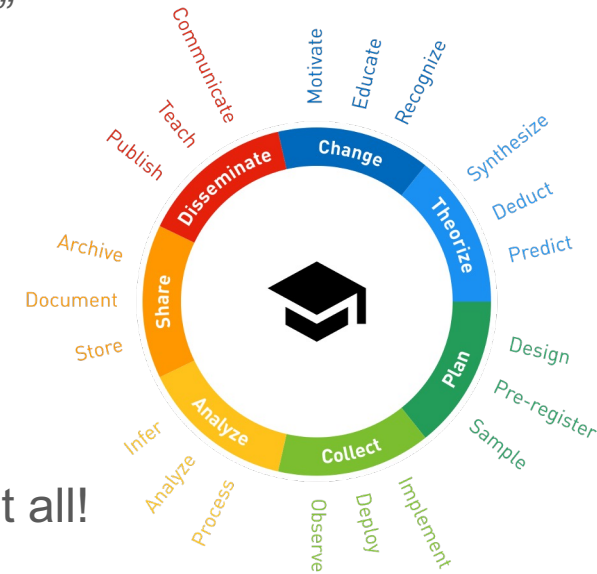
Where to go from here?

“... openness is not ‘all-or-nothing’”

McKiernan et al. (2016)

- Better to think of as a ***continuum of practices***
- Getting started with one practice is better than none at all!

<https://pplsopenresearch.github.io/>



Taken from Open Science Knowledge Base (2022)

Future Workshops

Pre-registration workshop – **26th October**



- Hands-on practical help with pre-registering experimental analyses

Github workshop – **9th November**



- How to start version control and making your data accessible

CDCS Github workshop – **29th November**





Thank you!

We would really appreciate your
feedback!

