HKU Registered Reports challenge

Promoting, supporting, and incentivizing open-science high-rigor publishable science with students

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Open-science talks: All on YouTube

https://www.youtube.com/playlist?list=PLRAF6P3V1K4dvKagI6-dzyxoniIDwP7R
Main points

Student power

• Students can do science work meeting the highest standards.
• Students can get published in top journals.
• Students are key to the science-reform movement.
• We can and should be publishing with students.

Promoting high-integrity open-science

• Registered Reports as a revolution in science
• Registered Reports as good for your career
Let’s start from the bottom line: What is the…

HKU Registered Reports challenge
Open science is a cultural change

Preregistration Challenge

Receive your $1000 prize!

The 1,000 prizes will be awarded across 4 award dates. If more eligible articles are submitted than available awards during that award period, then the eligible articles will be ranked by Preregistration date with earlier registrations being awarded first. Non-awarded entries will remain in the eligible pool for the next award date:

- July 1, 2017: up to 100 Prizes
- January 1, 2018: up to 100 Prizes
- July 1, 2018: up to 250 Prizes
- December 31, 2018: All remaining Prizes
First time trying out pre-registrations back in 2017...

Pre-registered replication published in *Cognition & Emotion*:

The impact of past behaviour normality on regret: replication and extension of three experiments of the exceptionality effect

Lucas Kutscher\textsuperscript{a} and Gilad Feldman \textsuperscript{a,b}

\textsuperscript{a}Department of Work and Social Psychology, Maastricht University, Maastricht, the Netherlands; \textsuperscript{b}Department of Psychology, University of Hong Kong, Hong Kong SAR, China

OSF: https://osf.io/fnmk4/
And we received the award:

Preregistration Challenge Prize Form
Congratulations on the successful publication of your preregistered research! You are going to receive a $1,000 prize as part of the Prereg Challenge. Before we can get you your money, we

Thousands participated. I’ve personally never looked back since. All work I do includes a pre-registration, and been improving over the years.
"HKU Registered Reports challenge"

Funding 8000HK$ online data collection for 30 students co-authored open-science Registered Reports in social-psychology/JDM that received in-principle acceptance.
Fine-print details

- **Type of project:**
  Must be a **Registered Report**

- **How to receive this funding support?**
  Registered Report must receive **in-principle acceptance from a journal/community.**

- **Student co-authored submissions:**
  **Students must be co-authors** and actively involved with major contribution.

- **Open science**
  Yes, 100% open-science. Commitment to **sharing all materials, anonymized datasets, and code** on OSF publicly permanently.

Slides: [https://mgto.org/2022cetl](https://mgto.org/2022cetl)
Fine-print details

• Domains:
  Social psychology, personality, and/or judgment and decision-making

• Data collection sample:
  Online, using Qualtrics on Amazon Mechanical Turk and/or Prolific.

• How much funding:
  8000HK$ online data collection.
  Should cover 5 min experiments with 1000 participants.

• How many:
  30. First come first served.

• Funding how?
  Data collection, conducted by me. No direct access to funding.
Fine-print details: Process

Doing the Registered Reports
• I'll guide you, our team can support you.
• **Use our templates:**
  – Main manuscript: [https://mgto.org/RRmanuscripttemplate](https://mgto.org/RRmanuscripttemplate)
  – Supplementary: [https://mgto.org/RRsupplementarytemplate](https://mgto.org/RRsupplementarytemplate)
• Use our many guides: [https://mgto.org/resources/](https://mgto.org/resources/)

Authorship:
• Can submit on your own, or join us/me.
• Students must be coauthors, preferably lead, and involved throughout.
• **All contributions acknowledged** with CRedit contributorship and credited with authorship.

• Before submission:
  – Contact me: Gilad Feldman ([giladfel@gmail.com](mailto:giladfel@gmail.com))
  – Check with me you meet all the criteria and know how to proceed.
• After in-principle acceptance:
  – I conduct data collection. You send your completed pre-registration, in-principle acceptance, and a Qualtrics link, and you receive a dataset collected with the funding.
Claim #1: Student power

Students can do high-quality publishable science
Students are our most underappreciated underutilized stakeholder
Students are the key to the ongoing science reform
After 4 years: Projects completed by HKU students

80 pre-registered replication + extensions projects

Ongoing: 30 Registered Report Stage 1 replications and extensions

~80000 participants recruited on MTurk/Prolific and Hong Kong undergrads.
~80000US$ spent (~1US$ per participant).
Okay, you did some research with UG/MA students.

Still…

Is this high-quality?
Is this publishable?
~75 Early Career Researchers from around the world

~36 guided thesis students

Our Open-Science Team

~370 course taught undergraduates
Example: 2021 Publications (all authors are students and ECRs!)

(*: equal contribution; underlined: supervised students; ^: corresponding author; italic: invited ECR)


March 2022: Publications (all authors are students and ECRs!)

*: equal contribution; underlined: supervised students; ^: corresponding author; italic: invited ECR


Registered Report Publications (all authors are students and ECRs!)

Of those, currently, the only published Registered Report:


But I have conducted other Registered Reports that are not with HKU students.
Registered Reports: Many in process (all authors are students and ECRs!)

