



Open Science

Donders Graduate School Day

Johannes Algermissen (johannes.algermissen@donders.ru.nl)

2022-06-29

Slides are available under:



OSC Nijmegen

📍 Nijmegen, the Netherlands

Twitter

GitHub

RESOURCES

OS survey results (2019)

Resources

Materials from past events

- Slides to workshop [Open Science](#) at the Donders Graduate School Day by Johannes Algermissen, 29 June, 2022.
- Slides to webinar [Does science correct itself?](#) by Willem Halfman, 17 June, 2021
- Slides to webinar [Large-scale collaborations in science](#), 11 June, 2021:
 - [Slides Christina Bergmann \(ManyBabies\)](#).
 - [Slides Martine Hoogman \(ENIGMA\)](#).
 - [Slides Angelique Janssens \(SHIP\)](#).
- Slides to webinar [From Chaos to Order Efficient file management](#) by Johannes Algermissen, Hannah Peetz, and Eva Poort, 26 May, 2021
- Slides to webinar [Challenges and new trends in pre-registration](#) by Johannes Algermissen, 09 December, 2020
- Slides to webinar [Open Access step-by-step](#) by Jeroen Bos, 10 November, 2020
- Slides to webinar [Plan_S](#) by Dirk van Gorp, 12 November, 2020
- Slides to webinar [Make your code more readable through best coding practices](#) by Arushi Garg, 28 October, 2020

RESOURCES
RESEARCH DATA MANAGEMENT
WHY IS RESEARCH DATA MANAGEMENT IMPORTANT?
HOW TO START WITH A DATA MANAGEMENT PLAN?
WHERE CAN I DEPOSIT MY MATERIALS?
WHAT SUPPORT DOES RADBOUD UNIVERSITY OFFER ME REGARDING RESEARCH DATA MANAGEMENT?
RESOURCES
OPEN ACCESS
WHAT IS OPEN ACCESS?
WHAT ARE MY OPTIONS TO PUBLISH OPEN ACCESS?
DOES IT ALWAYS COST MONEY TO PUBLISH OPEN ACCESS?
DO I HAVE TO PUBLISH OPEN ACCESS?
WHAT SUPPORT DOES RADBOUD UNIVERSITY OFFER ME REGARDING OPEN ACCESS PUBLISHING?
THEORY BUILDING
HOW DOES THEORY BUILDING RELATE TO OPEN SCIENCE?

[citation needed]

and after the citation, some ice cream would be nice

Search ...

SUBSCRIBE TO THIS BLOG VIA EMAIL

Enter your email address to subscribe to this blog and receive notifications of new posts by email.

Email Address

SUBSCRIBE

I hate open science

Now that I've got your attention: what I hate—and maybe *dislike* is a better term than *hate*—isn't the open science *community*, or open science *initiatives*, or open science *practices*, or open *scientists*... it's the *term*. I fundamentally dislike the term *open science*. For the last few years, I've deliberately tried to avoid using it. I don't call myself an open scientist, I don't advocate publicly for open science (*per se*), and when people use the term around me, I often make a point of asking them to clarify what they mean.

This isn't just a personal idiosyncracy of mine in a chalk-on-chalkboard sense; I think at this point in time there are good reasons to think the continued use of the term is counterproductive, and we should try to avoid it in most contexts. Let me explain.

<https://www.talyarkoni.org/blog/2019/07/13/i-hate-open-science/>

Chapters

1. Pre-registration
2. Reproducibility (and code sharing)
3. Data sharing
4. Research data management
5. Open access
6. Diversity and Inclusivity

Introduction round

- Name
- Position (PhD student/ master student)
- Affiliation (Center/ Department)
- Thesis topic
- What aspect of Open Science you are most curious about
 - What aspect of Open Science you have never heard about

1. Pre-registration

Extra resources

OSC Nijmegen

📍 Nijmegen, the Netherlands

🐦 Twitter

GitHub

RESOURCES

OS survey results (2019)

Resources

Materials from past events

- Slides to workshop [Open Science](#) at the Donders Graduate School Day by Johannes Algermissen, 29 June, 2022.
- Slides to webinar [Does science correct itself?](#) by Willem Halfman, 17 June, 2021
- Slides to webinar *Large-scale collaborations in science*, 11 June, 2021:
 - [Slides Christina Bergmann \(ManyBabies\)](#).
 - [Slides Martine Hoogman \(ENIGMA\)](#).
 - [Slides Angelique Janssens \(SHiP\)](#).
- Slides to webinar [From Chaos to Order: Efficient file management](#) by Johannes Algermissen, Hannah Peetz, and Eva Poort, 26 May, 2021
- Slides to webinar [Challenges and new trends in pre-registration](#) by Johannes Algermissen, 09 December, 2020
- Slides to webinar [Open Access step-by-step](#) by Jeroen Bos, 10 November, 2020
- Slides to webinar [Plan S](#) by Dirk van Gorp, 12 November, 2020
- Slides to webinar [Make your code more readable through best coding practices](#) by Arushi Garg, 28 October, 2020

RESOURCES

RESEARCH DATA MANAGEMENT

WHY IS RESEARCH DATA MANAGEMENT IMPORTANT?

HOW TO START WITH A DATA MANAGEMENT PLAN?

WHERE CAN I DEPOSIT MY MATERIALS?

WHAT SUPPORT DOES RADBOUD UNIVERSITY OFFER ME REGARDING RESEARCH DATA MANAGEMENT?

RESOURCES

OPEN ACCESS

WHAT IS OPEN ACCESS?

WHAT ARE MY OPTIONS TO PUBLISH OPEN ACCESS?

DOES IT ALWAYS COST MONEY TO PUBLISH OPEN ACCESS?

DO I HAVE TO PUBLISH OPEN ACCESS?

WHAT SUPPORT DOES RADBOUD UNIVERSITY OFFER ME REGARDING OPEN ACCESS PUBLISHING?

THEORY BUILDING

HOW DOES THEORY BUILDING RELATE TO OPEN SCIENCE?

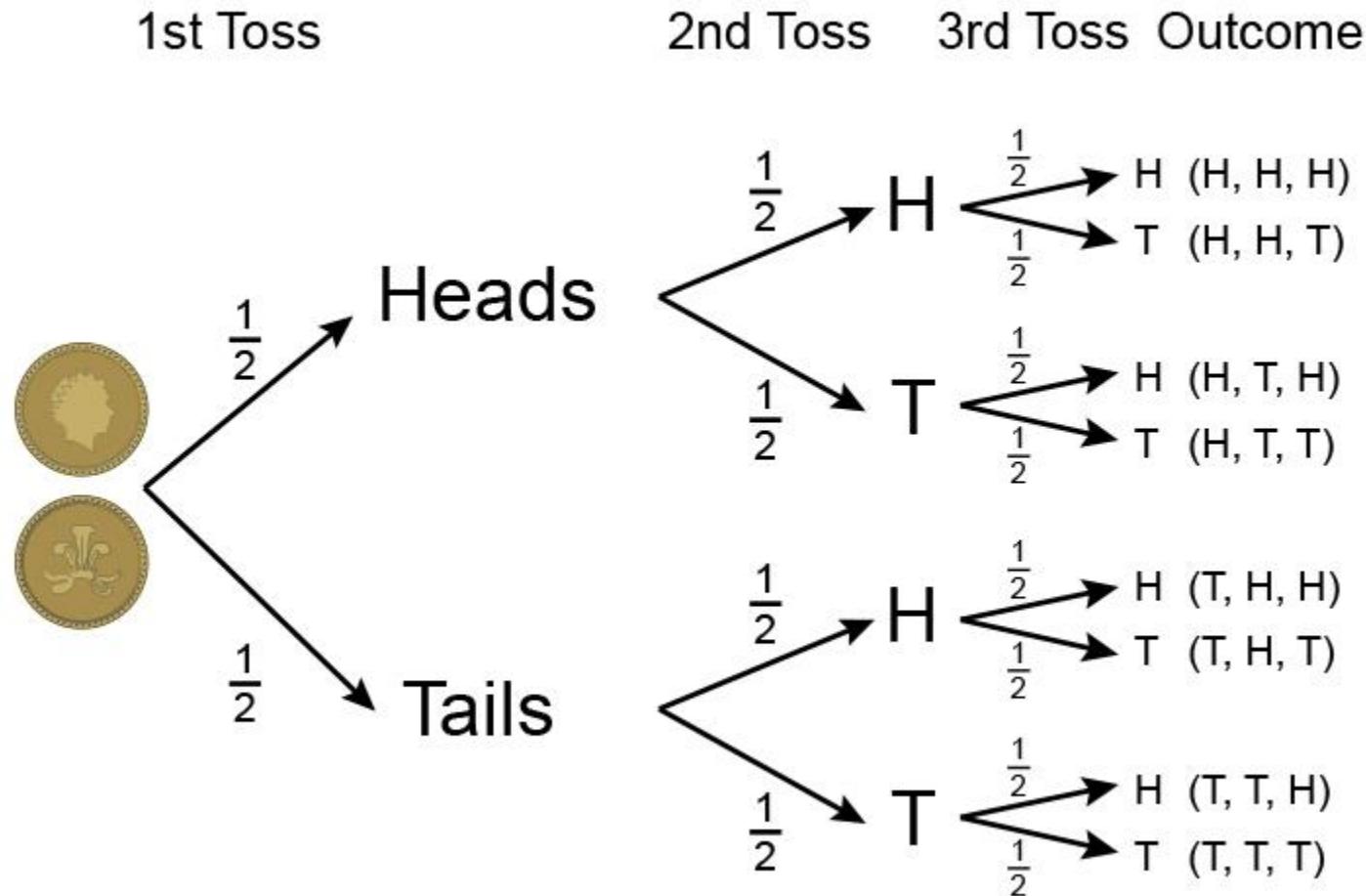
YOU CAN'T PLAY 20 QUESTIONS WITH NATURE
AND WIN:
PROJECTIVE COMMENTS ON THE PAPERS OF THIS
SYMPOSIUM

Allen Newell
May, 1973

This paper is to appear in W. G. Chase (ed.) Visual Information Processing, New York: Academic Press. (in press) This research was supported by Research Grant MH-07732 from the National Institutes of Health.

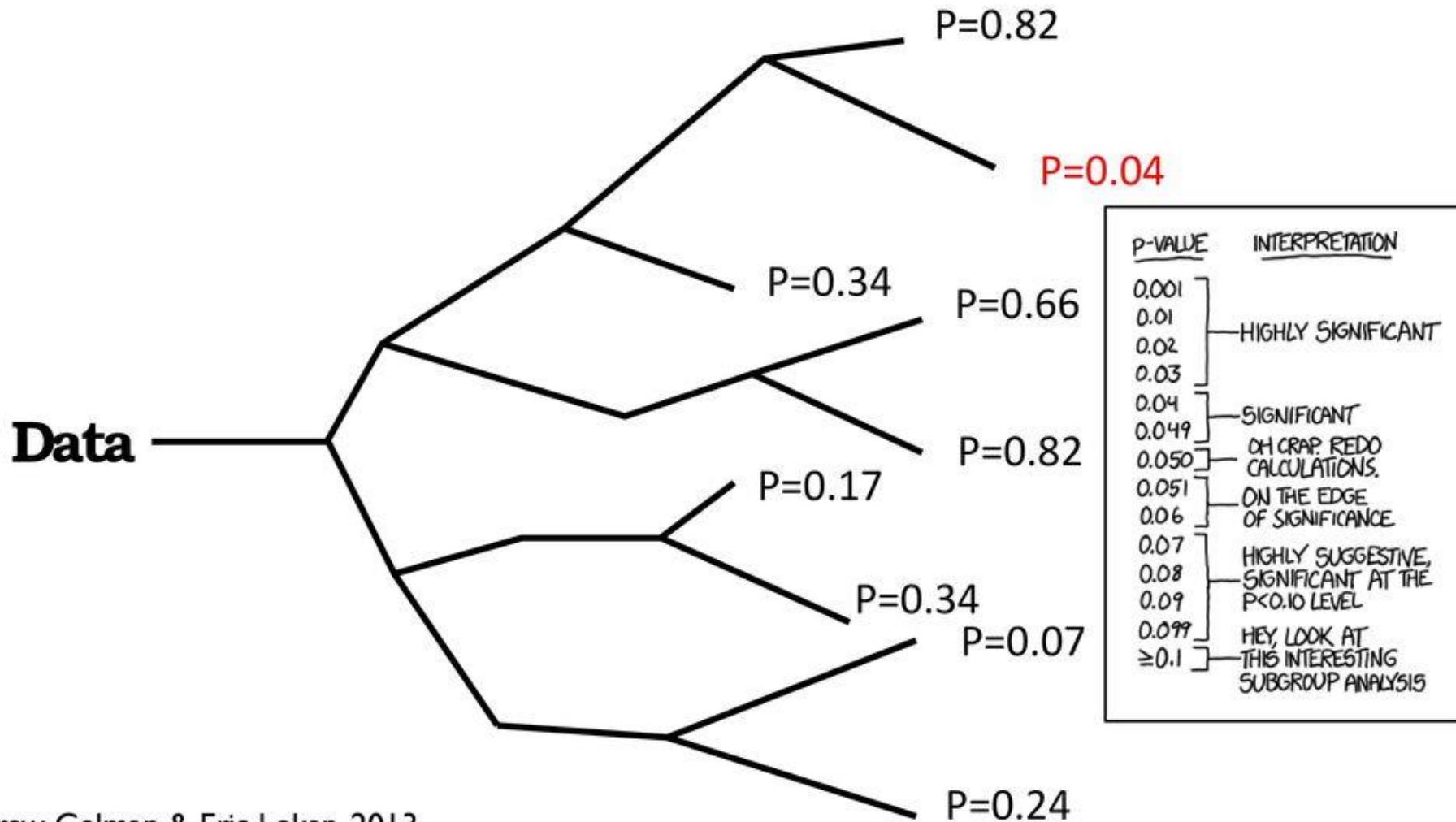
Carnegie-Mellon University
Pittsburgh, Pennsylvania

