



An Open Science Primer for Social Scientists

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16 November 2016

Talk Outline

1. What is Open Science? (definition)
2. Why Open Science? (problem)
3. How to do Open Science? (solutions)
 - Open workflow (reproducible research)
 - Open publishing (open access)
4. Some additional tools

What is Open Science?

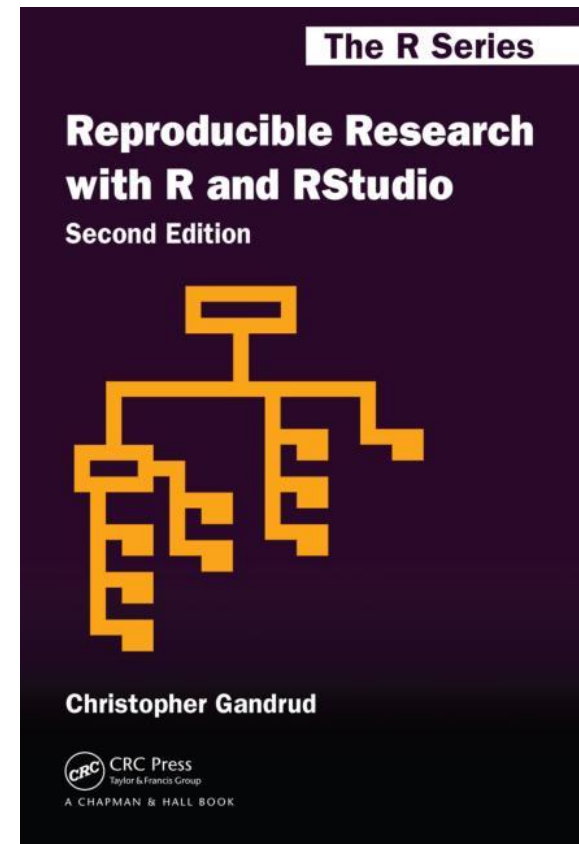
- **Open Methodology/Workflow**
- Open Source
- Open Data
- **Open Access**
- Open Peer Review
- Open Educational Resources
- ...

Why Open Science?

- Transparency, replicability, reproducibility (Brüderl, 2013)
- Greater disciplinary influence and public value through early distribution of working papers (Fox, 2016)
- Accelerating normalization of OA across disciplines (Fister, 2016)
- Benefits researchers' careers: increases in citations, media attention, potential collaborators, job opportunities and funding opportunities (McKiernan et al., 2016)

How to Do Open Science? Open Workflow

- Gandrud, C. (2015). *Reproducible research with R and RStudio* (2nd ed.). Boca Raton, FL: CRC Press.
- Healy, K. (2016, February). *The plain person's guide to plain text social science*. Durham, NC.



Open Workflow

- Tools for fully reproducible workflow à la Gandrud:
 - [R](#) / [Rstudio](#)
 - [R Markdown](#)
 - [knitr](#) / [pandoc](#)
 - [Dropbox](#) or [Git](#) / [GitHub](#) (backup, collaboration, version control)
 - Systematic file management
 - Reproducible data gathering (via makefiles)

Open Workflow

■ Zotero Groups

■ Public groups in open-source ref manager to collaborate, share bibliographies, files, etc.

■ Also available for non-open ref managers (Endnote, Mendeley, etc.)

■ End-to-end support: [Open Science Framework](#)

Open Science Framework

- Integrates with third-party tools (Dropbox, GitHub, Figshare, Dataverse, etc.)
- Public projects
- [OSF for Meetings](#)
 - central location for conference submissions
 - slide and poster sharing before/after a conference
- Open preprint repository network

Registered Reports

- Emphasizes importance of research question and quality of methodology
 - [Example](#)
- Check out [Election Research Preacceptance Competition](#) (Skip Lupia and Brendan Nyhan):
 - Preregister study design, before 2016 ANES data release: 15 April 2017
- Check out COS [Preregistration Challenge](#):
 - [Introduction video](#)

Alternatives to OSF:

- [EGAP Registry](#) (Evidence in Governance and Politics) of APSA Experimental Research Section
 - Temporary, will be integrated into OSF
- [RIDIE](#) (Registry for International Development Impact Evaluations) by International Initiative for Impact Evaluation
 - Only for studies assessing impact of development programs

