Research Workflow Management

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2018/12/11 (updated: 2018-12-11)
We have a problem

To briefly sum up:
We have a problem

To briefly sum up:

- Questionable Research Practices
We have a problem

To briefly sum up:

- Questionable Research Practices
- Publication Bias
We have a problem

To briefly sum up:

- Questionable Research Practices
- Publication Bias
- Reproducibility Problems
Only Psychology?
Only Psychology?

These problems are not unique to psychology,
Only Psychology?

These problems are not unique to psychology, in fact, problems seem to be ubiquitous.
Only Psychology?

These problems are not unique to psychology, in fact, problems seem to be ubiquitous. But psychology has been dealing with the problems.
Solutions

How have we been resolving this?
Solutions

How have we been resolving this?

- Sharing code, data, and materials
Solutions

How have we been resolving this?

- Sharing code, data, and materials
- Separating Exploratory and Confirmatory Research
Solutions

How have we been resolving this?

- Sharing code, data, and materials
- Separating Exploratory and Confirmatory Research
- Building in accuracy checks
That seems like a lot of work. Why Bother?
Challenges

The challenges are often about:
Challenges

The challenges are often about:

- Technology
Challenges

The challenges are often about:

- Technology
- Habits
Challenges

The challenges are often about:

- Technology
- Habits
- Continuous Development
Our Approaches

How have we been resolving this?
Our Approaches

How have we been resolving this?

- Local level (Lab): Workflow/Lab Philosophy
Our Approaches

How have we been resolving this?

- Local level (Lab): Workflow/Lab Philosophy
- Teaching open practices
Our Approaches

How have we been resolving this?

- Local level (Lab): Workflow/Lab Philosophy
- Teaching open practices
- Yearly workflow updates
Workflow/Lab Philosophy
Co-Regulation (CORE) Lab.
We study co-regulation in romantic relationships. We study social thermoregulation. We rely on open science ideals. We collaborate with researchers around the world, but are located at the Université Grenoble Alpes.
Research Workflow

Hosted at the Open Science Framework (www.osf.io)
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Research Workflow

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Research Workflow

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- Allows (local) data-sharing
Research Workflow

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- Allows (local) data-sharing
- Allows separation exploratory and confirmatory research
Research Workflow

Hosted at the Open Science Framework (www.osf.io)

- Allows (local) data-sharing
- Allows separation exploratory and confirmatory research
- Allows easy collaboration (e.g., ManyLabs 1, 2)
CO-RE Lab Workspace

Contributors: Hans Jermian, Richard A Klein, Lisan Neyroud

Date created: 2017-11-17 09:26 AM | Last Updated: 2018-10-02 01:53 PM

Description: This OSF page is the homepage for researchers working in the CO-RE lab. You can find the necessary tools to build your project in this page. The place to start is with the Research Milestones Sheet (RMS). Once you have started the RMS, please start a new OSF project by using the Research Template for Exploratory or Confirmatory Studies.

Citation

Components

- Research Template to Start New Project (Exploratory)
  - Jermian, Klein & Neyroud
  - This template is intended to guide researchers in the CO-RE lab to run exploratory studies. Please use this template alongside the Research Milestone...

- Research Template to Start New Project (Confirmatory)
  - Jermian, Klein, Neyroud & 3 more
  - This template is intended to guide researchers in the CO-RE lab to run confirmatory studies. Please use this template alongside the Research Milestones.

Tags

Recent Activity

- Richard A. Klein added tag contributor to CO-RE Lab Workspace
- Richard A. Klein removed tag contributor from CO-RE Lab Workspace
- Richard A. Klein added tag contributor to CO-RE Lab Workspace
Workspace at https://osf.io/q29nf/.

This OSF page is the homepage for researchers working in the CO-RE lab. You can find the necessary tools to build up your project in this page. The place to start is with the Research Milestones Sheet (RMS). Once you have started the RMS, please start a new OSF project by using the Research Template for Exploratory or Confirmatory Studies.

This template is intended to guide researchers in the CO-RE lab to run confirmatory studies. Please use this template alongside the Research Milestones.
Feel free to fork and use our work.
This OSF page is the homepage for researchers working in the CO-RE lab. You can find the necessary tools to build up your project in this page. The place to start is with the Research Milestones Sheet (RMS). Once you have started the RMS, please start a new OSF project by using the Research Template for Exploratory or Confirmatory Studies.