Coin-flipping competition

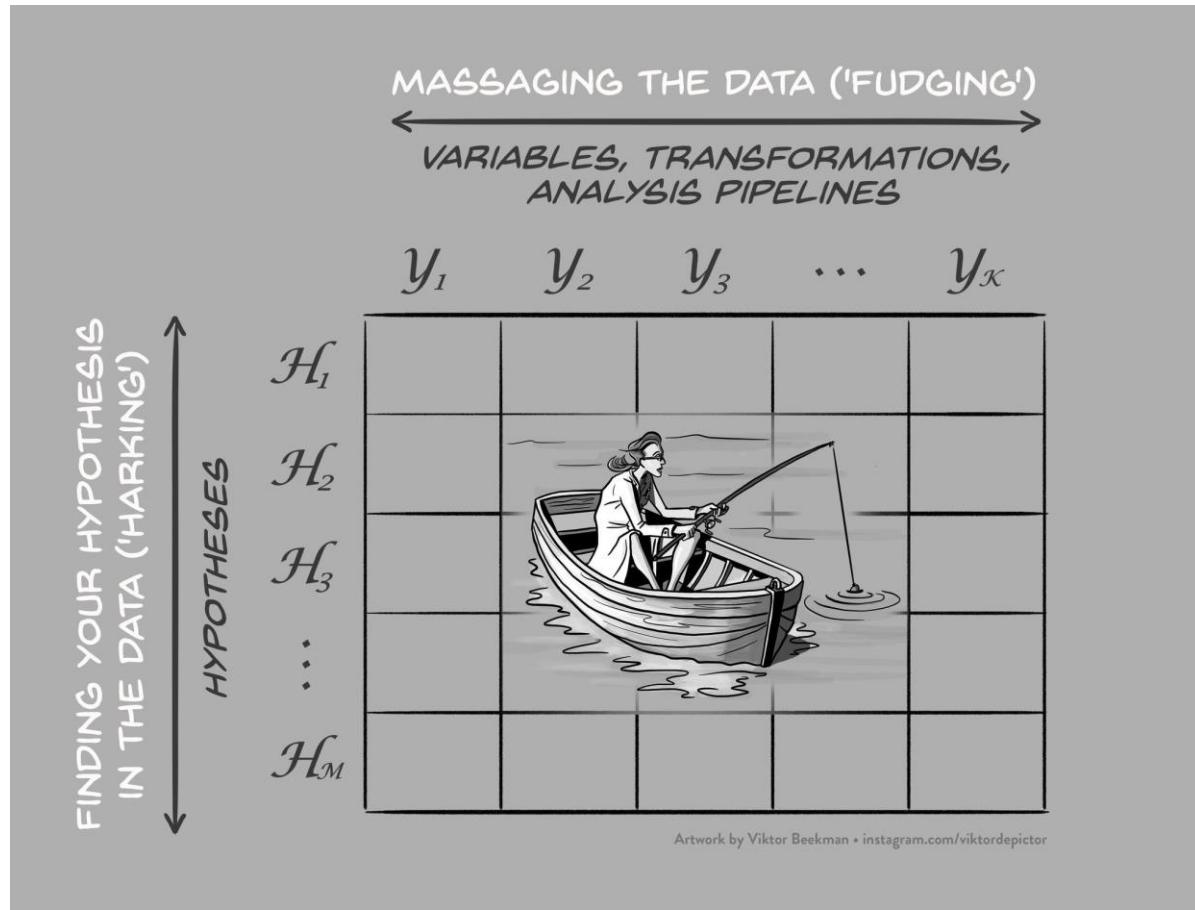


→ Someone must win the competition and guess n times correctly!

The garden of forking p-hacks



Harking and fudging



<https://www.bayesianspectacles.org/the-case-for-radical-transparency-in-statistical-reporting/>;
<https://www.bayesianspectacles.org/origin-of-the-texas-sharpshooter/>

Definition of pre-registration



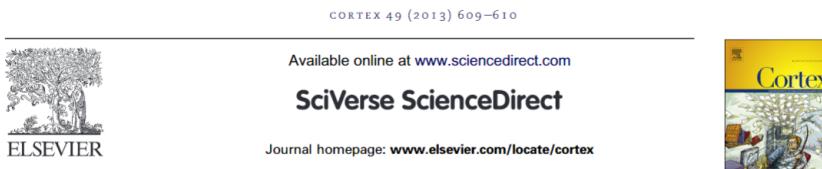
- To be on the same page
- **Public, time-stamped registration in institutional registration system**
- Registration **predates** data collection
- Contents:
 1. Procedures: sample size, trial number, randomization procedure
 2. Exclusion: under what conditions will data be excluded
 3. Variable construction: independent and dependent variables
 4. Tests and models: hypotheses, effects, statistical model, covariates, correction for multiple comparisons
 5. Procedures in event of foreseeable problems (attrition, non-compliance, not enough subjects, ...)

What is pre-registration good for?

1. Clarify thoughts for yourself (and your supervision team)
 - Minimize mistakes
 - See also doing your own experimental task, data simulation, ...
2. Don't fool yourself...
 - ... and you are the easiest person to fool!
3. Allow others to assess the rigor of your hypothesis tests
 - Helps in publishing surprising findings...?!?
4. Reduce publication bias
 - Make your study detectable for others, even if it never gets published

Popular options

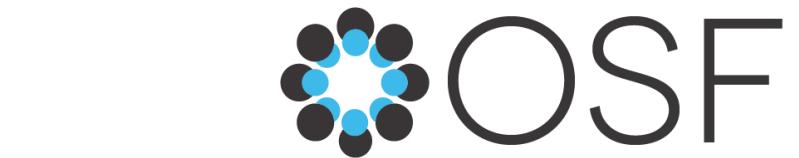
- Open Science Framework (OSF): <https://www.cos.io/initiatives/prereg>
- As-predicted: <https://aspredicted.org/>  AS PREDICTED
- Clinicaltrials.gov: <http://clinicaltrials.gov/>
- Declare Design: <https://declaredesign.org/>
-
- Registered reports



**Registered Reports: A new publishing initiative
at Cortex**

Christopher D. Chambers

Cardiff University Brain Research Imaging Centre (CUBRIC), School of Psychology, Cardiff University, United Kingdom

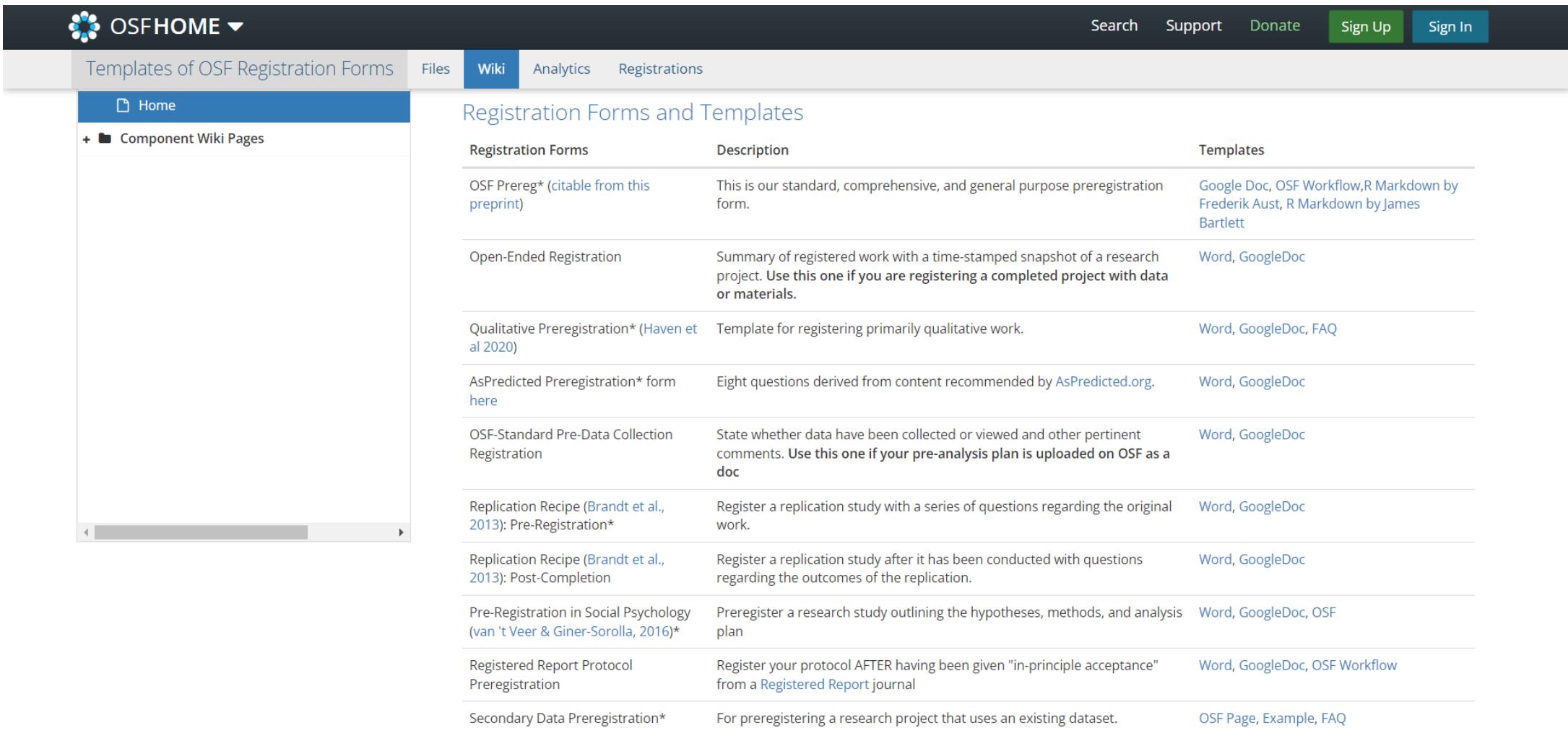


Currently, 272 journals use the Registered Reports publishing format either as a **regular submission option** or as part of a single **special issue**. Other journals offer **some features** of the format. This list will be updated regularly as new journals join the initiative.

For an article type to qualify as a registered report, the journal policy must include at least these features:

- Peer review occurs prior to observing the outcomes of the research.
- Manuscripts that survive pre-study peer review receive an in-principle acceptance that will not be revoked based on the outcomes, but only on failings of quality assurance, following through on the registered protocol, or unresolvable problems in reporting clarity or style.

