



Session 4

Pre-registration

Open Science Student Support Group

November 20, 2020

Presented by Brittany Lindsay & Emiko Muraki





- Mental Health Lab with Dr. Andrew Szeto
- Research on mental health and the stigma of mental illness and suicide behaviours
- Pre-registration is an expectation in my area and I am rather fond of it
- I like cooking, hiking, and hanging out with my little family

Brittany Lindsay | PhD student | she/her



- Language Processing Lab with Dr. Penny Pexman
- Research looks at the neural correlates of semantic information related to word processing
- I love animals and in my former life I was trained as an actor/director for the theatre



Emiko Muraki | PhD student | she/her





Poll:

Have you
pre-registered a
study?

What is pre-registration?

- The practice of specifying your research plan prior to actually conducting it (i.e., a public time-stamped record)
- Differentiates confirmatory from exploratory research
- You can register quantitative experiments, meta-analyses, pre-existing data, qualitative studies, etc.
- Typically includes:
 - Hypotheses
 - Sample size (with justification)
 - Measures and procedures
 - Planned analyses (including exclusion criteria)



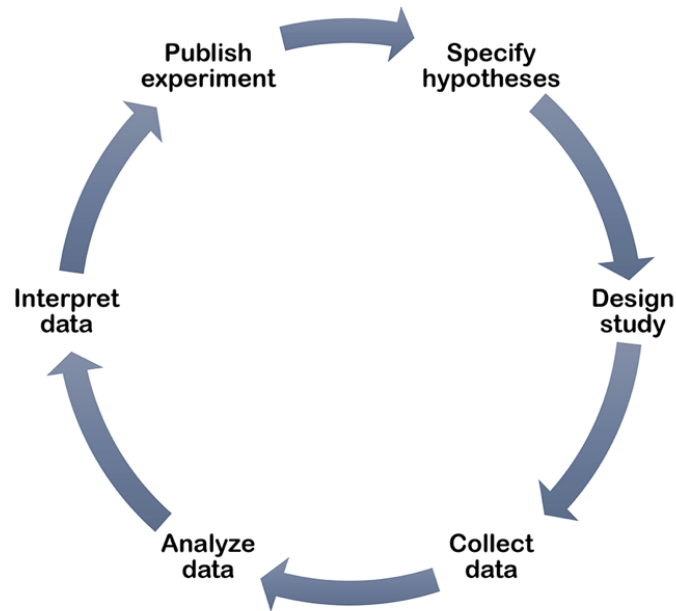
Why should we care?

It helps make research “better”, more credible, and more interpretable in the research community

- Improves the quality of research in the field
- Avoids researcher bias and issues regarding researcher degrees of freedom
- Can make it easier to publish null findings
- Helps eliminate a variety of questionable research practices



Questionable Research Practices & the Scientific Method



So how do I pre-register?

Standardized Pre-registration

- Independent of the publishing process
- Posted on public websites:
 - [AsPredicted](#) → Simple process best suited for experimental designs
 - [Open Science Framework](#) → Very versatile for a variety of projects
 - [Prospero](#) → Systematic reviews of health related research
 - [Clinicaltrials.gov](#) and [ISRCTN registry](#) → Specific for clinical trials

(COS, 2020)



So how do I pre-register?

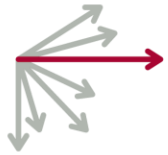
Registered Reports

- Process is specific to your journal of choice
- Used by hundreds of journals
- Includes registered replication reports
- Can get your research provisionally accepted for publication prior to completing it
- Is time consuming and less popular than standardized pre-registration, but has many advantages!