(*: equal contribution; underlined: supervised students; ^: corresponding author; italic: invited ECR)


10. Frank, J., & ^Feldman, G. Revisiting and updating the risk-benefits link: Replication of Fischhoff et al. (1978) with extensions examining pandemic related factors. [Preprint] [OSF]

11. Li, M., & ^Feldman, G. Revisiting diversification bias and partition dependence: Replication and extensions of Fox, Ratner, and Lieb (2005) Studies 1, 2, and 5. [Preprint] [OSF]


After 4 years: Projects completed by HKU students

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~80000US$ spent (~1US$ per participant).

Successful: 55 (68%)
Mixed/Inconclusive: 10 (13%)
Unsuccessful: 15 (19%)
What does this look like?

I will show you a real live example of a student led Registered Report after I explain Registered Reports

Bear with me
Invitation to examine our RRSI reports (2021)

https://mgto.org/hkuprojects2021

I. Detailed Replications and extensions Registered Report with analysis plan on simulated dataset.
Invitation to examine our RRSI reports (2020)

https://mgto.org/hkuprojects2020

1. Detailed Replications and extensions Registered Report with analysis plan on simulated dataset.
2. Open-science Primers/guides
Invitation to examine our completed reports (2019)

http://mgto.org/hkureplications2019

Detailed pre-registrations with analysis plan on simulated dataset.
Terrific APA submission ready writeups.
Comprehensive open-science supplementary files.

Completed pre-registered replications and extensions
Testimonials: Students & open-science

Social Psychological and Personality Science

Replication and Extension of Alicke (1985) Better-Than-Average Effect for Desirable and Controllable Traits

Nadia Adelina talk
UG student

Cora Mok talk
MSc student

Revisiting the Better-Than-Average Effect: Replication and Extension of Alicke (1985)

Research article


Authors: Nadia Adelina, Gilad Feldman

Slides: https://mgto.org/2022cetl
Testimonials: Students & open-science


Replicating Distinction Bias: Joint vs. Separate Evaluations

Our journey in open science, replicating a classic phenomenon in decision-making

Posted Feb 22, 2021

Student perspective

This post was written by Wing Yiu Hung, who completed her undergraduate thesis under the supervision of Gilad Feldman with the Department of Psychology at the University of Hong Kong. She completed a replication and extension of Hsee and Zhang’s (2004) Distinction Bias. Below, she shares her experiences in conducting a replication study and some of her findings and insights. Gilad Feldman edited this post for Psychology Today.

Reanna Hung

Psychology Today Blog: Psychology's Credibility Revolution

Collaboration and open science in social psychology and judgement and decision-making

Slides: https://mgto.org/2022cetl
Sharing: All materials on OSF and YouTube

OSF: https://osf.io/cyvtb/

YouTube: https://www.youtube.com/c/GiladFeldmanScience/playlists
(long version) Our team: Replications + Meta-Science

https://www.youtube.com/watch?v=uNQXsEaeEyY
Our team: Open Science + Meta-Research

https://youtu.be/amDqGfLMvIY?t=294

Towards collaborative “credibility revolution” open-science and meta-research

ECR and student led large-scale project: Process, insights, findings, and an invitation to join.

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Mailing list: http://mgto.org/giladmailinglist

ECR and student led large-scale open-science project | Oxford ReproducibiliTea | Gilad Feldman

Slides: https://mgto.org/feldman2021oxford
Claim #2: Registered Reports are the future of science

There is an urgent need for a science reform
Registered Reports improve many aspects of science
Registered Reports are win-win, good for science, good for researchers
Registered Reports

Credits:
Many slides adopted from Chris Chambers
A paradox

Which part of a research study do you believe should be beyond your control as a scientist?

The results

Which part of a research study do you believe is most important for advancing your career?

The results
Which part of a research study do you believe should be beyond your control as a scientist?

Which part of a research study do you believe is most important for advancing your career?

Don’t touch THIS

The results

But make sure THIS is amazing

The results
Results-driven culture distorts incentives

What’s best for science

High quality research, published regardless of outcome

What’s best for scientists

Producing a lot of “great results”


Slides: https://mgto.org/2022cetl
What happens when we put researchers under pressure to get “great results”?

- Publication bias
- Lack of data sharing
- Selective reporting
- Lack of replication
- Low statistical power
- Design study

Generate and specify hypotheses
Collect data
Analyse data & test hypotheses
Interpret data
Publish or conduct next experiment

Changing the hypothesis

- ~92% positive
  Fanelli (2010)
- ~70% failure
  Wicherts et al (2006)
- ~50-90% prevalence
  Kerr (1998)
- ~50-100% prevalence
- ~50% chance to detect medium effects
  Cohen (1962); Sedlmeier and Gigerenzer (1989); Bezeau and Graves (2001)

~1 in 1000 papers
Makel et al (2012)

- ~50% chance to detect medium effects
  Cohen (1962); Sedlmeier and Gigerenzer (1989); Bezeau and Graves (2001)

- Fanelli (2010)
- Kerr (1998)

Slides: https://mgto.org/2022ceti
How big are these issues?

BIG
Every talk should start with...

No, science’s reproducibility problem is not limited to psychology

In Medicine, the Science Has Stopped Working

Can Reproducibility in Chemical Research be Fixed?