Templates on OSF



The screenshot shows the OSF homepage with the navigation bar "OSF HOME ▾" and links for "Search", "Support", "Donate", "Sign Up", and "Sign In". Below the navigation is a menu bar with "Templates of OSF Registration Forms", "Files", "Wiki" (which is selected), "Analytics", and "Registrations". A sidebar on the left lists "Home" and "Component Wiki Pages". The main content area is titled "Registration Forms and Templates" and displays a table of registration forms:

Registration Forms	Description	Templates
OSF Prereg* (citable from this preprint)	This is our standard, comprehensive, and general purpose preregistration form.	Google Doc, OSF Workflow, R Markdown by Frederik Aust, R Markdown by James Bartlett
Open-Ended Registration	Summary of registered work with a time-stamped snapshot of a research project. Use this one if you are registering a completed project with data or materials.	Word, GoogleDoc
Qualitative Preregistration* (Haven et al 2020)	Template for registering primarily qualitative work.	Word, GoogleDoc, FAQ
AsPredicted Preregistration* form here	Eight questions derived from content recommended by AsPredicted.org.	Word, GoogleDoc
OSF-Standard Pre-Data Collection Registration	State whether data have been collected or viewed and other pertinent comments. Use this one if your pre-analysis plan is uploaded on OSF as a doc	Word, GoogleDoc
Replication Recipe (Brandt et al., 2013): Pre-Registration*	Register a replication study with a series of questions regarding the original work.	Word, GoogleDoc
Replication Recipe (Brandt et al., 2013): Post-Completion	Register a replication study after it has been conducted with questions regarding the outcomes of the replication.	Word, GoogleDoc
Pre-Registration in Social Psychology (van 't Veer & Giner-Sorolla, 2016)*	Preregister a research study outlining the hypotheses, methods, and analysis plan	Word, GoogleDoc, OSF
Registered Report Protocol Preregistration	Register your protocol AFTER having been given "in-principle acceptance" from a Registered Report journal	Word, GoogleDoc, OSF Workflow
Secondary Data Preregistration*	For preregistering a research project that uses an existing dataset.	OSF Page, Example, FAQ

EEG pre-registration template

The screenshot shows the MetaArXiv Preprints website interface. At the top, there is a dark blue header with the "Meta" logo, "MetaArXiv Preprints", and navigation links for "Submit a Preprint", "Search", "Donate", "Sign Up", and "Sign In". Below the header, the main content area has a dark grey background. The title "EEG ERP Preregistration Template" is displayed prominently. Underneath the title, the word "AUTHORS" is followed by a long list of names: Gisela H. Govaart, Antonio Schettino, Saskia Helbling, David MA Mehler, William X. Q. Ngiam, David Moreau, Francesco Chiossi, Anthony P. Zanesco, Yu-Fang Yang, Remi Gau, James E Bartlett, José C. García Alanis, Jennifer Gutsell, Melis Cetincelik, Yuri G. Pavlov, Andela Šoškić, Benedikt Valerian Ehinger, Pedram Mouseli, Johannes Algermissen, Marta Topor, Jose Pérez-Navarro, Greta Häberle, Melanie S. Schreiner, Katrin Rothmaler, Guiomar Niso, Mariella Paul. Below the authors' names, there are sections for "AUTHOR ASSERTIONS", "Conflict of Interest: No", "Public Data: Not applicable", and "Preregistration: Not applicable". The main content area contains the text of the pre-registration template, which includes the title "EEG ERP Preregistration Template", a list of authors, and a note about the project being a preregistration template for EEG projects investigating event-related potentials (ERPs) in the sensor space. It also features a "Download" button, "Views: 783 | Downloads: 124", social sharing icons for Twitter, Facebook, LinkedIn, and Email, and a "plaudit" endorsement button. The footer of the page provides the DOI (10.31222/osf.io/4nvpt), license information (CC-BY Attribution 4.0 International), and a note about the project being part of the IGDORE initiative.

EEG ERP Preregistration Template

AUTHORS

Gisela H. Govaart, Antonio Schettino^{4,5,*}, Saskia Helbling^{6,7}, David M. A. Mehler^{8,9}, William Xiang Quan Ngiam¹⁰, David Moreau^{11,12}, Francesco Chiossi¹³, Anthony Zanesco¹⁴, Yu-Fang Yang¹⁵, Remi Gau¹⁶, James Bartlett¹⁷, José C. García Alanis^{18,19}, Jennifer Gutsell²⁰, Melis Cetincelik²¹, Yuri Pavlov^{22,23}, Andela Šoškić²⁴, Benedikt Ehinger²⁵, Pedram Mouseli²⁶, Johannes Algermissen²⁷, Marta Topor²⁸, Jose Pérez-Navarro²⁹, Greta Häberle^{2,3,15}, Melanie S. Schreiner³⁰, Katrin Rothmaler³¹, Guiomar Niso³², Mariella Paul^{33,34,*}

*Department of Neuropsychology, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, ²Charité – Universitätsmedizin Berlin, Einstein Center for Neurosciences Berlin, Berlin, Germany, ³Humboldt-Universität zu Berlin, Faculty of Philosophy, Berlin School of Mind and Brain, Berlin, Germany, ⁴Erasmus Research Services, Erasmus University Rotterdam, Rotterdam, the Netherlands, ⁵Institute for Globally Distributed Open Research and Education (IGDORE), Sweden, ⁶Poeppel Lab, Ernst

Download

Views: 783 | Downloads: 124

Be the first to endorse this work

plaudit

Abstract

This preregistration template guides researchers who wish to preregister their EEG projects, more specifically studies investigating event-related potentials (ERPs) in the sensor space.

Preprint DOI

10.31222/osf.io/4nvpt

License

CC-BY Attribution 4.0 International ▶

<https://osf.io/preprints/metaarxiv/4nvpt/>

16

fMRI pre-registration templates

The screenshot shows the OSF (Open Science Framework) homepage. At the top, there's a navigation bar with links for "Search", "Support", "Donate", "Sign Up", and "Sign In". Below the navigation bar, the main content area displays a project titled "fMRI Preregistration Template". The project page includes a brief description, contributors (Jessica Flannery), and details about its creation date (2018-05-06) and last update (2020-10-22). It also indicates it's a "Project". A detailed description follows: "The goal of this #bhg18 mini project was to provide a detailed preregistration template for fMRI specific projects and to projects. This template combines resources from osf's preregistration challenge, prior social psychology template, and suggested best meant to be live documents for others to contribute and improve!" Below the description is a file list showing "fMRI Preregistration Template", "GitHub: jessicaflannery/fmri-prereg (main)", "fMRI_prereg.docx", "fMRI_prereg.Rmd", and "README.md".



PsychArchives

Home / Browse / A fMRI pre-registration template

Home Contribute Browse DRO Types Info

A fMRI pre-registration template

Author(s) / Creator(s)

Beyer, Frauke
Flannery, Jessica
Gau, Rémi
Janssen, Lieneke
Schaare, Lina
Hartmann, Helena
Nilsonne, Gustav
Martin, Sandra
Khalil, Ahmed
Lipp, Ilona
Puhlmann, Lara
Heinrichs, Hannah
Mohamed, Abdallah
Herholz, Peer
Sicorello, Maurizio

Persistent Identifier

<https://doi.org/10.23668/psycharchives.5121>

Date of first publication

2021-09-21

Publisher

PsychArchives

Is version of

<https://osf.io/6juft/>

Citation

Beyer, F., Flannery, J., Gau, R., Janssen, L., Schaare, L., Hartmann, H., Nilsonne, G., Martin, S., Khalil, A., Lipp, I., Puhlmann, L., Heinrichs, H., Mohamed, A., Herholz, P., Sicorello, M.

<https://osf.io/6juft/>

<https://www.psycharchives.org/en/item/eaf562e3-69a7-46a4-925a-05a982ef1a0b>

Registered Reports

Comparison of Registered Reports

File Edit View Insert Format Data Tools Extensions Help

View only

A1

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	C
1	Return to the Registered Reports page at the COS																
2	Journal	1. Includes pre-study peer review	2. Offers provisional pre-study acceptance	3. Permanence of adoption	4. Offered for novel studies	5. Offered for replication studies	6. Offered for meta-analysis	7. Offered for analyses of existing data sets	8. Publishes Registered Reports only	9. Allows reporting of unregistered analyses	10. Includes post-study peer review	11. Allows inclusion of unregistered pilot studies	12. Requires public data deposition	13. Specifies structured criteria for editorial decisions	14. Requires submitted protocols to have prior ethical approval	15. Specifies minimum statistical power requirements	16.1 pub With Registr
3	JOURNALS OFFERING REGISTERED REPORTS																
4	AAS Open Research	✓	✓	Indefinite	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5	Academia Journal of Stroke	✓	✓	Indefinite	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TE
6	Academy of Management Discoveries	✓	✓	Indefinite	✓	✓		✓		✓	✓	✓					
7	Acta Psychologica	✓	✓	Indefinite	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓
8	Adaptive Behaviour and Human Physiology	✓	✓	Special issue	✓	✓	✓	✓		✓	✓	✓	✓				✓
9	Addiction Research & Theory	✓	✓	Indefinite	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓
10	Advances in Methods and Practices in Psychological Science	✓	✓	Indefinite	✓	✓	✓	✓		✓	✓	✓		✓			✓
11	AERA Open	✓	✓	Special issue	✓	✓	✓	✓		✓	✓	✓					
12	Affective Science	✓	✓	Indefinite	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TE
13	Alimentary Pharmacology & Therapeutics	✓	✓	Indefinite	✓	✓		✓		✓	✓	✓		✓	✓	✓	✓
14	American Journal of Political Science	✓	✓	Special issue: 2016 ANES Preacceptance Initiative													
15	American Political Science Review	✓	✓														
16	American Politics Research	✓	✓														

Does pre-registration guarantee good science?

- “Rigorous science”

Scientific Life

Preregistration Is Hard, And Worthwhile

Brian A. Nosek,^{1,*}

Emorie D. Beck,²

Lorne Campbell,³

Jessica K. Flake,⁴

Tom E. Hardwicke,⁵

David T. Mellor,¹

Anna E. van ’t Veer,⁶ and

Simine Vazire⁷



Trends in Cognitive Sciences

Letter

Is Preregistration Worthwhile?

Aba Szollosi,^{1,*} David Kellen,²

Danielle J. Navarro,¹

Richard Shiffrin,³ Iris van Rooij,⁴

Trisha Van Zandt,⁵ and

Chris Donkin¹

Preregistration is redundant, at best

A plan or a prison?



Preregistration: A Plan, Not a Prison

May 23rd, 2017, Alexander DeHaven

Posted in: [Preregistration](#)

can I deviate without nullifying the preregistration?" Fortunately, a preregistration is a document of your pre-specified research plans before seeing the results; it is not a prison sentence. Depending on what stage of the research project you are in, you can either update the preregistration, or rely on transparency to give context to any unanticipated decisions. As you'll see, this transparency gives others the information they need to evaluate key decisions made to the planned research.

Paths in strange spaces: A comment on preregistration

Danielle J. Navarro

Original: November 2019; PsyArXiv: September 2020

ossify scientific practices in an undesirable fashion. That is to say, while advocates of preregistration often claim that "*preregistration is a plan, not a prison*", they will also claim that *preregistration is necessary to prevent p-hacking*. Unfortunately, you cannot have it both ways: in my opinion these two claims are in direct opposition to one another unless you *also* stipulate an unreasonable level of foreknowledge on behalf of the experimenter.

- *Strict*. Researcher specifies the complete analysis plan in advance and does not deviate even if the data turn out to be highly surprising. This does indeed prevent p-hacking in the conventional sense but forces the researcher to use inappropriate statistics: under the strict interpretation, preregistration is in fact a prison, not a plan.
- *Flexible*. Researcher specifies the analysis plan, but is willing to deviate if in retrospect the planned analysis seems inappropriate for the data. This satisfies the claim that preregistration is a plan not a prison, but does so by opening the door to p-hacking once more. A researcher may unwittingly decide to apply greater scrutiny to data that they find disappointing, and thereby become more likely discover reasons to justify departures from the plan.
- *Oracular*. There is a third possibility: the researcher writes a preregistered plan that covers every possible eventuality, listing exactly how each case will be handled and then – because this composite if/then decision making procedure is no longer a specific hypothesis test – derives an appropriate decision policy for that plan which satisfies Neyman's admissibility criteria. This would indeed allow us to have the best of both worlds: because the prespecified "deviation plan" is incorporated into the design of the subsequent decision policy, we can have the flexibility we desire (our preregistration is indeed a plan and not a prison) while ensuring that our overall Type I error rate remains bounded at its nominal level (no p-hacking allowed). Perfect ...and all it requires is godlike planning abilities! I'll confess I don't personally have the intellect to construct that kind of analysis plan for the kinds of experiments I do, but perhaps someone smarter than me can figure it out.