**Components**

- [Research Template to Start New Project (Exploratory)]
- [Research Template to Start New Project (Confirmatory)]

**Tags**

- correlatot
- workflow
- Add a tag

**Recent Activity**

- Richard A. Klein added tag correlatot to CO-RE Lab Workspace
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Research Template to Start New Project (Confirmatory)

Contributors: Hans IJzerman, Richard A. Klein, Lison Neyroud, Subati Tiffany, Zoë Laskner, Barbosa Vivian
Date created: 2014-07-28 04:33 PM | Last Updated: 2018-10-09 02:41 PM
Category: Project

Description: This template is intended to guide researchers in the CO-RE lab to run confirmatory studies. Please use this template alongside the Research Miles sheet.

Please DON'T change this page, but copy the page into a new project.

Organisation of Project
Research Template to Start New Project (Confirmatory)

Contributors: Hans IJzerman, Richard A. Klein, Lisbon Neyroud, Subati Tiffany, Zoë Lackner, Barbosa Vivian
Date created: 2014-07-28 04:33 PM | Last Updated: 2018-10-09 02:41 PM
Category: Project
Description: This template is intended to guide researchers in the CO-RE lab to run confirmatory studies. Please use this template alongside the Research Milestones sheet.

Please DON'T change this page, but copy the page into a new project.

Components

- Study Rationale + Hypotheses (Before registration)
  IJzerman, Klein, Neyroud & 3 more
- Methods, Procedures, Scales (Before registration)
  IJzerman, Klein, Neyroud & 3 more
- Power Calculation (Before registration)
  IJzerman, Klein, Neyroud & 3 more
- Data Analytic Plan (Before registration)
  IJzerman, Klein, Neyroud & 3 more
- Data (After data collection)
  IJzerman, Klein, Neyroud & 3 more
- Analytic Code (After data collection)
  IJzerman, Klein, Neyroud & 3 more
- Explanation of Auxiliary/Exploratory Analyses (After data collection)
  IJzerman, Klein, Neyroud & 3 more
This is the workflow for running a confirmatory study. Be sure to follow the extra steps in the Research Milestones Sheet to pre-register your study prior to data collection. Follow these steps, using the existing components for organization:

- Fork the research template into a new project.
- Name your project.
- Add your co-authors on this page (in the order that they will likely appear on the paper)
  - We want all our data to be stored in the EU. In order to do so, go to the arrow next to your profile name in the upper right corner. Then go to “Settings” there. When you are in "Settings" go to “Account Settings”. Put your “Default Storage Location” to “Frankfurt, Germany”.
- Fill in the name of the project, the order of authors, and the link to your new OSF project page in the Research Milestones Sheet (RMS).
- Decide whether you will make the OSF page public at this time (the default initially is no, but in certain cases, it can be yes).
- Review the literature and write the review. Develop your hypothesis and put them on the OSF page (link to page in RMS).
- Do your power calculation (NB: given the existing publication bias in the literature, one could argue you should do power calculation. The wisest approach is likely to take the smallest effect size of interest). (Link to completed)
- Complete your proposed methods and include all materials needed (Link to completed).
- Write your syntax (SPSS, R, or other software program) and post on OSF (link to page in RMS). Preferably use simulated data to see if the code works.
- Complete your ethics application if needed (in consultation with the lab’s PI).

**Pre-register your study. By default, keep private unless otherwise decided (link to page in RMS).**

- Before running study, double-check pre-registration. If you made a mistake before data collection, fork project and explain mistake (if so, link to fork in RMS. Pre-register project again).
- After data collection, de-identify data so that participants cannot be recognized. If page/data will be made public, verify deidentification with PI. (link to page in RMS)
- Post analytic code written after data collection (link to page in RMS).
- Describe verbally on OSF which analyses were done separate from pre-registration (auxiliary/exploratory analyses; link to page in RMS).
- Let data, code, and OSF page be checked by an independent researcher. Researcher should be able to use script to go from raw data to final results, and verify numbers in manuscript. Researcher should also verify deidentification. The independent researcher should be added to the OSF page and as second to last co-author on paper. Indicate completion on the RMS.
- Run your manuscript through a Plagiarism Checker (e.g., https://plagiarismcheckerx.com/).
- Post your completed RMS to the OSF page.
- Post paper to a pre-print server after submitting paper to a journal (preferably PsyArxiv, so you can directly link to this project page).
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Teaching open practices
Research Tools in Social Cognition