Threats of a Replication Crisis in Empirical Computer Science

The replication crisis has engulfed economics

Quantum computing’s reproducibility crisis: Majorana fermions

Slides: https://mgto.org/2022cetl
How can we know if a published finding is reliable?

Some of our best methods:

Replications

Open-science

Problem:

We don’t really do/publish replications. Trust me system.

We don’t really share much about what we publish. Trust me system.
-Initial- replication evidence: "Hard"/"exact" sciences

Bottom line:
We don't really know, but what we do know doesn't look good.

Summary:
- **Gene: Candidate-gene Associations** (2011) [1.2%]
- Microarray gene expression analysis (2009) 8 of 18 (44%)
- Oncology & cardiovascular medicine (2011) 14 of 67 (20%)
- **RP: Cancer Biology*** (mixed results) 12 of 50 (24%)
  - 18 of 50 possible, see next slide
- Neuroscience ~6%
If I didn’t miss any, all of the cancer #replication project experiments are published now. Depending on how you count, only 10% of cancer studies have been reproduced, or only 8% have completely failed to reproduce.

Is this good enough for full doctor/patient access?

## Cancer Research Replicability Project

**2013:** Let’s replicate 50 cancer studies from high-impact journals

**2018:** ahem, sorry, we will only be able to even try 18 of them (36%)

**2021:** Here’s how we did:

- 5/18 (28%) Full replication (or: 5/50: 10%)
- 7/18 (39%) Partial replication (or 7/50: 14%)
- 2/18 (11%) Not interpretable (or 2/50: 4%)
- 4/18 (22%) Not reproducible (or 4/50: 8%)

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Or should the medical literature - heresy! - at this level of reliability be reserved for professional researchers with sufficient expertise to develop long-term strategies to filter the literature for that part which is doctor/patient ready?

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[@brembs](https://twitter.com/brembs/status/1394262331375357964?s=20)
Investigating the replicability of preclinical cancer biology

Timothy M Errington, Maya Mathur, Courtney K Soderberg, Alexandria Denis, Nicole Perfito, Elizabeth Iorns, Brian A Nosek

https://elifesciences.org/articles/71601

Barriers to Conducting Replications in Experiments

COMPLETED
50 experiments

CONDUCTED
87 experiments

DESIGNED
193 experiments

https://twitter.com/BrianNosek/status/1468203976428605443?t=PzJ5vcRbNY2rR16Pq8b49g&s=03

Slides: https://mgto.org/2022cetl
Collaborative mass replications: Social Psychology

2015

Many Labs 2: 28 findings, 60+ samples, ~7000 participants each study, 186 authors, 36 nations.

Successfully replicated 14 of 28
psyarxiv.com/9654g

ML2 may be more important than Reproducibility Project: Psychology.

Aug 2018

We replicated 21 social science experiments in Science or Nature. We succeeded with 13. Replication effect sizes were half of originals. All materials, data, code, & reports: osf.io/pfdyw/, preprint socarxiv.org/4hmb6/, Nature Human Behavior nature.com/articles/s4156...

Nov 2018

Across 6 large-scale replication projects, replication rate is 90 of 190 (47%).

ML1: econtent.hogrefe.com/doi/full/10.10...
ML2: psyarxiv.com/9654g
ML3: sciedirect.com/science/articl ...
SSRP: nature.com/articles/s4156...
EERP: science.sciencemag.org/content/351/62...
RPP: 

Slides: https://mgto.org/2022cetl
My unofficial summary of Social Psychology status:

~30-50% replication rate.
In what replicates,

effect sizes ~1/2 of original.
My summary of the situation

I am convinced we're in need for self-reflection, reassessment, and improvement.

(Regardless... improving science credibility is a win-win)
How can we do better?

Registered Reports
3 hours workshop on Registered Reports

https://www.youtube.com/watch?v=0lkjMtLpDZM&list=PLRAF6P3W1K4cvLnkXXHb0jFUR-OwVcj9k&index=1
Registered Reports

Four central aspects of the Registered Reports model:

- Researchers decide hypotheses, experimental procedures, and main analyses *before data collection*
- Part of the peer review process takes place *before experiments are conducted*
- Passing this stage of review virtually guarantees publication
- Original studies and high-value replications are welcome
Traditional publishing model

- Develop idea
- Design study
- Collect & analyze data
- Write report
- Publish report

Submit for peer review here
What happens when we put researchers under pressure to get “great results”?

- Publication bias
- Lack of data sharing
- Low statistical power
- Selective reporting
- Lack of replication
- 1 in 1000 papers (Makel et al., 2012)

- ~92% positive (Fanelli, 2010)
- ~70% failure (Wicherts et al., 2006)

- Lack of replication
- Design study
- ~50-90% prevalence (John et al., 2012; Cohen, 1962; Sedlmeier and Gigerenzer, 1989; Bezeau and Graves, 2001)

- Analyse data & test hypotheses
- Collect data

- Design study
- Generate and specify hypotheses

1 in 1000 papers

- Low statistical power

- ~50% chance to detect medium effects

- ~50-90% prevalence

- Selective reporting
Registered Reports model

1. Develop Idea
2. Design Study
3. Collect & Analyze Data
4. Write Report
5. Publish Report

Stage 1: Peer Review
Stage 2: Peer Review

Slides: https://mgto.org/2022cetl
Are the hypotheses well founded?
Are the methods and proposed analyses feasible and sufficiently detailed?
Is the study well powered? (≥90%)
Have the authors included sufficient positive controls to confirm that the study will provide a fair test?
Did the authors follow the approved protocol?
Did positive controls succeed?
Are the conclusions justified by the data?
None of these things matter.
Benefits