Transparent workflow documentation

- Be transparent about deviations
- Be transparent about sequential decisions

planned analyses. Most often, planned analyses are equated with hypothesis testing or confirmatory research, but one can also preregister analysis plans when there are no *a priori* hypotheses to test (i.e., a planned exploratory analysis).

Deviations from data collection and analysis plans are common, even in the most predictable investigations. Deviations do not necessarily rule out testing predictions effectively. If the outcomes have not yet been observed, Jolene can document the changes to her preregistration without undermining diagnosticity. However, even if the data have been observed, preregistration provides substantial benefit. Jolene can transparently report changes that were made and why. Most of the design and analysis plan is still preserved, and deviations are reported transparently, making it possible to assess their impact. Compared with the situation in which Jolene did not preregister at all, preregistration with reported deviations provides substantially greater confidence in the resulting statistical inferences.

“Update” pre-registration

Preregistration is a plan, not a prison (<http://cos.io/blog/preregistration-plan-not-prison/>). When deviations from the plan will improve the quality of the research, deviate from the plan. Many studies will have some deviations between the preregistered plan and what actually occurs. Planned analyses may contain errors

[10]. Deviations inevitably make it harder to interpret with confidence what occurred in relation to what was planned. Transparency is key – all deviations from the plan should be acknowledged.

coherence, and reviewer expectations. If possible, report what occurs following the original plan alongside what occurs with the deviations, and share the materials, data, and code so that others can evaluate the reported outcomes and what would have occurred with alternative approaches.

- Update pre-registration (even before analyzing data)
- Mention all planned analyses (even if results not reported)
- Document all deviations from the original analysis plan (table, flowchart)
- Use supplementary materials
- Keep logging updates about analysis pipeline during the actual analyses

Pre-registration “light”?

- Any pre-registration is better than no pre-registration
- Incremental preregistrations (multiple stages)
 - Need to ensure analyst stays “blinded”
- Pre-register decision tree
 - Use Standard Operating Procedures (SOPs)

cies are most important to anticipate. This might lead researchers to shy away from preregistration for worries about imperfection. Embrace incrementalism. Pre-registration is a methodological skill that takes time to develop. Having some plans is better than having no plans, and sharing those plans in advance is better than not sharing them. With experience, planning will improve and the benefits will increase for oneself and for consumers of the research.

For some kinds of analysis, it is possible to define stages and preregister incrementally. For example, a researcher could define a preregistration that evaluates distributional forms of variables to determine data exclusions, transformations, and appropriate model assumptions that do not reveal anything about the research outcomes. After that, the researcher preregisters the model most appropriate for testing the outcomes of interest. Effective application of sequential preregistration is difficult in many research applications. If an earlier stage reveals information about outcomes to be tested at a subsequent stage, then the preregistration is compromised.

Pre-registration “light”^2?

- “Private” preregistration:
 - Fine to pre-register and not tell anyone (as-predicted)
 - Pre-register only for yourself (save pdf on your hard drive)
 - Will not help against fighting the file drawer

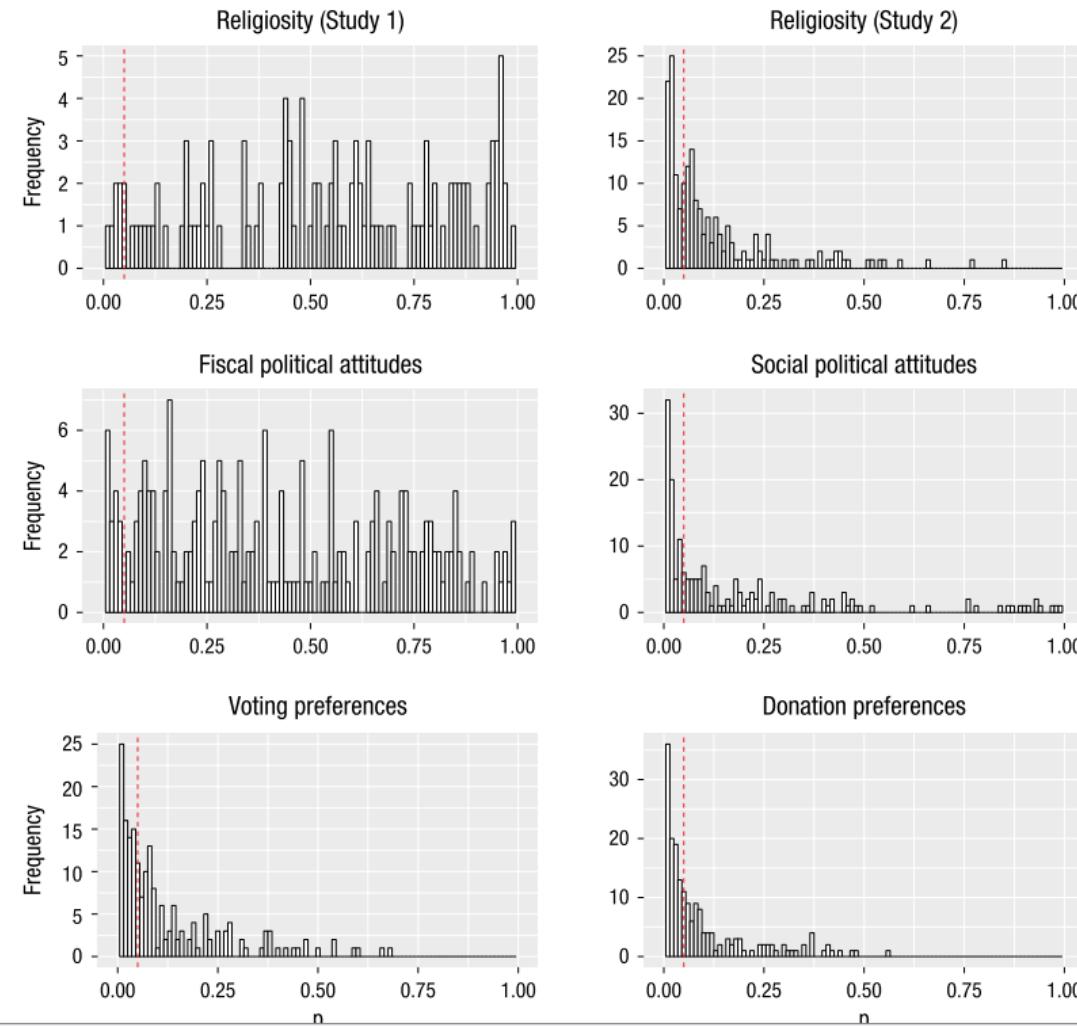
HOW DOES IT WORK?

- One author creates the pre-registration.
- Participating authors are emailed, requesting approval.
- If all approve, it is saved but remains private until an author makes it public; or remains private forever. ([Why?](#))
- Authors may share an anonymous version of the pre-registration with reviewers.
- If made public, the final .pdf ([sample](#)) is automatically stored in the [web-archive](#).

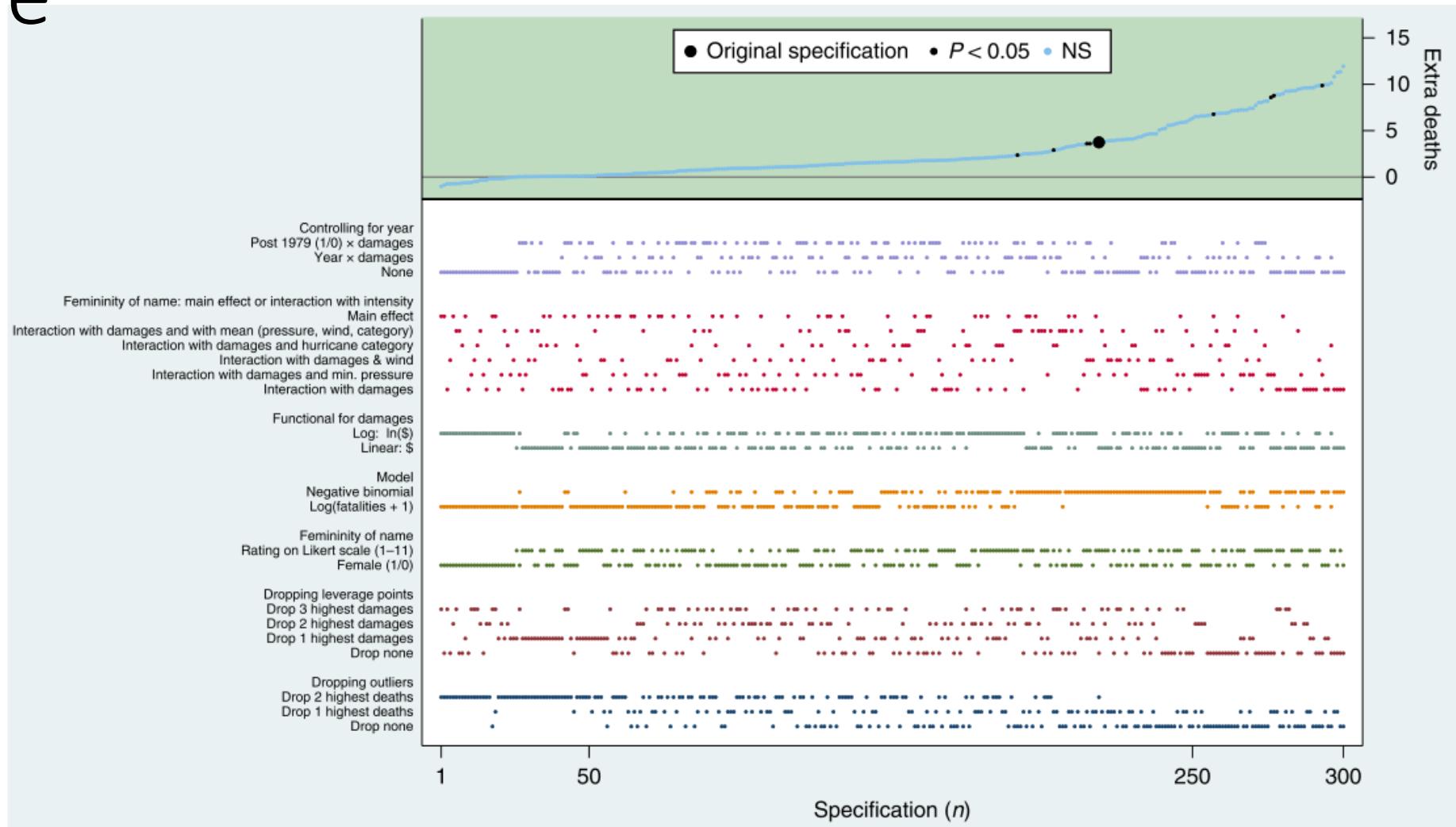
Other approaches to documentation

With this in mind, I don't think that (for example) the current OSF registration system provides the right toolkit. To produce the fine-grained document trail that shows precisely what I did, I would need to create a great many registrations for every project (dozens, at the very least). This is technically possible within the OSF system, of course, but there are much better ways to do it. Because what I'm really talking about here is something closer to an "open notebook" approach to research, and there are other excellent tools that can support this. For my own part I try to use git repositories to leave an auditable trail of commit logs that can be archived on any number of public servers (e.g., GitHub, BitBucket, GitLab), and I use literate programming methods such as R Markdown and Jupyter notebooks to allow me to document my thinking on the fly during the model building process. Other researchers might have different approaches.

Alternatives to pre-registration: Multiverse



Alternatives to pre-registration: Specification curve



2. Reproducibility

(and code sharing)

Terminology

		Data	
		Same	Different
Analysis	Same	Reproducible	Replicable
	Different	Robust	Generalisable

Extra resources

OSC Nijmegen

📍 Nijmegen, the Netherlands

🐦 Twitter

GitHub

RESOURCES

OS survey results (2019)

Resources

Materials from past events

- Slides to workshop [Open Science](#) at the Donders Graduate School Day by Johannes Algermissen, 29 June, 2022.
- Slides to webinar [Does science correct itself?](#) by Willem Halfman, 17 June, 2021
- Slides to webinar *Large-scale collaborations in science*, 11 June, 2021:
 - [Slides Christina Bergmann \(ManyBabies\)](#).
 - [Slides Martine Hoogman \(ENIGMA\)](#).
 - [Slides Angelique Janssens \(SHiP\)](#).
- Slides to webinar [From Chaos to Order: Efficient file management](#) by Johannes Algermissen, Hannah Peetz, and Eva Poort, 26 May, 2021
- Slides to webinar [Challenges and new trends in pre-registration](#) by Johannes Algermissen, 09 December, 2020
- Slides to webinar [Open Access step-by-step](#) by Jeroen Bos, 10 November, 2020
- Slides to webinar [Plan S](#) by Dirk van Gorp, 12 November, 2020
- Slides to webinar [Make your code more readable through best coding practices](#) by Arushi Garg, 28 October, 2020

RESOURCES

RESEARCH DATA MANAGEMENT

WHY IS RESEARCH DATA MANAGEMENT IMPORTANT?