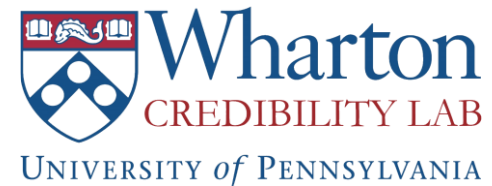
(COS, 2020)





AS PREDICTED

- Standardized pre-registration that requires ONLY what is necessary
- Set up for experimental designs
 - Does have a section for secondary/exploratory analyses
- Only 9 questions (1-2 pages)
- All authors are included
- Private unless you decide otherwise
 - No specific embargo date needed





- Start a new pre-registration or link to an existing OSF project
- Select a pre-registration form
- Enter your meta-data and research plan in the form fields
- Make it public or embargo it
- After submission the pre-registration will be complete
 - When all admins on OSF project approve OR
 - 48 hours after submission





OSF Forms

- OSF Preregistration
- Open-ended Registration
- OSF-Standard Pre-Data Collection Registration

Specialized Forms

- Preregistration Template from AsPredicted.org
- Replication Recipe
- Pre-Registration in Social Psychology
- Qualitative Preregistration

Registered Reports

- Registered Report Protocol Preregistration





The Benefits



Creates a clear plan for your study

- Forces thoughtfulness which leads to better study design

Documents important decisions and analysis plans

- Memory is fallible and studies can stretch over a long period
- Analysis is easier to conduct when following a plan

Allows you to take credit for your hypotheses

- This is the ultimate "I told you so"

Protects you from criticism

- Prevents CARKing (Critiquing After Results are Known)



Receive Open Science Badges!



- A public, date-time stamped registration
- Registration pre-dates the intervention
- Registration design corresponds directly to reported design

OR



- Registered design and analysis plan corresponds directly to reported design and analysis
- Full disclosure of results in accordance with the registered plan





Concerns & Barriers



1. What if things don't go according to plan?

- Researchers aren't expected to be prescient
- You aren't bound to only do what you pre-registered
- The point of pre-registration is to clarify the difference between confirmatory and exploratory research
- Just ensure you are maintaining transparency in reporting what deviated from your pre-registered plan



2. What if I need to change my pre-registration?

- Pre-registrations cannot be edited, but you can create a new pre-registration for your study
- The old pre-registration should be withdrawn and explain why you are withdrawing, with a link to the new pre-registration
- You can also document changes (try the Transparent Changes template) and refer to these changes when you report your study



3. What if my research idea gets "scooped"?

- Pre-registrations can be embargoed/private (up to four years on OSF)
- Pre-registrations also give you a time-stamped record of when you began a line of inquiry
 - You can also search OSF before starting your study to see if there are other groups working on the same research question or using the same methods
- If you are worried about being scooped, use other open science practices like pre-prints to minimize your risk



We challenge you to:

Learn more about it!

Read, listen, or watch one or more of the resources provided in this session.

Explore your area with regard to pre-registration.

Try it out!

Explore the platform of your choice.

Try filling out a template for a current study you are working on to discover challenges that might arise for you.

Talk about it!

Discuss pre-registration with your supervisor or other colleagues.

Find a colleague who has pre-registered a study and chat with them about their experiences.

Implement it!

Complete a pre-registration form for your next study and consider whether you want to formally submit it.

Choose a future study and commit to pre-register it.



Resources

The Centre for Open Science has so many great resources to explore!

- For additional resources and FAQ about [pre-registration](#)
- [Interesting article](#): Preregistration: A plan, Not a Prison (DeHaven, 2017)
- [PowerPoint](#) presentation on pre-registration
- For additional resources for [registered reports](#) and a list of participating journals
- [YouTube video](#) "Registered Reports for Early Career Researchers" by COS
- The [Preregistration Challenge](#) OSF project has a number of useful files and resources

Other resources:

- Society for Personality and Social Psychology (SPSP) Experts talk about Open Science:
 - Six shorter [videos](#) (5 – 8 min) on a variety of topics
 - Video #2 is Preregistration and Registered Reports by Dr. Daniel J. Simons (~ 8 min)
- A detailed spreadsheet of journals offering registered reports [here!](#)
- [A quick read](#): Seven Selfish Reasons for Preregistration (Wagenmaers & Dutilh, 2016)
- [YouTube video](#) "Introduction to Pre-Registration" by Berkeley Initiative for Transparency in the Social Sciences (BITSS): looks at American Economics Association Registry
- A guide to developing [Standard Operating Procedures](#)
- [Research Pre-registration 101](#) – A blog post, FAQ and resource list from the Association for Psychological Science

Brittany's
pick!



References

Center for Open Science (2020a). Future-proof your research. Preregister your next study. <https://www.cos.io/initiatives/prereg>

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Thank you!