➢ No publication bias
Benefits

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Benefits

- No publication bias
- Logically eliminates various forms of researcher bias (p-hacking, post hoc hypothesising)
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➢ High statistical power requirements increase reproducibility

➢ Incentivizes important replication studies and other novel, resource-intensive projects (where publication would normally be contingent on results)
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➢ Incorporates public archiving of data and materials

Slides: https://mgto.org/2022cetl
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Slides: https://mgto.org/2022cetl
Pre-registrations versus Registered Reports

**Stage 1: Review of Intro, Method, Proposed Analyses, and Pilot Data**
- Editorial triage
  - Manuscript rejected
- Author revision
  - Reviewers invited
  - Manuscript rejected
  - Revision invited
  - In-principle acceptance (IPA)
  - Manuscript rejected
  - Study conducted
    - Author withdraws paper
    - Manuscript withdrawn
- Stage 2: Peer review of Intro, Methods, Results, and Discussion
  - Author revision
  - Reviewers invited
  - Manuscript rejected
  - Revision invited
  - Full manuscript acceptance and publication

**RRs with no publication of protocol by journal or requirement for authors to publicly register the accepted protocol following IPA**

**Study preregistration**
- Protocol publicly registered e.g. on the Open Science Framework, clinicaltrials.gov, ISRCTN or other registry
- Published protocol articles
- No IPA prior to research

**Registered Reports**
- Peer review and IPA before research is undertaken
- Offered for original studies and replications
- Adopted by >200 journals

**Registered Replication Reports**
- Offered exclusively for replication studies by multi-site consortia and adopted by 1 journal

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https://www.researchgate.net/publication/339146994 Registered Reports Past Present and Future
History of Registered Reports

- **2013**: Launch at Cortex
- **2014**: First RRs published
- **2015**: RRs in a STEM journal
- **2016**: RR project in political science
- **2017**: RR format for clinical trials
- **2018**: Disciplinary expansion
- **2019**: RRs offered by >200 journals

Number of adopting journals by year:

- 2013: 3
- 2014: 7
- 2015: 21
- 2016: 41
- 2017: 88
- 2018: 154
- 2019: 208

Event highlights:

- Cortex confirms adoption of RRs in 2012 and launches in March 2013
- RRs published in *Social Psych & Perspect Psychol Sci*
- Comprehensive Results in Social Psychology becomes 1st dedicated journal for RRs
- Cortex publishes its 1st RR
- First launch by a multidisciplinary journal covering all STEM: *Royal Society Open Science*
- Joint RR project for the 2016 National Election Studies survey - Nine political science journals
- Post-publication peer-review model for RRs introduced by *F1000Research*
- RR funder/journal partnership announced
- Launch of RRs in immunology, endocrinology, gastroenterology and cancer journals
- 100th RR published across all journals
- First RR format for economics, preclinical science and empirical accounting
- *Nature Human Behaviour* publishes its first two RRs
- *PLOS Biology* becomes 200th adopter of RRs
- First RR format launched for veterinary science

Sources:

- Slides: https://mgto.org/2022cetl
Science Evidence Pyramid

Continuously (automatically) updated
Registered Report Meta analysis of Registered Reports
open data + code + search

Registered Report Meta analysis of Registered Reports
open data + code + search

Meta-analysis of Registered Reports
Preregistered
Data & materials archived

Registered Report
Preregistered
Data & materials archived
Immune to publication bias

Confirmatory open science
Preregistered
Data & materials archived

Exploratory open science
Not preregistered
Data & materials archived

Status quo research
Not preregistered, data & materials not archived

My suggested additions

Open Science

Credit for base:
Chris Chambers

Meta Science

Slides: https://mgto.org/2022cetl
Advantages of the Registered Reports approach for science

- **Reproducible** –
  - detailed, repeatable methods
  - high statistical power (2-3x > sample sizes)

- **Transparent** –
  - accompanied by open data & materials
  - outcomes of confirmatory and exploratory analyses distinguished

- **Credible** –
  - no publication bias
  - no hindsight bias
  - no selective reporting
Advantages of the Registered Reports approach for authors

• Get expert reviewer feedback when it’s most useful

• Higher acceptance rate (e.g. at Cortex, 90% of regular articles are rejected but only 10% of Stage 1 RRs are rejected after in-depth review; 0% of Stage 2 RRs have been rejected)

• More likely to get accepted in the 1st journal you submit to (allow 2-4 months for Stage 1 review)

• Get paper accepted before you start the research, regardless of the eventual results

• Article well cited
DEMONSTRATION

What does a Registered Report look like?

A PCI-RR submission from today:


Amy’s Thaler (1999) replication Registered Report
Does Pre-registration/Registered Reports really help?

IT DOES
Does Pre-registration/Registered Reports really help?