HOW TO START WITH A DATA MANAGEMENT PLAN?

WHERE CAN I DEPOSIT MY MATERIALS?

WHAT SUPPORT DOES RADBOUD UNIVERSITY OFFER ME REGARDING RESEARCH DATA MANAGEMENT?

RESOURCES

OPEN ACCESS

WHAT IS OPEN ACCESS?

WHAT ARE MY OPTIONS TO PUBLISH OPEN ACCESS?

DOES IT ALWAYS COST MONEY TO PUBLISH OPEN ACCESS?

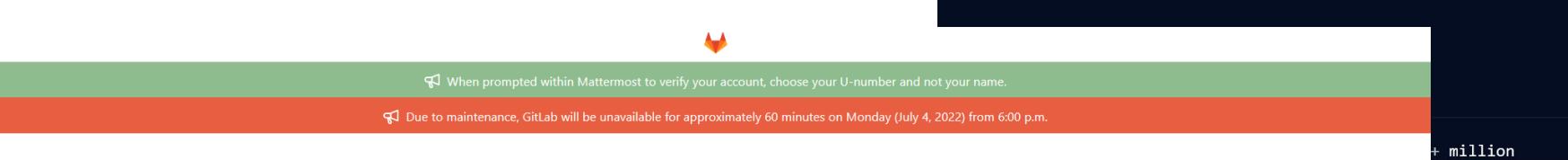
DO I HAVE TO PUBLISH OPEN ACCESS?

WHAT SUPPORT DOES RADBOUD UNIVERSITY OFFER ME REGARDING OPEN ACCESS PUBLISHING?

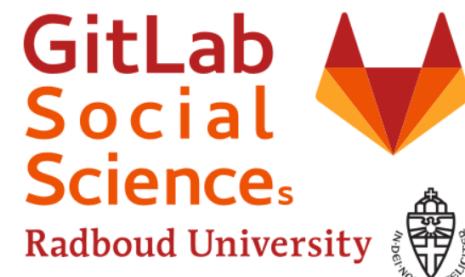
THEORY BUILDING

HOW DOES THEORY BUILDING RELATE TO OPEN SCIENCE?

Version control



Welcome to



Manage your projects and enhance collaboration with issue trackers and wiki pages. Real-time chat at <https://mattermost.socsci.ru.nl>.

For support, please check the TSG wiki page [about GitLab](#) or [about Mattermost](#).

RU	Standard
RU Username	<input type="text"/>
Password	<input type="password"/>
<input type="checkbox"/> Remember me	
<input type="button" value="Sign in"/>	

Structuring code

- Use headers/ comments
- Use relative file paths
- Outsource repeated procedures to functions
 - Document/ comment!
- Set seeds!

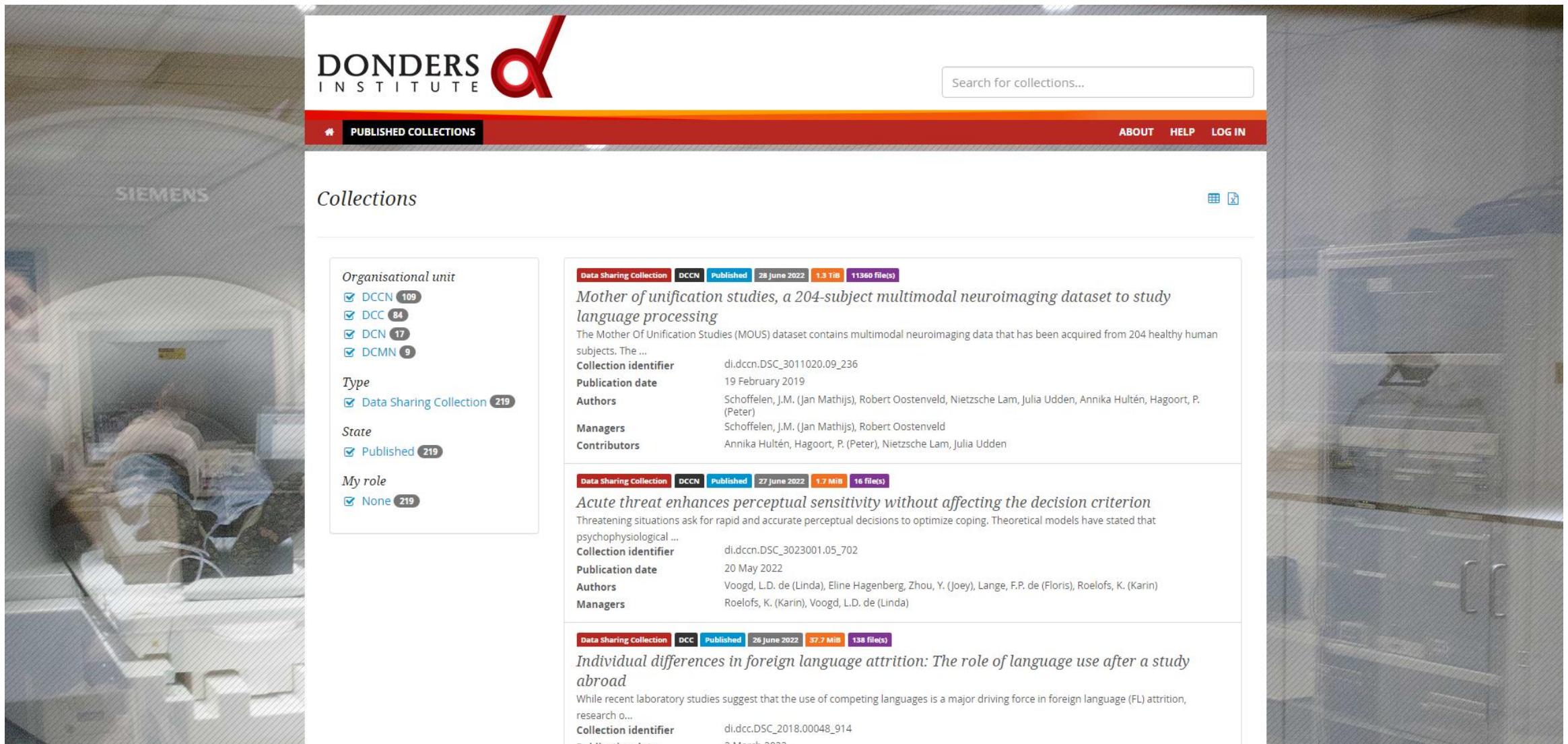
```
692 - create_percentiles <- function(data, varName, nPerc = 5, perSub = F){  
693   #' Create percentiles for numeric variables, either across data or separately for each subject.  
694   #' @param data      data frame with trial-level data.  
695   #' @param varName   string, variable for which to create percentiles.  
696   #' @param nPerc     scalar integer, number of percentiles to create.  
697   #' @param perSub    Boolean, create percentiles for each subject (T) or across all subjects (F), default  
698   #' @return data     same data frame with variable added splitting varName in percentiles.  
  
47  # =====  
48 - ##### SET SEED: #####  
49  
50 set.seed(70)  
51
```

```
#!/usr/bin/env Rscript  
# =====  
# 02_analyze_multivariate.R  
# Fit multivariate models in brms.  
# Johannes Algermissen, 2022.  
# Last updated 2022/06/28.  
  
32 # =====  
33 - ##### Directories: #####  
34  
35 rootDir    <- "/project/3017042.01/projects/DBS/"  
36  
37 codeDir    <- paste0(rootDir, "analyses/johannes/behavior/regression/")  
38 dataDir    <- paste0(rootDir, "data/")  
39 rawDataDir <- paste0(dataDir, "rawData/ONOFF/")  
40 processedDataDir <- paste0(dataDir, "processedData/")  
41  
42 ## Output directory for saved data sets:  
43 dataSetsDir <- paste0(processedDataDir,"dataSets/")  
44  
45 ## Models:  
46 modelDir <- paste0(dataDir, "models/")  
47  
--  
61 # =====  
62 - ##### Load packages and custom functions: #####  
63  
64 source(paste0(codeDir, "package_manager.R")) # Load packages and options settings  
65 source(paste0(codeDir, "00_functions_analyze.R")) # Load functions  
66  
67 library(brms)  
68 library(bayesplot)  
69
```

```
1  function [behav] = load_behavior(task, iSub, dropCatch, rejectedTrials)  
2  
3  % Load behavior per subject for given task.  
4  
5  % INPUTS:  
6  %   task      = string, task data to load, either 'posner' or  
7  %   'oyster', without default.  
8  %   iSub      = positive scalar integer, identifier of subject to  
9  %   process, without default.  
10 %   dropCatch  = Boolean, drop catch trials (true) or not (false).  
11 %   rejectedTrials = vector of positive integers, indices of trials to  
12 %   reject (default: none).  
13 % Some dirs...?  
14  
15 % OUTPUTS:  
16 %   behav     = structure with all behavioral variables, corrected in  
17 %   case of uninstructed button presses, cropped for trials not recorded in  
18 %   MEG (at the beginning).  
19  
20 % By Johannes Algermissen, Donders Institute, 2021.  
21 % Should work in Matlab 2019b.
```

3. Data sharing

The Donders Repository



The image shows a screenshot of The Donders Repository website. The header features the Donders Institute logo with a red 'd' icon. A search bar is at the top right. Below the header, a navigation bar includes links for 'ABOUT', 'HELP', and 'LOG IN'. The main content area is titled 'Collections' and displays three dataset cards.

Organisational unit

- DCCN 109
- DCC 84
- DCN 17
- DCMN 9

Type

- Data Sharing Collection 219

State

- Published 219

My role

- None 219

Data Sharing Collection | **DCCN** | **Published** | 28 June 2022 | 1.3 TiB | 11360 file(s)

Mother of unification studies, a 204-subject multimodal neuroimaging dataset to study language processing

The Mother of Unification Studies (MOUS) dataset contains multimodal neuroimaging data that has been acquired from 204 healthy human subjects. The ...

Collection identifier di.dccn.DSC_3011020.09_236
Publication date 19 February 2019
Authors Schoffelen, J.M. (Jan Mathijs), Robert Oostenveld, Nietzsche Lam, Julia Udden, Annika Hultén, Hagoort, P. (Peter)
Managers Schoffelen, J.M. (Jan Mathijs), Robert Oostenveld
Contributors Annika Hultén, Hagoort, P. (Peter), Nietzsche Lam, Julia Udden

Data Sharing Collection | **DCCN** | **Published** | 27 June 2022 | 1.7 MiB | 16 file(s)

Acute threat enhances perceptual sensitivity without affecting the decision criterion

Threatening situations ask for rapid and accurate perceptual decisions to optimize coping. Theoretical models have stated that psychophysiological ...