Instructor: Dr. Hans IJzerman  
E-mail: hans.ijzerman@univ-grenoble-alpes.fr  
Office: D202 (BSHM)

Objectives
This course is designed to provide you with the tools to conduct more precise, accurate, and solid studies in social cognition that matter. You may be well aware that psychology has faced a reproducibility crisis. This course will offer you tools to better cope with this crisis. Because I strongly feel that the tools need to go hand in hand with theory, the research approaches discussed in this course will be equally used to help us understand well-suited for the methods we discuss. The main purpose of this course is for you to get a better sense of research approaches in social cognition. By nature of the design of this course (and due to time constraints), we will only be able to sample a limited amount of methods, so I will try to give you what I feel are some of the most important tools for you to utilize during your research career.

Contents
We will start discussing the reproducibility crisis. Following this, will focus on how to increase the level of precision for your research, while at the same time supporting you in drawing better inferences from your data. In so doing, we will discuss why it is important to distinguish exploratory and confirmatory psychological science, discuss how to engage in these different approaches to your data, learn how to pre-register a study, and set up a plan for you to share your materials (including the assessment of different methods to share research data and materials). Finally, we will also take a brief dive into methods that can help you explore your data in systematic ways.
Workshop Goal
To provide hands-on training in open science, topics discussed during the workshop include exploratory social psychological science (e.g., deep learning), confirmatory social psychological science (i.e., pre-registration), and other aspects of establishing a reproducible workflow. The workshop is primarily aimed at providing training to researchers with fewer financial resources.

Conference Hashtag: #SolidBordeaux2018

Content Specifics
The last few years have seen psychology in a crisis ranging from authorship fraud (e.g., Stapel) to considerable concerns about reproducibility (e.g., Open Science Collaboration, 2015). Yet, few in the discipline have attempted to address the underlying business model that has driven this. The switch to more solid science is not easy. This workshop therefore deals with the following issues:

- Teaching the importance of understanding research materials and data, pre-registration, and separating exploratory from confirmatory analyses.
- Helping researchers integrate new habits into undergraduate teaching (Fréke Wagemans).
- Initiating or participating in crowd-sourced research (Ben Jones).

We will also discuss the changes to the new EU data security laws and how psychologists can prepare for these changes. The workshop will also have a special focus on how to reduce the costs of open science for the researchers, while at the same time gather resources to be able to meet the challenges of the Revolution 2.0 (Spelman, 2015). The workshop is co-organized by the Université de Bordeaux and Université Grenoble Alpes and is supported by EASP.

Participant Specifics
The workshop is primarily aimed at researchers with fewer financial resources. First preference will be given in access to the workshop to researchers from the European Union whose residence country spends less on research and development per capita. Second preference will be given to EU researchers without any active research grants. At least 50% (and likely more) of the workshop participants will be EASP members.

Presenters:
- **Frederik Aust** (University of Cologne): A practical primer on transparent research workflows
- **Marco Perugini** (Università degli Studi di Milano-Bicocca): A practical primer to power analysis
- **Michèle Madjar** (Tilburg University): Open source & open science software
- **Fréke Wagemans** (Universiteit Delft/Dublin): Teaching open science: The CREP
- **Rick Klein** (Université Grenoble Alpes): Exploratory social science: Getting the most out of your data, and an introduction to concepts in Deep Learning and cross-validation
- **Kai Jones** (Maastricht University): Pre-registration in psychological science (and how to fund it)
- **Ben Jones** (University of Glasgow): Crowdsourcing psychological science: The Psychological Science Accelerator
Workshop Goal

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Conference HashTag: #SOLIDBordeaux2018

Content Specific

The last few years have seen social psychology come to crisis, ranging from ethical issues (e.g., Stoppelman, 2016) to concerns about reproducibility (e.g., Open Science Collaboration, 2015). The social psychology community are aiming to improve open science practices, collaboration, and transparency. This workshop will focus on these three main areas, which are: (1) Open science and sharing data, (2) Pre-registration and open meta-analyses, and (3) Crowdsourcing scientific research. We will also discuss the changes to the new EU data security laws and how psychologists can prepare for these changes. The workshop will also have a special focus on how to reduce the costs of open science for the researchers, while at the same time gather resources to be able to meet the challenges of the Open Science Revolution 2.0 (Spelke, 2015). The workshop is co-organized by the Université de Bordeaux and Université Grenoble Alpes and is supported by EASP.