How to Do Open Science? Open Access

- green open access = self-archiving by author
- gold open access = open access journal publication [more narrow definition: publication in OA journals financed through charges to authors]
- platinum open access = open access journal publication financed through means other than article processing charges (APC) to author (e.g., institutional funding)

Open Access Journals

- Problem of finding quality OA journals (Hrynaszkiewicz, 2016)

- But some recent movement:

- General social sciences: [Palgrave Communications](#) (APC, 2015-)

- Political Science: [Research & Politics](#) (APC, 2014-, free until 2017)

- Sociology: [Socius: Sociological Research for a Dynamic World](#) (APC, 2016-, free 2016) & [Sociological Science](#) (APC, 2014-)

- Communication: [International Journal of Communication](#) (non-APC, 2007-)

How do I find a suitable open access journal?

1. Browse [Directory of Open Access Journals](#)
 - Trusted listing, over 10,000 registered OA journals
2. Use [CoFactor Journal Selector Tool](#)
 - Allows filtering by several options, incl. whether journal is fully open, has open publishing option (hybrid journal)
 - Note: not great coverage of social science journals!
3. Talk to mentors, librarians, and colleagues who focus on scholarly communication issues in your field
4. Check that your journal choice is compliant with your funder's policies
 - [SHERPA/JULIET](#) database

Source: McKiernan, 2015

Further Practical Qs



- How can I fund my open access publication?
 - Check out [Erin McKiernan's one-page guide to OA funding](#) (McKiernan, 2016)
- How can I convince my coauthor or supervisor to “go OA”?
 - Point out societal, disciplinary, and personal benefits of OA (see above)

Open Eprints

- eprint = digital version of research doc accessible online
- preprint = eprint before peer review
- postprint = eprint after peer review

Options for Green OA / Self-Archiving

SHERPA/RoMEO

-  Database of information about journals' self-archiving policies, hosted at University of Nottingham
-  Color code: white (non), yellow (pre), blue (post), green (pre & post)

OpenDOAR

-  Authoritative directory of academic open access repositories worldwide

General / Multidisciplinary Preprint Servers

■ PeerJ Preprints

- free PeerJ preprint server (life and computer science mega journal)

■ Zenodo

- free CERN/OpenAIRE (network of OA repos) preprint server
- Integrates with GitHub, provides DOIs

■ OSF Preprints

- integrated with SHARE

■ SHARE

- free, open dataset of the entire research life cycle w/ 120+ sources (preprint servers, institutional repos, public databases like PubMed, DataCite)

Field-specific Social Science Preprint Servers

■ [SocArXiv](#) ([alternative link](#))

- est. July 2016, run by sociologists, members of the academic library community, COS/OSF coop
- Under development, simple upload through email deposit

■ [PsyArXiv](#)

■ Social Science Research Network (SSRN, owned by Elsevier since 2016)

Field-specific Preprint Servers for Other Disciplines

- [arXiv](#)

- mostly preprints from the sciences

- [bioRxiv](#)

- ChemRxiv: under construction

- [Humanities Commons](#)


- ...

Local Institutional & Private Repositories

MADOC

 online repository for research output by University of Mannheim researchers

 serves as university bibliography

 Department server space (university servers or others)

 Private server space (personal website)

(Not an) Alternative: Social Research Websites

- Mendeley (for-profit, owned by Elsevier since 2013)
- Academia.edu (for-profit, venture-capital funded private company)
- ResearchGate (for-profit, venture-capital funded private company; iffy business practices)

Open Data

- Dataverses (esp. Harvard Dataverse)

- repositories for data, code, documentation

- GESIS Data Archive

- supervised GESIS data repository service

- datorium

- unsupervised GESIS data repository service

- MADATA

- repository for all University of Mannheim researchers to make research data accessible online

Some Additional Tools

■ BASE OA search engine

- Bielefeld Academic Search Engine

- searches academic web resources

- full text OA access for about 60% of indexed documents

■ oaDOI

- use to search for green OA versions of paywalled articles via their DOI

In Conclusion... What's Next?

- New social science OA journals (within OSF)?
- Open Science as personal challenge (or regulative ideal)
- Especially for young scholars, need to keep abreast of developments and participate in ongoing transformation of scholarly communication

Thanks!

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