

GOSSIP

Registered Reports

An Introduction

Introduction



Myth 1:
„Preregistration and Registered
Reports are the same thing“

Preregistration

Elements of a preregistration

“The specification of a research design, hypotheses, and analysis plan prior to observing the outcomes of a study”

Nosek & Lindsay (2018)



www.cos.io/prereg

- Separates exploratory from confirmatory research
- Upload it to a registry (OSF, as.predicted, GitHub...)
- Time stamped and frozen (OSF = max. 4 years)
- No regulations/ restrictions
- But: Every little bit helps!



Elements of a preregistration

- Hypotheses
 - Main and interaction effects?
- Design
 - Between/ Within subjects? Predictors and outcomes?
- Planned sample
 - Size, power analysis, sample characteristics?
- Exclusion criteria
 - Outlier, missing data, demographics?
- Analysis plan
 - Relevant variables, statistical techniques, data transformation?
- Additional stuff
 - Exploratory analyses, code, conditional safeguards?



Even possible for
secondary data analyses,
qualitative research or
meta-analyses!

Preregistration templates

<https://osf.io/zab38/wiki/home/>



| Registration Forms | Description | Templates |
|---|---|---|
| OSF Prereg | 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 |
| AsPredicted Registration | 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): Pre-Registration | 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 |

A list of high quality preregistrations

<https://osf.io/e6auq/wiki/Example%20Preregistrations/>



Example preregistrations by discipline and study type
 (Search all publicly available registrations at OSF Registries)

| Preregistration | Discipline | Study_Design | Registration prior to... | Notes |
|--|------------------------------------|---------------------|-----------------------------------|--|
| Does Practicing Cognitive Reappraisal Enhance Impulse Inhibition during Subsequent Risk Taking? | Cognitive psychology | Experiment | creation of the data | Well-organized and clear. |
| Backwards letters P2E2 each frame a different orientation | Perceptual psychology | Experiment | any human observation of the data | Well-organized and great use of Bayesian inference with informed priors. |
| Hyperfocus in adult ADHD | Attention and Cognition | Observational study | creation of the data | Very thorough analyses. |
| Teaching about Research Practices and Reform in Psychology Courses | Social Psychology | Observational study | creation of the data | Well-organized and very thorough analyses. |
| The role of threat expectancy and detection importance in context dependent search priority for threat | Attention and Cognitive Psychology | Experiment | creation of the data | Very clear. Great use of Bayes and specification of priors. |
| Threat and agency detection 2; follow-up study | Religion Cognition and Behavior | Experiment | creation of the data | Very good example of a follow-up on a preregistered study |
| Assessing lateralization of speech generation using functional Transcranial Doppler sonography (fTCD): a comparison of word generation and sentence generation tasks | Neurology | Experiment | creation of data | Very good description of specific terms/concepts, good organization and clarity. |

Registered Reports

Registered Reports

Check out

www.osf.io/rr

What's that again?

- Empirical journal article
- Theoretical background, methods and proposed analyses peer-reviewed
 - Before research being conducted
 - „peer-reviewed preregistration“
 - More detailed/ precise than usual preregistrations



Registered Reports

Check out

www.osf.io/rr

- Protocols accepted (in principal)
 - Publication guaranteed if authors follow the protocol
 - Independent of results!
- Prevents most QRPs, HARKing, publication bias!
- Can the paper still be rejected at Stage 2?
 - Theoretically yes, but very unlikely (e.g. when authors don't follow the registered plan)



Registered Reports



- Get feedback on your study plan
 - Is my research idea worth investigating?
 - Are the methods feasible for investigating my research question?
 - Is my „preregistration“ precise enough?
- Get your study published – independent of results!
 - Research idea, methods and analyses matter!
 - Prevents publication bias, questionable research practices!
 - Changes the incentive structure!
- Often provide timeline for completion of the study
 - Helps to keep track / finish the study
- Possible to put Stage 1 Registered Report on publication list
 - Make your output visible!



„Preregis
Reports

Myth 1:



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thing“

Myth 2: „Preregistrations and Registered Reports restrict flexibility“

Restricted flexibility?

- True: Theory and methods part cannot be changed after IPA (in most journals)
- But: Isn't that a good thing? (prevents QRPs)
- **Preregistration and Registered Reports are not a prison**
 - Deviations and exploratory analyses are allowed
 - Just explain why! Best case: report both
 - Deviations and exploratory analyses can be added to/ explained in the results section
 - New literature can be discussed in the discussion section
 - Almost everybody deviates a bit (see new PsySci paper)



„Preregis
Report“

Myth 2:

at least
parts of it

registered
bility“



Myth 3:

„Only replication studies can be Registered Reports“

Registered Reports

Different formats possible:

- Replications and novel studies
- Wrong: „this cannot be a registered report, this study is not a replication study“
- Right: Non-replications/ new research ideas can also be registered reports!
- Also right: Secondary data analyses possible
- But 1: Depending on journal!!!
- But 2: Reviewers might not know (editors should!)