IT DOES #2

Scheel et al. (2020) https://psyarxiv.com/p6e9c

Slides: https://mgto.org/2022cetl
Does Pre-registration/Registered Reports really help?

IT DOES #3
Does Pre-registration/Registered Reports really help?

IT DOES #4

Hypotheses at at least three times more likely to be disconfirmed in Registered Reports compared with regular articles.

Well cited -- at or above respective journal impact factor.

https://tinyurl.com/RR-citations

Slides: https://mgto.org/2022cetl
Does Pre-registration/Registered Reports really help?

IT DOES #5

https://osf.io/preprints/metaarxiv/7x9vy
Benefits of Registered Reports

For research community:
- Eliminates researcher bias: p-hacking & HARKing ✓ ✓
- Eliminates reporting bias: publication bias ✓ ?
- Incentivizes novel, resource-intensive projects (where publication would normally be contingent on results) ✓ X

For researchers:
- Peer review when it is most helpful ✓ X
- Guarantee of publication ✓ X
- IPA on your CV ✓ X
- Reduces stress (hypotheses supported?! novel results?! p < .05?!) ✓ X

Inspired by Xenia Schmalz

Slides: https://mgto.org/2022cetl
Experience: Senior Scholar - Krishna Savani, NTU

"My collaborators and I have worked on a registered report with Gilad that has received in-principle acceptance. This was my first registered report and it was by far the most rewarding research experience.

In traditional non-registered projects, my collaborators and I are constantly trying to second guess the editor and reviewers, trying to think of likely critiques and addressing them in advance. In most cases through, the editor and reviewers have completely unrelated concerns, and we regret all the time, effort, and resources spent early on. But had we not spent the time and effort early on, our paper would have risked appearing “too thin” at the initial submission.

Working on a registered report completely eliminated this problem. Instead of second guessing the editor and reviewers, the editor and reviewers tell us in advance what they want in the paper. There is room for a back and forth dialogue until the review team and the authors agree on the direction for the paper. This process ends up avoiding wasted time and effort, and is probably more rewarding, for both parties involved.

I look forward to participating in more registered reports, both as an author and as a reviewer or editor."
Experience: Senior Scholar - Krishna Savani, NTU

Rewarding research experience

Clarity, no second guessing
Experience: mPhil student - Qinyu Xiao #1

"I think the best thing about publishing an RR is that it helps reduce uncertainty during the execution. By publishing in an RR format, once we are given the greenlight, we know that our time and resources will end up as a publication, which is especially important for students and ECRs who have high pressures for output under time constraint but with only limited resources.

The second good thing is that, if we do RR and get an IPA, we have much more confidence that we are doing the right thing, because our study protocol has passed the checks of field experts. As students we may sometimes feel that we are incompetent, but the Stage 1 review can help catch anything that we did not think of and prevent that potential incompetence from causing real consequences. Also, I would say it also contributes to our well-being as a researcher. We do not want to do anything that is NOT valued by others and does not advance science (regardless of how much), and by getting the IPA, we know that our work is valued by the reviewers at least, and it will make a contribution (else no one will give you the IPA in the first place).

Third, doing RR saves time in the execution stage. In my case, I have the analysis codes ready before I made the Stage 1 submission. I used a set of random data to show the reviewers my analysis pipeline. After I got the real data, I just changed the file name and in a click I get all the results that I need for publication. It really saves us the time needed to consider how to analyse the real data (and the time that we need to convince ourselves that this is the best way, though it sometimes can be really biased)."
Experience: mPhil student - Qinyu Xiao #1

- Reduce uncertainty
- More confidence & catch errors in design
- Peace of mind
- Saves time
Experience: mPhil student - Qinyu Xiao #2

"Last, I believe most of us have the experience of receiving hostile reviews criticizing the way we design and conduct the studies. This is definitely hard for us, but I would argue that this is also hard for the reviewers. What has been done is done, and the reviewers can do nothing about it. In such cases, any opinions that they give, even out of goodwill, will sound hostile and critical. What else can they do if the studies were really with flaws, and they want to prevent flawed studies entering the literature (they can be biased, of course, but psychology teaches us that we shouldn’t expect people to be completely unbiased in the first place)?

Things are different if they know that by giving their opinions, they can make things different and better (for those studying psychology, you know this is super important for people’s well-being). For me, the advice my reviewers gave me at Stage 1 review really helped me improved my analysis method and rationale, and everybody is happy with it in the end. Why not doing RR when we know that this maximizes everyone’s utility? Expert reviewers see their impact, and we improve our research. Even if your study protocol is rejected, and you are forced to try another journal, you already have some experts’ advice in your pocket.

So I strongly recommend ECRs and research students in their 1st or 2nd years to try RR. Why 1st and 2nd year students? Because RR is not without its limitations, and one of them is that it takes time at the planning stage. If you are required to submit anything involves data in a short time (say, you are doing a thesis in one year), then RR is less ideal for you. Since senior RPgs are burdened with the task of submitting their theses, they should think carefully before deciding to do an RR. But if any chance, I strongly recommend it. The overall experience is very positive for me."
Last, I believe most of us have the experience of receiving hostile reviews criticizing the way we design and conduct the studies. This is definitely hard for us, but I would argue that this is also hard for the reviewers. What has been done is done, and the reviewers can do nothing about it. In such cases, any opinions that they give, even out of goodwill, will sound hostile and critical. What else can they do if the studies were really with flaws, and they want to prevent flawed studies entering the literature (they can be biased, of course, but psychology teaches us that we shouldn’t expect people to be completely unbiased in the first place)?