Collection identifier di.dccn.DSC_3023001.05_702
Publication date 20 May 2022
Authors Voogd, L.D. de (Linda), Eline Hagenberg, Zhou, Y. (Joey), Lange, F.P. de (Floris), Roelofs, K. (Karin)
Managers Roelofs, K. (Karin), Voogd, L.D. de (Linda)

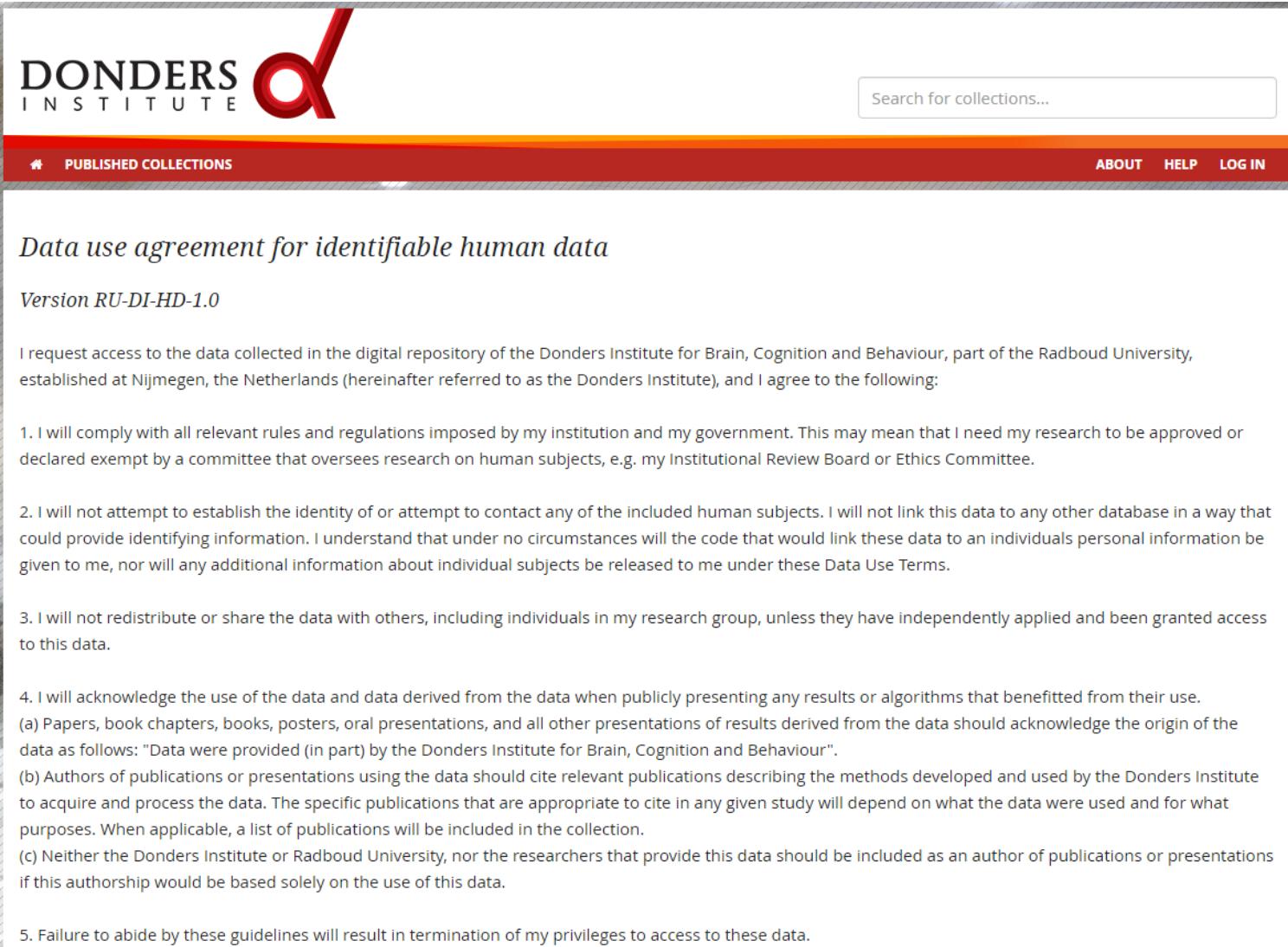
Data Sharing Collection | **DCC** | **Published** | 26 June 2022 | 37.7 MiB | 138 file(s)

Individual differences in foreign language attrition: The role of language use after a study abroad

While recent laboratory studies suggest that the use of competing languages is a major driving force in foreign language (FL) attrition, research o...

Collection identifier di.dcc.DSC_2018.00048_914
Publication date 2 March 2022

Special licenses for neuroimaging data



The screenshot shows the Donders Institute website interface. At the top left is the Donders Institute logo with a red stylized 'd'. To its right is a search bar containing the placeholder text 'Search for collections...'. Below the header is a red navigation bar with three items: 'PUBLISHED COLLECTIONS' (with a small icon), 'ABOUT', 'HELP', and 'LOG IN'. The main content area has a white background and features the title 'Data use agreement for identifiable human data' in bold black font. Below it is the subtitle 'Version RU-DI-HD-1.0'. A paragraph of text follows, stating: 'I request access to the data collected in the digital repository of the Donders Institute for Brain, Cognition and Behaviour, part of the Radboud University, established at Nijmegen, the Netherlands (hereinafter referred to as the Donders Institute), and I agree to the following:'. This is followed by a numbered list of five conditions.

Data use agreement for identifiable human data

Version RU-DI-HD-1.0

I request access to the data collected in the digital repository of the Donders Institute for Brain, Cognition and Behaviour, part of the Radboud University, established at Nijmegen, the Netherlands (hereinafter referred to as the Donders Institute), and I agree to the following:

1. I will comply with all relevant rules and regulations imposed by my institution and my government. This may mean that I need my research to be approved or declared exempt by a committee that oversees research on human subjects, e.g. my Institutional Review Board or Ethics Committee.
2. I will not attempt to establish the identity of or attempt to contact any of the included human subjects. I will not link this data to any other database in a way that could provide identifying information. I understand that under no circumstances will the code that would link these data to an individual's personal information be given to me, nor will any additional information about individual subjects be released to me under these Data Use Terms.
3. I will not redistribute or share the data with others, including individuals in my research group, unless they have independently applied and been granted access to this data.
4. I will acknowledge the use of the data and data derived from the data when publicly presenting any results or algorithms that benefitted from their use.
(a) Papers, book chapters, books, posters, oral presentations, and all other presentations of results derived from the data should acknowledge the origin of the data as follows: "Data were provided (in part) by the Donders Institute for Brain, Cognition and Behaviour".
(b) Authors of publications or presentations using the data should cite relevant publications describing the methods developed and used by the Donders Institute to acquire and process the data. The specific publications that are appropriate to cite in any given study will depend on what the data were used and for what purposes. When applicable, a list of publications will be included in the collection.
(c) Neither the Donders Institute or Radboud University, nor the researchers that provide this data should be included as an author of publications or presentations if this authorship would be based solely on the use of this data.
5. Failure to abide by these guidelines will result in termination of my privileges to access to these data.

Non-Donders alternatives

The screenshot shows the OSF homepage with a teal and blue background. The main headline reads "There's a better way to manage your research". Below it, a sub-headline says "OSF is a free, open platform to support your research and enable collaboration." A "Get started" button is visible. The "Discover public research" section includes a search bar with the placeholder "Search discipline, author...".

The screenshot shows the Dryad homepage featuring a banner with the text "DRYAD" and "Make the most of your research data" over an image of insect specimens. A sidebar on the left contains the text "Dryad is a community-owned resource" and a link "Learn more about our organizational memberships". A "Submit Now" button is on the right.

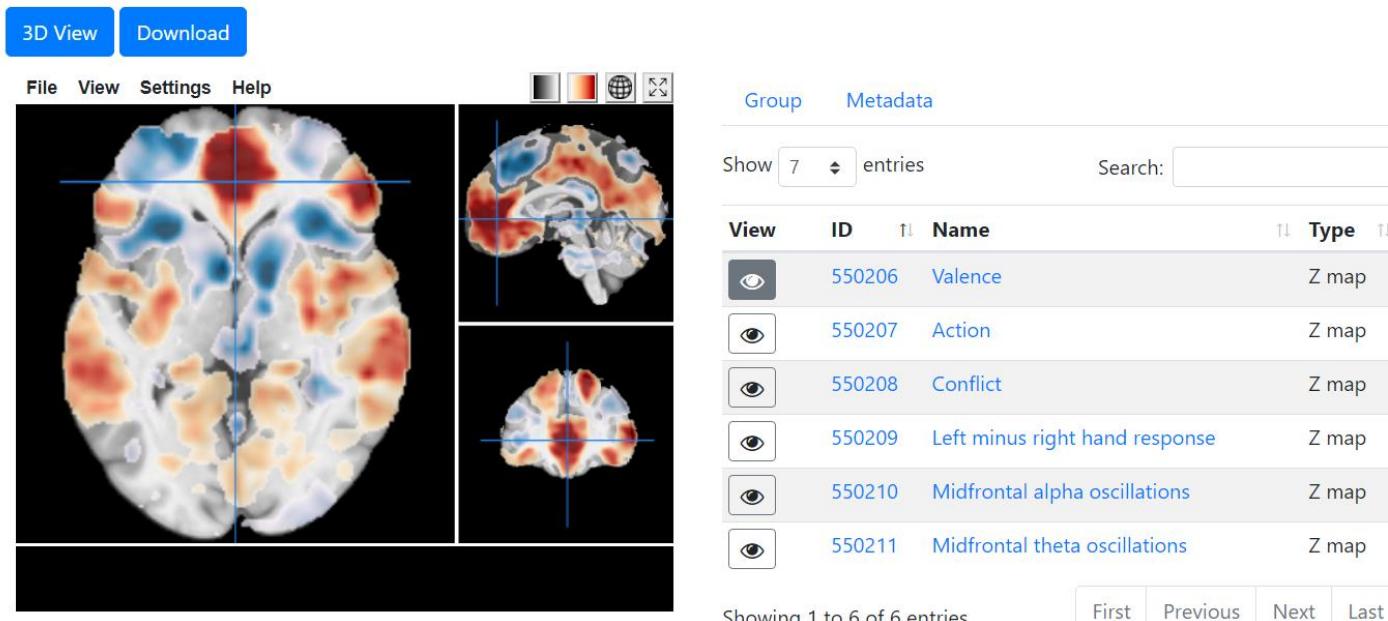
The screenshot shows the Zenodo homepage with a blue header. It features a "Featured communities" section for "Transform to Open Science" with a NASA TOPS logo and a "Recent uploads" section for "OpenAIRE Covid-19 publications, datasets, software and projects metadata". A "Need help?" contact form is also present.

The screenshot shows the figshare homepage with a dark background featuring a colorful molecular or network visualization. A central white box contains the text "store, share, discover research" and "get more citations for all of the outputs of your academic research over 80,000 citations of figshare content to date". Logos for WIRED and Hide footer are at the bottom.