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„Only rep
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Myth 3:

at least
most of it

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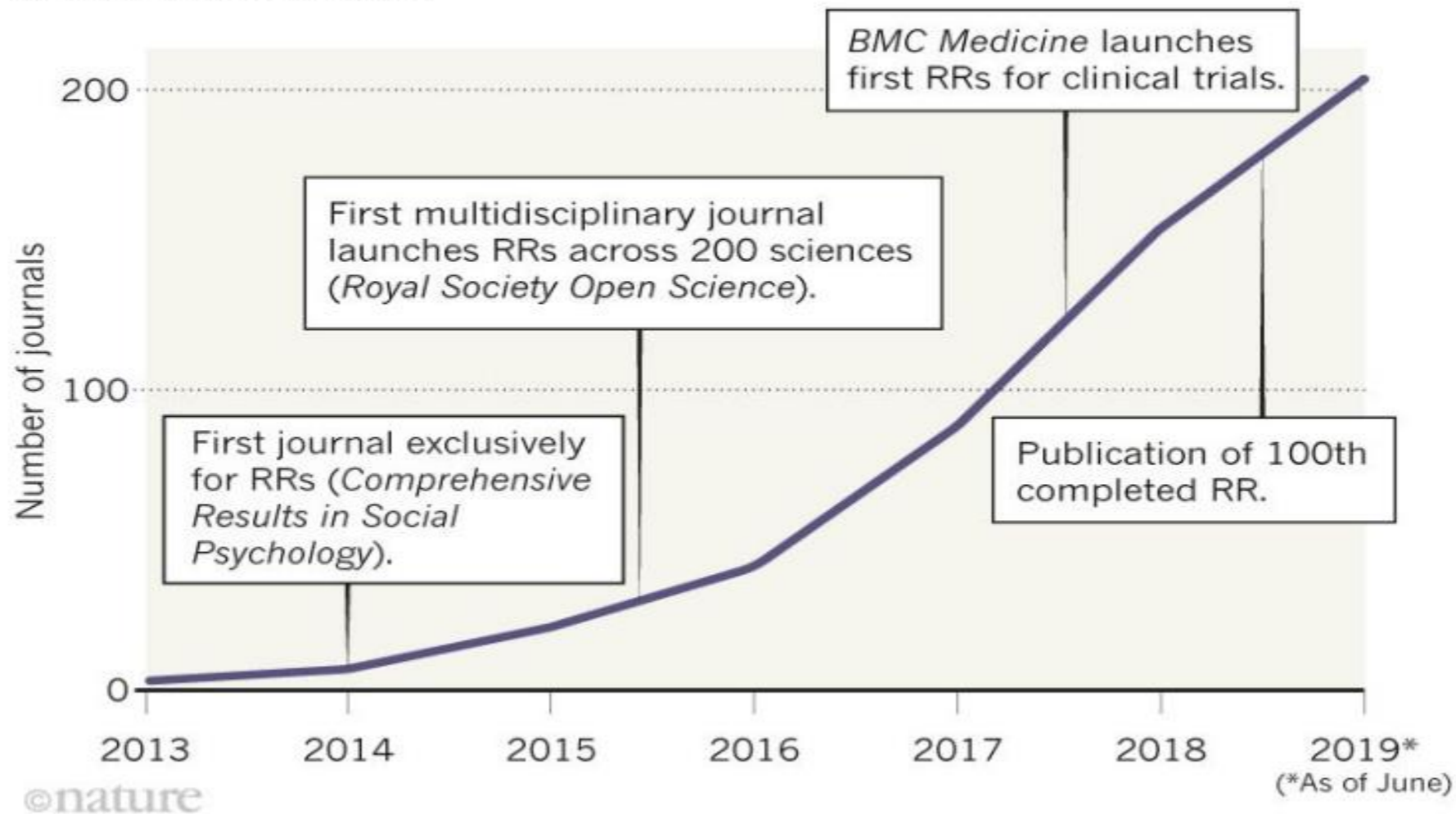
Myth 4:

„I cannot do Registered Reports
because there is no journal in my
field that accepts them“

Registered Reports

RAPID RISE

Since 2013, the number of journals offering Registered Reports (RRs) has risen to more than 200 titles.