Things are different if they know that by giving their opinions, they can make things different and better (for those studying psychology, you know this is super important for people’s well-being). For me, the advice my reviewers gave me at Stage 1 review really helped me improve my analysis method and rationale, and everybody is happy with it in the end. Why not doing RR when we know that this maximizes everyone’s utility? Expert reviewers see their impact, and we improve our research. Even if your study protocol is rejected, and you are forced to try another journal, you already have some experts’ advice in your pocket.

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Reviewers contribute meaningful Peer review helped make paper stronger

Recommended for ECRs/RPg
Briefly about the new revolution in science

Registered Reports 2.0

Peer Community in Registered Reports
Peer Community in Registered Reports

Greatest benefits I see

• Scheduled track: Reviews within 2 weeks!
• Recommenders and reviewers that understand Registered Reports.
• Open signed reviews.
• Peer review is conducted on pre-prints.
• You select where to publish from ~30 journals (friendly/interested)

Read more on: https://rr.peercommunityin.org/about/about
## The benefits of PCI RR

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*protects reviewers, recommenders, and authors from confidential peer review; holds recommenders and PCI RR accountable for decisions; provides peer review data for meta-research*
To recap, let’s go back to the beginning…
“HKU Registered Reports challenge”

Funding 8000HK$ online data collection for 30 students co-authored open-science Registered Reports in social-psychology/JDM that received in-principle acceptance.
Fine-print details

• Type of project: Must be a **Registered Report**

• How to receive this funding support? Registered Report must receive **in-principle acceptance from a journal/community.**

• Student co-authored submissions: **Students must be co-authors** and actively involved with major contribution.

• Open science Yes, 100% open-science. Commitment to **sharing all materials, anonymized datasets, and code** on OSF publicly permanently.
Fine-print details

- **Domains:**
  Social psychology, personality, and/or judgment and decision-making

- **Data collection sample:**
  Online, using Qualtrics on Amazon Mechanical Turk and/or Prolific.

- **How much funding:**
  8000HK$ online data collection. Should cover 5 min experiments with 1000 participants.

- **How many:**
  30. First come first served.

- **Funding how?**
  Data collection, conducted by me. No direct access to funding.
Fine-print details: Process

Doing the Registered Reports
• I’ll guide you, our team can support you.
• **Use our templates:**
  – Main manuscript: [https://mgto.org/RRmanuscripttemplate](https://mgto.org/RRmanuscripttemplate)
  – Supplementary: [https://mgto.org/RRsupplementarytemplate](https://mgto.org/RRsupplementarytemplate)
• Use our many guides: [https://mgto.org/resources/](https://mgto.org/resources/)

Authorship:
• Can submit on your own, or join us/me.
• Students must be coauthors, preferably lead, and involved throughout.
• **All contributions acknowledged** with CRediT contributorship and credited with authorship.

• Before submission:
  – Contact me: Gilad Feldman ([giladfel@gmail.com](mailto:giladfel@gmail.com))
  – Check with me you meet all the criteria and know how to proceed.
• After in-principle acceptance:
  – I conduct data collection. You send your completed pre-registration, in-principle acceptance, and a Qualtrics link, and you receive a dataset collected with the funding.

Slides: [https://mgto.org/2022ceti](https://mgto.org/2022ceti)
How to join us?

Visit: [http://mgto.org/joinmassreplication](http://mgto.org/joinmassreplication)

Reminder: Things you can do...

- Take lead over/collaborate on completed replications
- Take lead over/collaborate on completed Registered Reports Stage 1
- Collaborate on written primers/guides/opinion manuscripts
- Collaborate on our manuals / templates

- Suggest new directions... ? (prediction markets)
For more information:

http://mgto.org/pre-registered-replications/

About me and open-science: http://giladfeldman.org
Contact: gfeldman@hku.hk
Twitter: @giladfeldman
Mailing list: http://mgto.org/giladmailinglist
Peer Community in Registered Reports
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[Slides: https://mgto.org/2022cetl]
Peer Community In publishing model solves the ethical problems

- Journal-style peer review (editor & reviewers) of preprints hosted at preprint servers
- PCI publishes the review history, authors update article at preprint server
- Not a journal: can submit articles to journals afterward & ask to waive peer review

@PeerCommunityIn = free for readers & authors, funded by donations, & costs almost nothing (~500 to 5,000 EUR/yr for website & promotion). Proof that researchers can produce & peer review our own articles (which we already do for journals & publishers)
peercommunityin.org/2019/05/29/pci...