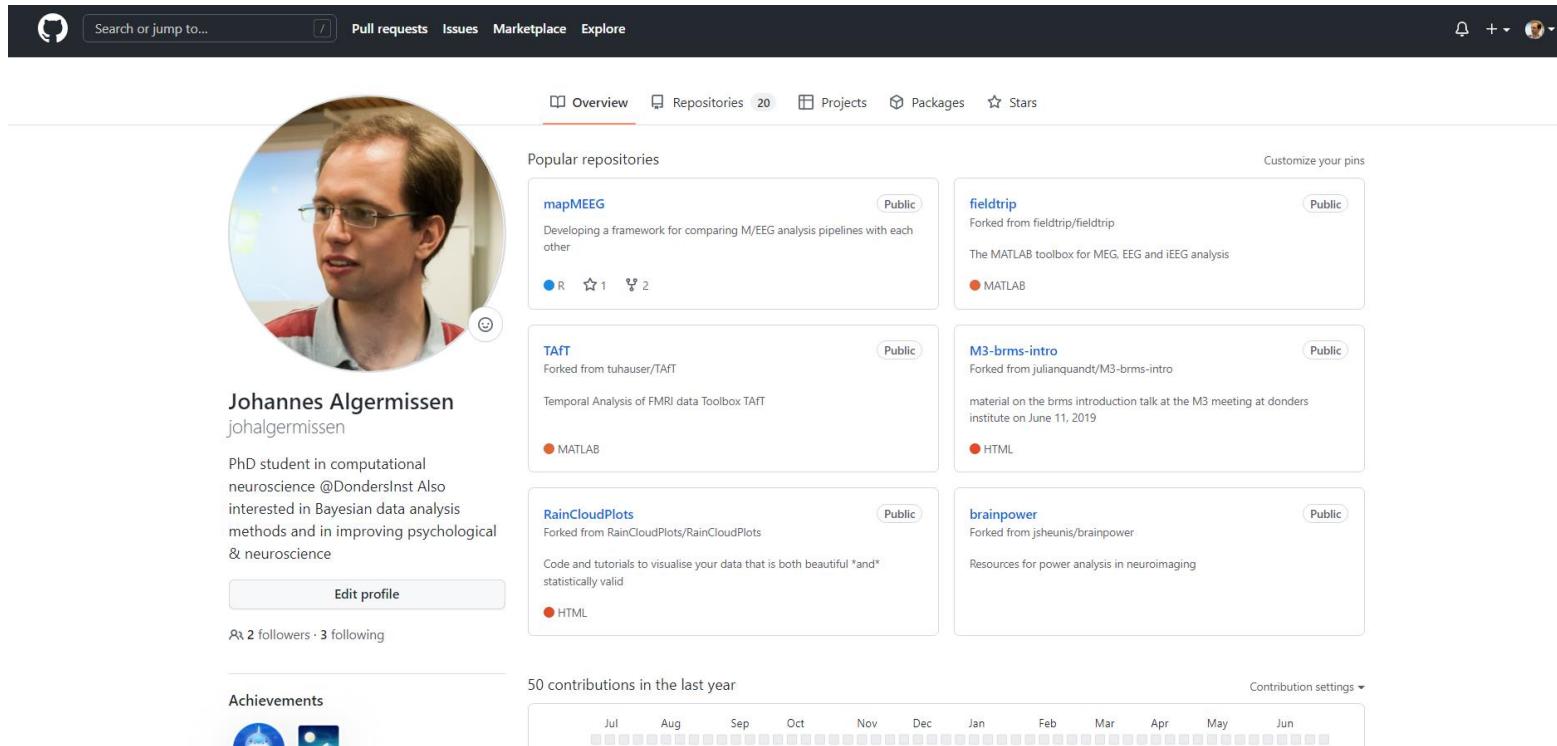
Neurovault

Striatal BOLD and midfrontal theta power express motivation for action

Description: Contrast related to events around cue onset and response execution in a Motivational Go/NoGo task (Swart et al., 2017; 2018; van Nuland et al., 2020). Note that this Go/NoGo task is equiprobable (percent Go/NoGo trials is 50:50) and thus does NOT elicit strong inhibition-related activation. On each trial, a Win or Avoid cue appears; valence of the cue is not signaled but should be learned. Participants should respond during cue presentation. Response-dependent feedback follows after a jittered interval. Each cue has only one correct action (Go-left, Go-right, or NoGo), which is followed by the desired outcome 80% of the time. For Win cues, actions can lead to rewards or neutral outcomes; for Avoid cues, actions can lead to neutral outcomes or punishments. There are eight different cues, orthogonalizing cue valence (Win versus Avoid) and required action (Go versus NoGo). Feedback is probabilistic: Correct actions to Win cues lead to rewards in 80% of cases, but neutral outcomes in 20% of cases. For Avoid cues, correct actions lead to neutral outcomes in 80% of cases, but punishments in 20% of cases. For incorrect actions, these probabilities are reversed.



Maintaining code in the long run



The screenshot shows Johannes Algermissen's GitHub profile. At the top, there is a search bar and navigation links for Pull requests, Issues, Marketplace, and Explore. Below the header, there is a large circular profile picture of Johannes, followed by his name "Johannes Algermissen" and handle "johalgermissen". A bio text states: "PhD student in computational neuroscience @DondersInst Also interested in Bayesian data analysis methods and in improving psychological & neuroscience". There is a "Edit profile" button and a follower count of "2 followers · 3 following". The "Achievements" section shows two icons. The main content area displays "Popular repositories" with cards for "mapMEG", "fieldtrip", "TAFT", "M3-brms-intro", "RainCloudPlots", and "brainpower". Each card includes a brief description, the forked-from repository, programming language (e.g., R, MATLAB), and a "Public" badge. Below the repository cards is a timeline showing "50 contributions in the last year" from July to June, with a "Contribution settings" dropdown.

<https://github.com/johalgermissen>

Data availability

All raw data are available under: <https://doi.org/10.34973/pezs-pw62>. All code required to achieve the reported results as well as preprocessed data and fMRI results are available under: <https://doi.org/10.34973/2t72-bj41>. In line with requirements of the Ethics Committee and the Radboud University security officer, potentially identifying data (such as imaging data) can only be shared to identifiable researchers. Hence, researchers

requesting access to the data have to register and accept a data user agreement; access will then automatically be granted via a “click-through” procedure (without involvement of authors or data stewards).

Code will be maintained under <https://github.com/johalgermissen/Algermissen2021CerCor>, with a permanent copy at the time of publication under <https://github.com/denoudenlab/Algermissen2021CerCor>.

Group-level unthresholded fMRI z-maps are available on Neurovault (<https://identifiers.org/neurovault.collection:11178>).

<https://doi.org/10.1093/cercor/bhab391>

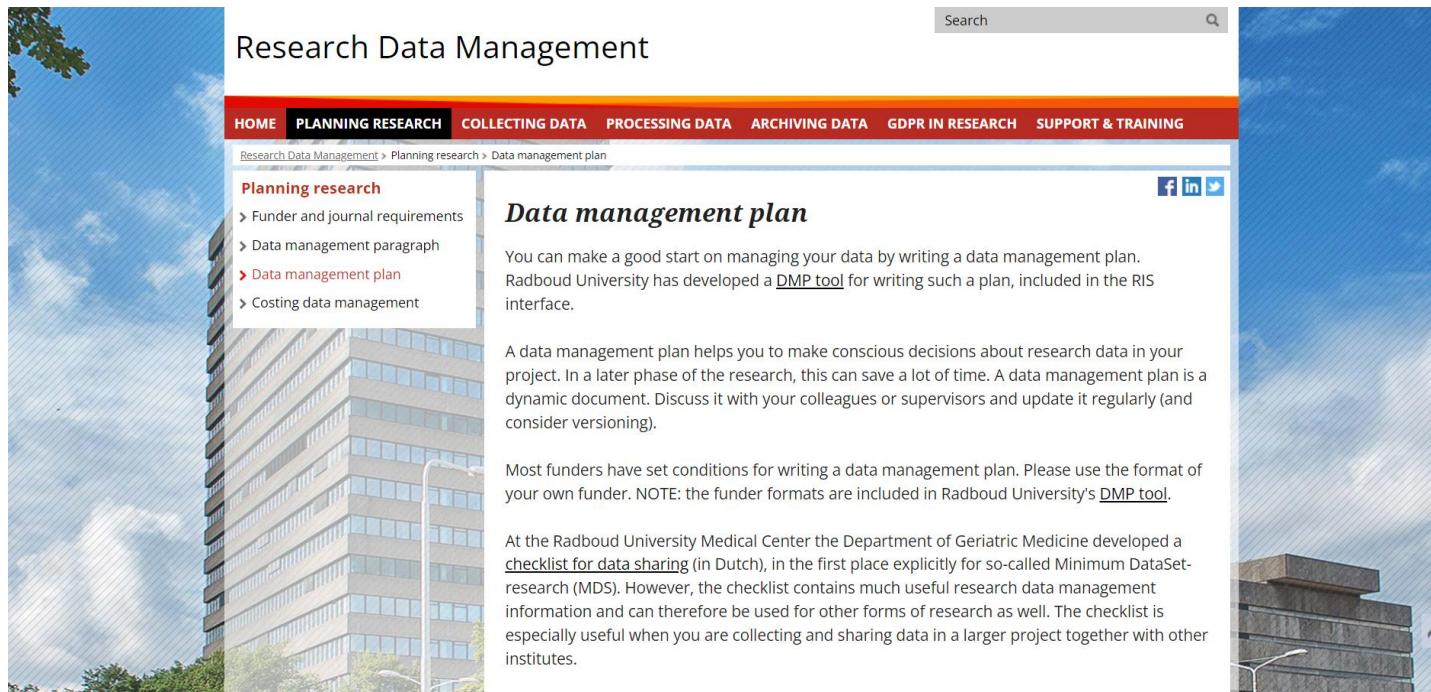
4. Research data management

Research Data Management

- You have to write a **Data Management Plan (DMP)** for your PhD.
- Data can get lost (same as code), store at secure location that is regularly backed-up.
 - At the Donders: project folders, accessible via the high-performance computing cluster (HPC)
 - Formerly: werkgroepmappen (future: OneDrive???)

Data Management Plan (DMP)

- You have to write a **Data Management Plan (DMP)** for your PhD.
- Many grants require a DMP nowadays.



<https://www.ru.nl/rdm/planning-research/data-management-plan/>

The Radboud DMP tool

The screenshot shows a website for Research Information Services (RIS). The header includes a search bar and navigation links for HOME, MANUALS RIS, MANUALS RIS FOR STUDENTS (which is highlighted in red), and SUPPORT. Below the header, a breadcrumb trail indicates the current page: Research Information Services (RIS) > Manuals RIS for Students > RIS for students - Writing a DMP - manual ...

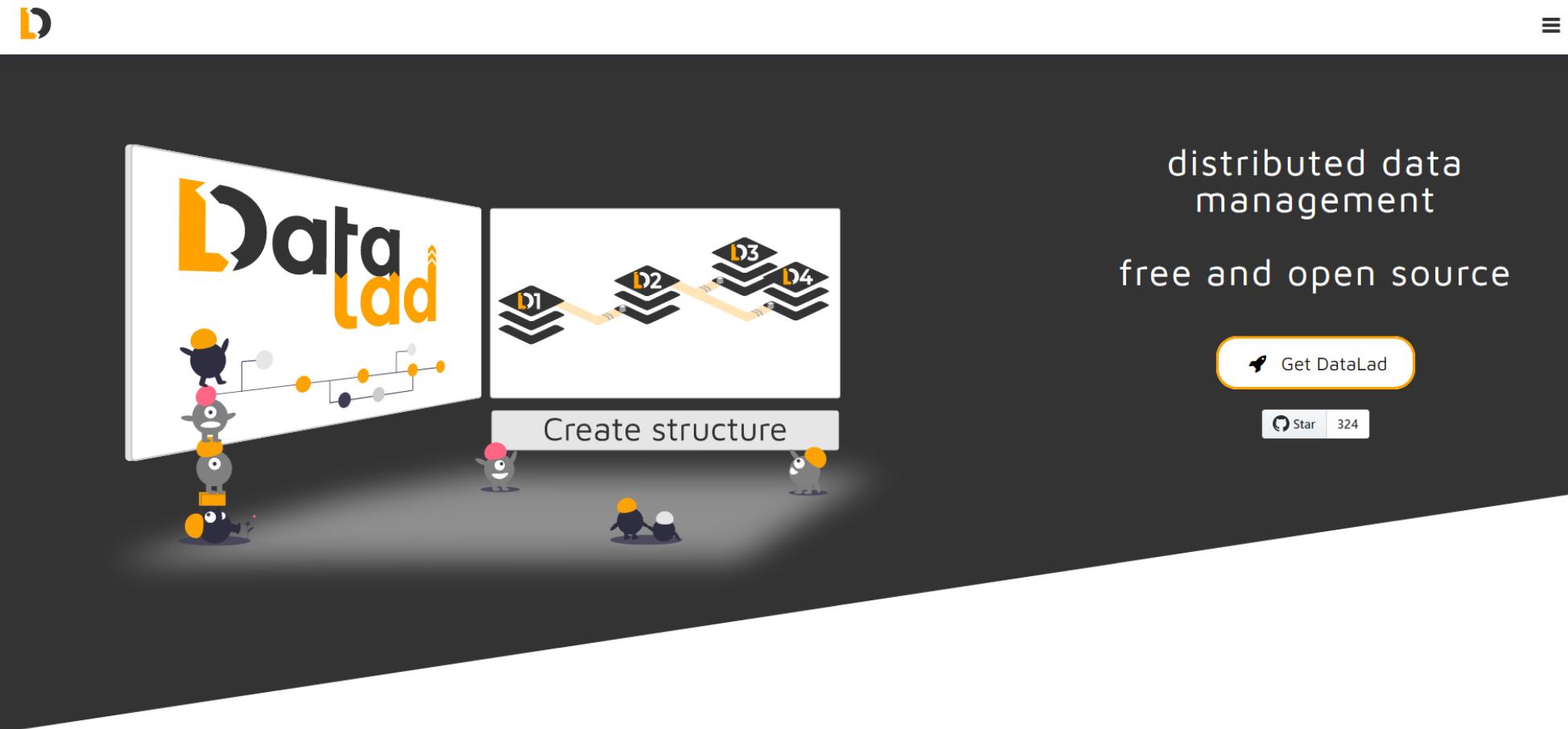
RIS for Students - Writing a DMP - manual for students

BEWARE: RIS for students is not available to all faculties (yet). Students following certain courses at the Faculty of Arts, at the Faculty of Philosophy, Theology and Religious Studies, and Research Master students affiliated with the Behavioural Science Institute (BSI) can use the DMP-tool in RIS for students. When in doubt whether RIS for students can be used at your faculty or institute, feel free to contact us at ris@ubn.ru.nl.

1. Login
You can log into RIS for students using this link and your s-number and usual password: <https://metis.ru.nl/federation/login/risforstudents>

2. Create a new data management plan in RIS for students
a. Click on *results* in the top left corner and then click on *register*

Version-control for data: datalad



5. Open Access

See the Radboud library....

University Library > Services > Research > Open Science > Open Science explained > Open Access

Research

- ▼ Open Science
 - ▼ Open Science explained
 - Open Access
 - Radboud Repository
 - Quality and open access publishing
 - Radboud University Press
 - Deals, funding and discounts
 - Copyright Information Point (CIP)
 - Managing research data
 - Distinguish your research with ORCID
 - Order an ISBN

Open Access

What is open access?