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Presenters

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- [Michèle Madjari](https://osf.io/gvkxn) (Tilburg University): Open source & open science software
- [Nick Wagner](https://osf.io/gvkxn) (Universität Düsseldorf): Teaching open science: The CREP
- [Rick Klein](https://osf.io/gvkxn) (Université Grenoble Alpes): Exploratory social science: Getting the most out of your data, and an introduction to concepts in Deep Learning and cross-validation
- [Kai Jones](https://osf.io/gvkxn) (Maastricht University): Pre-registration in psychological science (and how to fund it)
- [Ben Jones](https://osf.io/gvkxn) (University of Glasgow): Crowdsourcing psychological science: The Psychological Science Accelerator
Replication Education
Collaborative Replications and Education Project (CREP)

Contributors: Jon Grahe, Mark Brandt, Jordan Waggie, Nicole Legate, Bradford J. Wiggins, Cody D. Christopherson, Yanna Weisberg, Katherine S. Corkey, Christopher R. Charlier, Marianne Fallon, Lea Hildebrandt, Michelle Hunt, Lili Lazarevic, Carmel Levitan, Joseph McFall, Heidi A. Laughlin, Adam Padula, Crystal Stettenpohl, Hans Utermann, Brian A. Nisik, Cong Peng, Hak Gervais, Kaylis Hose, Taylor Peck, Megan Raddatz, David Redman, Chad Schaeffer, Tiuna Wamba, Cristina Barbu, Sara LePine

Date created: 2013-05-30 04:56 PM | Last Updated: 2018-10-26 04:47 PM
Identifiers: DOI 10.17650/OSF.IO/9FWGU | ARK 75095/014474456
Category: Project

Description: This is a replication project where students are encouraged to conduct replications as part of their courses.

Citation

- CREP Research Certificate
  Grahe, Brandt, Waggie & 10 more
- Instructions to Contributors
  Grahe, Brandt, Waggie & 13 more
- CREP Researchers, Findings, and Data
  Grahe, Brandt, Waggie & 3 more
  THIS PAGE IS CURRENTLY NOT UP TO DATE! Please contact us if you are interested in findings for a meta-analysis as this page includes a list of our projects...
- Instructors: What Can You Do with a Replication?
  Brandt, Grahe, Waggie & 9 more
- FAQs—Instructions and Workflow Procedure Guidelines here
  Grahe, Brandt, Wamba & 12 more
Collaborative Replications and Education Project (CREP)

Contributors: Jon Grahe, Mark Brandt, Jordan Wagge, Nicole Legate, Bradford J. Wiggins, Cody D. Christopherson, Yvonne Weisberg, Katherine S. Corrie, Christopher R. Charlier, Marianne Falon, Lee Hildebrandt, Michelle Hunt, Lili Lazarevic, Carmel Levitan, Joseph McFall, Heidi W. Laughlin, Adam Patala, Crystal Stettenpohl, Hans Sperman, Brian A. Nosyk, Cong Peng, Hale Gervais, Kaylis Nise, Taylor Peck, Megan Raddatz, David Redman, Chad Schaeffer, Tiana Wamba, Cristina Baciu, Sara LePine

Date created: 2013-05-30 04:56 PM | Last Updated: 2018-10-26 04:47 PM

Identifiers: DOI 10.17605/OSF.IO/WFC6U | ARK 73905/sx44m6u

Category: Project

Description: This is a replication project where students are encouraged to conduct replications as part of their courses.

CREP: https://osf.io/wfc6u/
Yearly workflow updates
Thanks!

Slides created via the R package xaringan.
You can reach us at www.corelab.io.
E-mail: hans.ijzerman@univ-grenoble-alpes.fr -- Twitter: @hansijzerman