Source: https://osf.io/4fvkt/
A COMMUNITY, NOT A JOURNAL
PCI RR doesn’t publish Registered Reports but instead manages peer review of Registered Report preprints across STEM, medicine, the social sciences and humanities

ESTABLISHED BENEFITS
Rigorous and constructive pre-study review at a point in time where it helps the most, with in-principle acceptance to neutralise publication bias and reporting bias

TRUST
Led by the architects of Registered Reports, with the review process managed by accredited recommenders

INDEPENDENCE
Peer review independent of journals but endorsed by a growing list of journals that accept PCI RR recommendations

POWER TO AUTHORS
Once a submission is recommended by PCI RR, authors can choose any eligible PCI RR-friendly journal to publish the article without further peer review

FLEXIBILITY
No need for authors to decide which journal to publish in – or any journal at all – until after a final Stage 2 recommendation

TRANSPARENCY
Recommended preprint remains citable on a preprint server, with peer reviews published under a DOI by PCI RR and reviewers having the option to sign

INNOVATION
Unique policy features including Scheduled Review and Programmatic Registered Reports to accelerate peer review and widen access to different modes of research

ZERO COST
PCI RR is a non-profit, non-commercial platform that is free to use for all, including authors, readers, and supporting journals

The WORKSHOP
Free and transparent pre- and post-study recommendations across research fields

Web: https://rr.peercommunityin.org  Twitter: @PCI_RegReports

CC-BY 4.0  |  Slides: PDF (https://tinyurl.com/cf89de73), Google (https://tinyurl.com/cf89de73)  |  Based on slides from C Logan, C Chambers, J Rohrer
What is a registered report (RR)?

Stage 1 = pre-study peer review
+ in principle acceptance of the final article (given that you follow your plan)

Stage 2 = post-study peer review

Registered reports as an article type began in 2013...

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
QUESTION 1: what are the positives and/or negatives of conducting peer review before the data are collected?

Positives

- Peer review happens at a time when the authors can change things
- Prevents wasting time and resources on unsound research
- Article will be published regardless of the results
- Reduces biases in literature that favor publishing only positive results
- Prevents hypothesizing after results are known (HARKing)
- Prevents conducting analyses until significant results are found (p-hacking)
- Improves computational reproducibility

Negatives

- Need to wait for in principle acceptance before collecting data

*but see PCI RR’s innovations to help speed this up & make it more flexible!*

See review by Chambers & Tzavella 2020 10.31222/osf.io/43298
### The benefits of PCI RR

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*protects reviewers, recommenders, and authors from confidential peer review; holds recommenders and PCI RR accountable for decisions; provides peer review data for meta-research*
The registered report lifecycle at PCI RR

1. Submit your RR to PCI RR as a private or public URL to a file in a repository (e.g. OSF, GitHub)
2. PCI RR website
3. Your RR is peer reviewed
4. Revised versions
5. Your RR is recommended
6. Optional: submit to PCI RR-friendly journal where article is accepted without further peer review

Preprint server (OSF preprints, arXiv, bioRxiv)
- Deposit preprint at preprint server
- Recommended, peer reviewed preprint
- Valid, citable final article AND can still be submitted to a journal
- Submitted to PCI RR

PCI RR process Stage 1
- Your RR is not considered for peer review
- Submission fails to meet Stage 1 criteria

PCI RR process Stage 2
- Preprint assessed by recommender and reviewers
- Your preprint is recommended
- Citable recommendation text + reviews published by PCI (doi)

Conduct your study

Non-profit, non-commercial, FREE, researcher-run, supra-journal platform for conducting journal-style peer reviews of RRs across all research fields
PCI RR Recommender's Entrance Test

Welcome to the PCI RR Recommender's Entrance Test. This test is designed to assess basic knowledge of the RR format, the core policies of PCI RR, and best approaches for tackling challenging scenarios.

The test includes 66 questions over 5 sections. Please allow 2 hours to complete the test.

All information that prospective recommenders need to pass this test is contained in the guidance and the links at the top of each section. A pass grade is 63 out of 66 points (95% correct) and the test can be taken as many times as necessary.

It's great training on what RRs are and how PCI RR works, so let's try it out!
Which of the following is NOT one of the Stage 1 criteria for a Registered Report evaluation at PCI RR?

- The scientific validity of the research question(s)
- The importance of the research question(s)
- The soundness and feasibility of the methodology and analysis pipeline

Discuss! Even though you haven’t read the PCI RR policies yet, this is a great thought exercise.
Incentive structure at odds with research rigor

To get jobs and grants, researchers are often told to publish in high impact factor journals that select articles based on their subjective impact (subjective = it is the handling editor’s opinion)

These journals select articles that tell sexy stories...

…which leads researchers to manipulate the story (HARK) and stats (p-hack) to make a story sexy (this selects for bad science^2)

^1 Maggio et al. [https://doi.org/10.1111/medu.13950], ^2 Smaldino & McElreath 2016 [https://doi.org/10.1098/rsos.160384]
QUESTION 3: PCI RR recommender test

Suppose PCI RR receives a Stage 1 manuscript proposing a study in which the data that will be used to answer the research question have been accessed and partially observed by the authors. The authors also certify that they have NOT yet sufficiently observed the key variables within the data to be able to answer the question. Is this submission likely to be eligible for consideration?