Open access is the unlimited sharing and reuse of publications, such as journal articles, dissertations, books and research data. This is done by making the research results freely accessible.

youtube
Content is not available because cookies are not allowed.
[Allow all cookies](#)

An English-language video (5 minutes) about open access by way of illustration.

Why Open Access?

As a researcher you have advantages when publishing in open access: publication, reuse of your work, wider distribution to peers and a

There is currently no live ... 

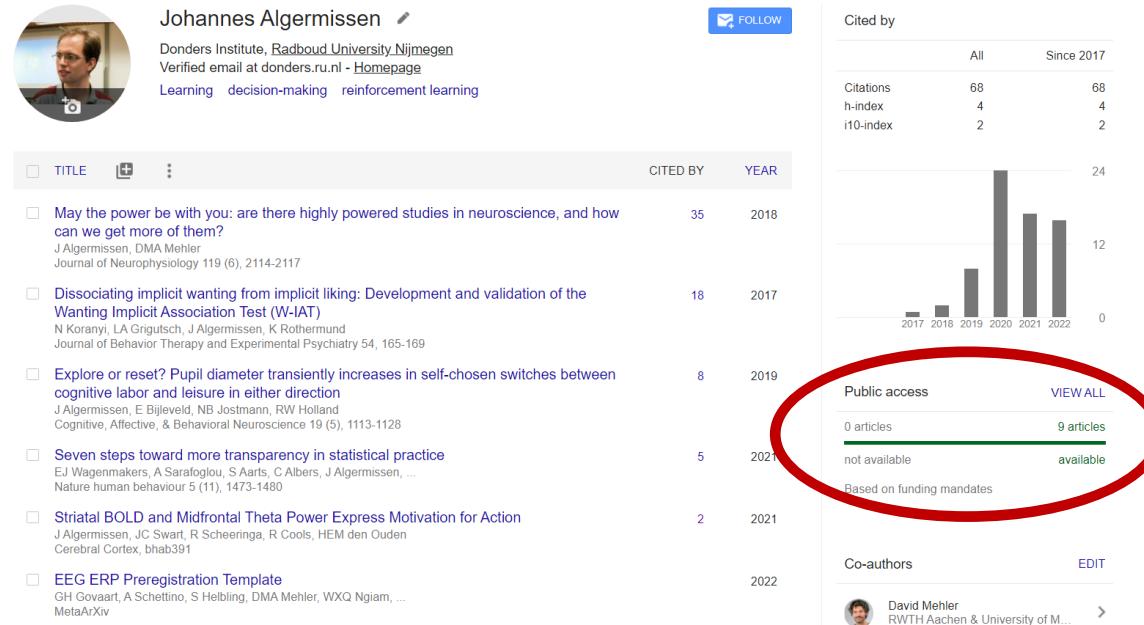
Plan S



Conditions Plan S?

The signers of Plan S state the following conditions for the publications resulting from their funding:

- Publications must immediately become fully open access. There should be no embargoes.
- The publications preferably have a Creative Commons Attribution license (CC-BY). CC BY-SA and CC 0 are also allowed. For the use of other licenses, prior consent of the research funder is required.
More information about the [Creative Commons licenses](#).
- The scientific author and/or the institution holds the copyright. The license must make it possible to make the Version of Record (publisher's version) or the author's version available open access immediately through the Radboud Repository after peer review (postprint).



Dissociating implicit wanting from implicit liking: Development and validation of the Wanting Implicit Association Test (W-IAT)
N Koranyi, LA Grigutsch, J Algermissen, K Rothmund
Journal of Behavior Therapy and Experimental Psychiatry 54, 165-169, 2017

Mandates: German Research Foundation [REVIEW](#)

Explore or reset? Pupil diameter transiently increases in self-chosen switches between cognitive labor and leisure in either direction
J Algermissen, E Bileveld, NB Jostmann, RW Holland
Cognitive, Affective, & Behavioral Neuroscience 19 (5), 1113-1128, 2019

Mandates: Netherlands Organisation for Scientific Research [REVIEW](#)

Seven steps toward more transparency in statistical practice
EJ Wagenmakers, A Sarafoglou, S Aarts, C Albers, J Algermissen, ...
Nature human behaviour 5 (11), 1473-1480, 2021

Mandates: Netherlands Organisation for Scientific Research, European Commission [REVIEW](#)

Striatal BOLD and Midfrontal Theta Power Express Motivation for Action
J Algermissen, JC Swart, R Scheerenga, R Cools, HEM den Ouden
Cerebral Cortex, bhab391, 2021

Mandates: Netherlands Organisation for Scientific Research, Royal Netherlands Academy ... [REVIEW](#)

Goal-directed recruitment of Pavlovian biases through selective visual attention
J Algermissen, HEM den Ouden
bioRxiv, 2022

Mandates: Netherlands Organisation for Scientific Research [REVIEW](#)

Biased credit assignment in motivational learning biases arises through prefrontal influences on striatal learning
[PDF] biorxiv.org

Deals of the VSNU with publishers...

NL / EN



News and events What is open access? In the Netherlands Your role References

What does academia want? Current situation Monitor Publisher deals Taverne Amendment Plan S

Publisher deals

Overview of journals with discount

All publisher deals listed

Contact persons at the universities

An overview of agreements between Dutch university libraries and traditional academic publishers with an open access element starting in 2015. For each publisher the number of open access publications is added.

On a regular base Dutch scientists opt for [publishers which business model is based on pure open access](#). Of the major publishers the publication numbers are also available.

Overview of journal titles

Surfmarket is involved in the negotiations with the publishers and

The different colors of open access

2 Types of Open Access

- Self archiving: **The Green Road**
 - ✓ on your personal website, blog, university webpage
 - ✓ In the institutional repository: Radboud Repository
- Open Access Journals:
The Golden Road

The Green Road

- Database containing the scholarly publications of RU researchers
- Scholarly articles: pre- and postprints
- Dissertations
- Conference papers
- Book chapters

Via the 'green route'

The University Library places the publication (a publisher or author version of the publication – immediately or after an embargo period) in the Radboud Repository of the university. If the publication was previously published by a traditional publisher, a link will be provided in the Repository to that publication. Scientific authors do not have to pay extra for this.

Via the 'golden route'

Authors publish their work via this route in journals, collections or monographs. Via this route, an article can be made available "open access" immediately upon publication. Often there are costs involved: so-called "article processing charges" (APCs). Most publishers now offer the option of publishing a scientific work in open access for a fee. In addition, there is also a large selection of fully open access journals (that do not offer a subscription form) in which one can publish. These are registered in the Directory of Open Access Journals (DOAJ).

Via the 'hybrid route'

A large number of journals offer the service of golden open access *in addition to* the traditional subscription system. These journals are also called "hybrid journals". For a large number of these hybrid journals, especially from the major publishers, Radboud University has an agreement under which Radboud scientists can publish in open access for free. Because in this way the publisher may receive money for the same publication via 2 routes, most funders and policymakers see this as an undesirable way of publishing in the long term - but necessary during the transition phase. That is why NWO does not reimburse the costs of such hybrid journals; publishing in these journals is also not funded under Plan S.

Via the 'Diamond route'

Via the Diamond route you can publish an article or book directly in open access. There are no costs involved, neither for the authors nor for the readers. The Radboud University Press of Radboud University makes the Diamond route possible.

6. Diversity and inclusivity

Who can participate in science?

- Hiring criteria
- Information about careers in science

Radboud University



Deutsch Nederlands

Search



Prospective students • Exchange students • Current Students • Staff • Alumni

HOME START EDUCATION RESEARCH NEWS & AGENDA WORKING AT ABOUT US

Radboud University > About us > Our university > Recognition & Rewards

A new system of recognition and rewards

Finding a new balance

With immense effort and dedication, you and your colleagues carry out research, teach and make your contribution to the work of Radboud University. In this way, you advance not only science and scholarship, but also students and society at large. And at Radboud university medical center, you also advance patient care.

We are in this together

'You have a part to play. This includes for the quality of your work (which is not easy to measure), for your collaboration with others,

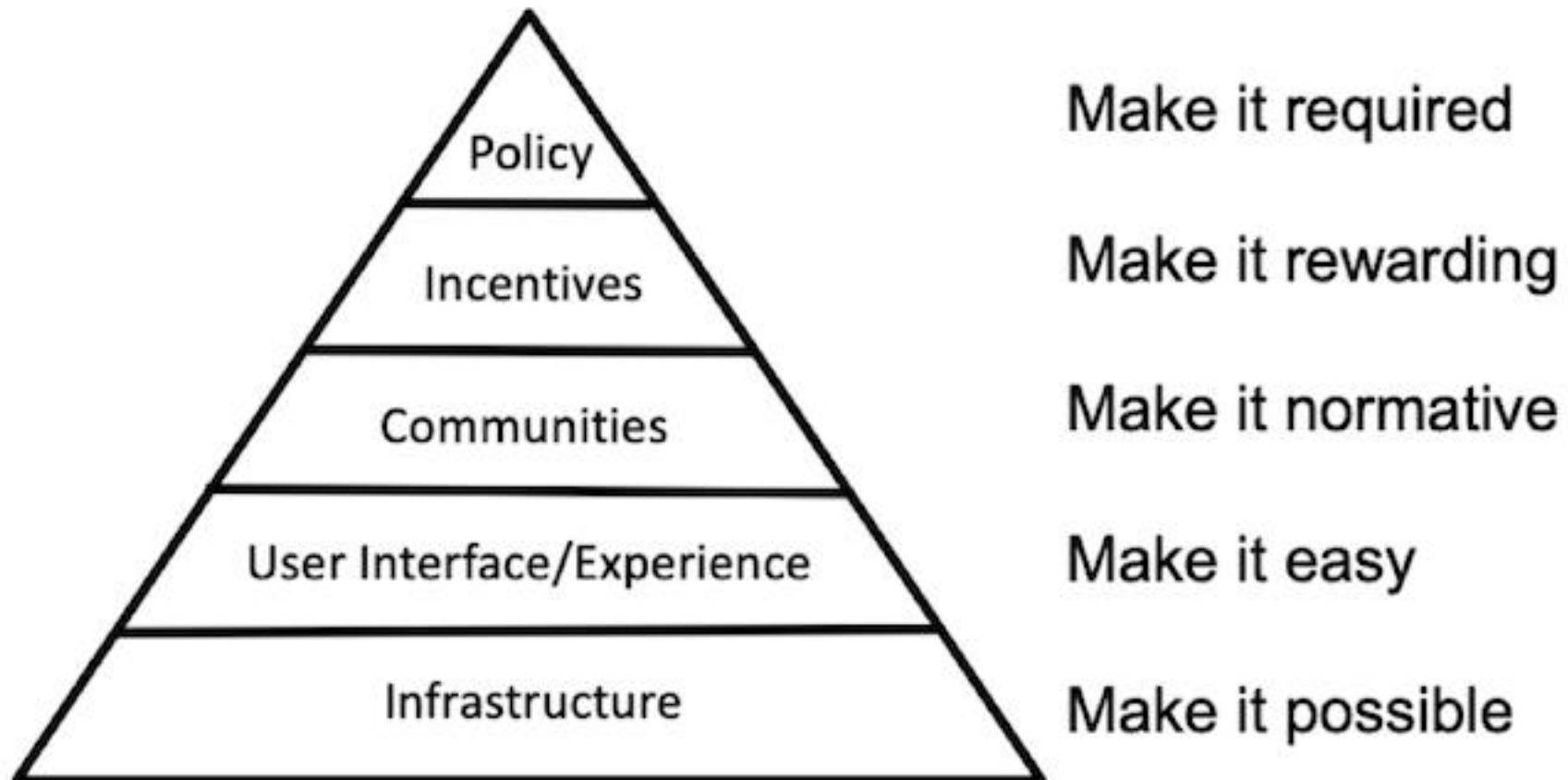
Who can participate in (scientific/ PhD) events?

- Costs
 - Who can afford participation?
 - How gets subsidies/ travel grants? How are travel grants communicated?
- Time
 - Attendees with other obligations (e.g., parents, medical doctors, different time zones)
- Location
 - Proximity to certain centers
- Language
 - Who can understand? Who can actively participate? Who can find information?

Open Science = Transparent Science

- Open Science is about **making information openly available to other people.**
- People might have no idea how valuable this information is to them.

Final words



Thanks for your attention!