Source: C. Chambers

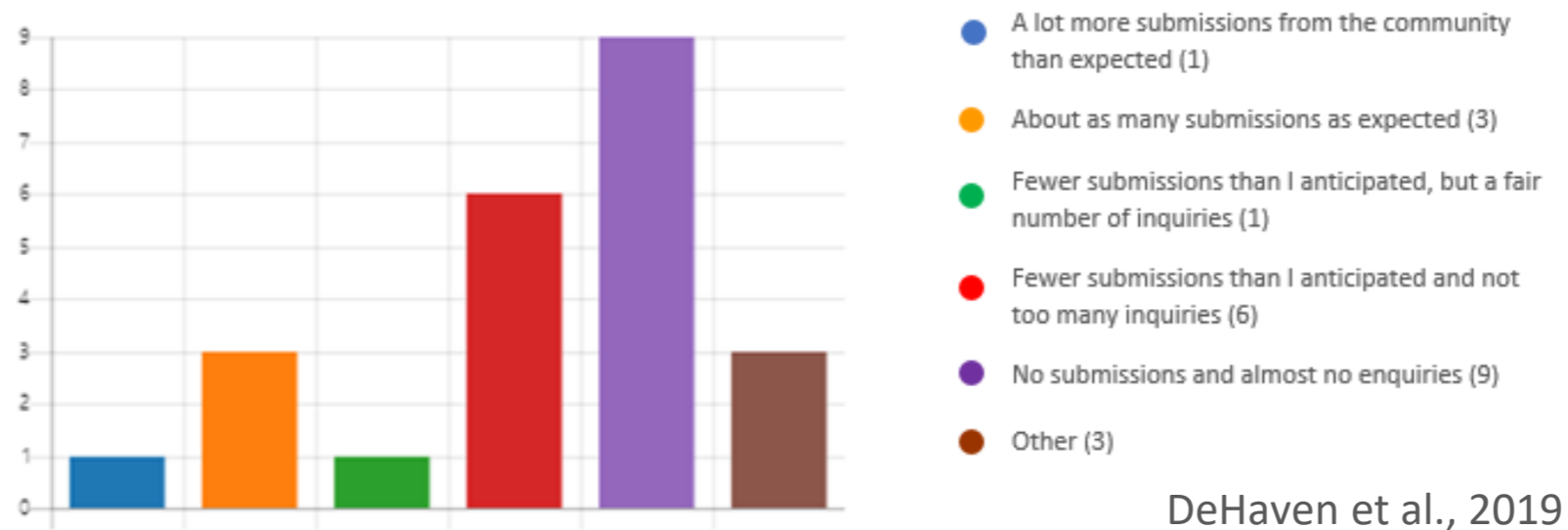
Registered Reports

- 211 scientific peer-reviewed journals currently accept registered reports (number increasing)
- Either as normal submissions or as part of special issues
- Some Registered Reports, some only Registered Replication Reports

→ Including:
(* = Registered Replication Reports only)

| Multidisciplinary | More specialized scope |
|---|---|
| Psychological Science* Journal of Personality and Social Psychology* | European Journal of Personality Journal of Research in Personality |
| Nature Human Behavior | Journal of Experimental Psychology: LMC Cognition and Emotion |
| Advances in Methods and Practices in Psychological Science | Judgment and Decision Making Journal of Experimental Social Psychology |
| Royal Society Open Science | Cortex Brain and Behavior |
| Frontiers in Psychology | Psychophysiology Journal of Neuropsychology |
| British Journal of Psychology | Developmental Science Journal of Child Language |
| Collabra | Psychology and Psychotherapy |

Registered Reports



- Not many Registered Reports submitted
 - Number is slowly increasing
 - Good chance to engage with it/ get published!
 - Call for papers / special issues

„I cannot
because t
field

Myth 4:



Reports
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Myth 5:
„I cannot do Registered Reports
because the process takes too
long“

Registered reports



- **Review process?**

- OSF: 9 weeks until final editorial decision on Stage 1 (on average), Stage 2 slightly faster (= faster than normal review processes?)
- Personal experience: More or less comparable to normal articles

- **Writing process?**

- Planning / designing study and analyses takes more time
- Writing is faster

- **Certainly not feasible for all projects, hard for:**

- Bachelor/ Master theses
- Completely exploratory or qualitative studies
- Some large scale longitudinal studies
- Large data collections involving multiple research ideas/ resulting in multiple papers



Chris Chambers ✓
@chrisdc77



Replying to @jidenteki_kioku and 2 others

In general I would say that if the student doesn't have time to wait 2-4 months before starting the research (usual Stage 1 review time), conduct the research, & resubmit the Stage 2 manuscript (w/ effectively 0% chance of rejection after IPA) then they probably don't have time>

„I cannot
because

Myth 5:

at least
most of it

Reports
takes too



FAQs

- **How high is the success/ acceptance rate?**

- Chris Chambers: „Much higher than for normal articles“
- Methodological flaws can be corrected before they occur (Stage 1)
- Cannot be rejected because of the importance of the results

- **Can't authors cheat and register a study they already did before?**

- Scientific fraud
- Highly unlikely with Registered Reports (what if the requested methods change during the Stage 1 review process?)

Check out

www.osf.io/rr



Typo:
Must be
100%



Chris Chambers
@chrisdc77

This chart is why I don't pay much attention to the argument that the Stage 1 review time for Registered Reports (2-4 mths) delays science -- keeping in mind that the @RegReports acceptance rate is ~90% at Stage 1 & ~0% at Stage 2

Takeaways

- **Registered reports are cool**
 - „Quality-checked preregistrations“
 - Publication independent of results
 - Constructive review processes
 - Lower rejection rate
 - Help you keep track / continue a project
 - A lot of journals that accept them
 - Even some funding agencies start to engage!



Discussion



Thank you!