- Yes, provided additional steps are taken to control risk of bias
- No, the risk of bias in this scenario is too high for PCI RR

Discuss! Even though you haven’t read the PCI RR policies yet, this is a great thought exercise.
If authors have an inflexible data collection start date and have not received in principle acceptance before this date, they may begin collecting data but must adjust the bias-control level accordingly (e.g., if the initial submission was Level 6, it would then drop to Level 3, 2, or 1)

### PCI RR recommender test

<table>
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<tr>
<th>Level</th>
<th>Data already exist or will exist prior to IPA</th>
<th>Data are accessible to the authors</th>
<th>Data have been observed by the authors</th>
<th>At least some data have already been observed by the authors</th>
<th>Key variables in the data have already been observed by the authors</th>
<th>Authors have already analyzed key variables in the data</th>
<th>Risk of bias to prior data observation</th>
<th>Multi-disciplinary Inclusivity</th>
</tr>
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<tr>
<td>6</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>Zero</td>
<td>Very low</td>
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<tr>
<td>5</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
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<tr>
<td>4</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
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<td>3</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>Moderate</td>
<td>Moderate</td>
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<tr>
<td>2</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
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<td>✗</td>
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- Yes, provided additional steps are taken to control risk of bias
- No, the risk of bias in this scenario is too high for PCI RR
1. One CENTRALISED REVIEW PROCESS opens the gateway to a growing list of PCI RR-friendly journals that accept PCI RR recommendations without further review.

2. Authors can CHOOSE whether reviewers must sign reviews or if it’s optional depending on their goal for final article (some journals only accept signed reviews).

3. Have a large/long-term research program that involves many hypotheses with same theoretical background? Submit 1 PROGRAMMATIC RR that will end up as >1 final article.

4. Explicitly state & address the level of bias in your RR with the TAXONOMY OF BIAS CONTROL.

5. PCI RR recommenders receive TRAINING in how to be an editor & have to pass a test before handling manuscripts. Increases & standardizes quality of review & decision process.

6. Worried that a RR will slow you down? Submit it to PCI RR on the SCHEDULED REVIEW track! Submit a 1 page snapshot & the date by which you will submit the full RR, & PCI RR will line up the recommender (editor) & reviewers in advance!
PCI RR Scheduled Review Track

A. Standard Review

- Manuscript submitted
  - Authors prepare manuscript
  - Recommender triage
  - Recommender acquires reviewers
  - Manuscript under Stage 1 review
  - Recommender decision
  - Reviews received
    - Recommender consideration

B. Scheduled Review

- Authors prepare RR snapshot
- Recommender triage
- Recommender acquires reviewers and schedules reviews for future date
- Manuscript submitted
- Recommender decision
- Reviews received
  - Recommender consideration

Stage 1 (Round 1) review time
Peer Community In Registered Reports (PCI RR) is a free, non-commercial platform dedicated to reviewing and recommending Registered Reports preprints across STEM, medicine, the social sciences and humanities.

- Once a submission is recommended by PCI RR following peer review, the revised manuscript is posted at the preprint server where the preprint is hosted, and the peer reviews and recommendation are published at the PCI RR website.

- Authors then have the option to publish the preprint in a traditional journal, including a growing list of PCI RR-friendly journals that have committed to accepting PCI RR recommendations without further peer review.

Founders: Corina Logan, Emily Sena, Zoltan Dienes, Chris Chambers, Ben Pujol
How it works

Submit your RR to PCI RR as a private or public URL to a file in a repository (e.g. OSF, GitHub)

PCI RR process Stage 1

1. PCI RR website
2. your RR is peer reviewed
3. revised versions
4. your RR is recommended
5. not considered for peer review
6. submission fails to meet Stage 1 criteria

Preprint server (OSF preprints, arXiv, bioRxiv)

6. deposit preprint at preprint server
7. revised versions
8. Recommended, peer reviewed preprint
9. Valid, citable final article AND can still be submitted to a journal
10. Optional: submit to PCI RR-friendly journal where article is accepted without further peer review

PCI RR process Stage 2

7. Submit preprint to PCI RR
8. your preprint is recommended
9. submission fails to meet Stage 2 criteria
10. Citable recommendation text + reviews published by PCI (doi)

- Open access
- Free for authors and readers
- Searchable
List of PCI RR-friendly journals

There are currently 16 PCI RR-friendly journals. The current list can be viewed in spreadsheet and PDF format, and details of each journal’s commitment and eligibility requirements are also listed below.

For open access journals, authors are strongly advised to check the journal website for latest information concerning article processing charges.

Journals interested in becoming PCI RR-friendly can learn more about the requirements here and can apply to join here.

- Addiction Research & Theory
- BMJ Open Science
- Cortex
- Experimental Psychology
- F1000Research
- Infant and Child Development
- Journal of Cognition
- NeuroImage: Reports
- PeerJ
- PeerJ Computer Science
- PeerJ Physical Chemistry
- PeerJ Organic Chemistry
- PeerJ Inorganic Chemistry
- PeerJ Analytical Chemistry
- PeerJ Materials Science
- Royal Society Open Science

List of PCI RR-interested journals

Where authors seek to maximise the chances of their manuscript being picked up by a PCI RR-interested journal, we recommend they consult the journal’s RR policy to determine what additional conditions may need to be met, over and above the PCI RR review criteria. For instance, some PCI RR-interested journals set a more stringent requirement on pre-planned evidence strength (including prospective statistical power or Bayes factors) while others may only consider RRs where data do not exist prior to in-principle acceptance (in line with Level 6 of the PCI RR bias-control taxonomy).

The list of PCI RR-interested outlets below includes a link to each journal’s RR author guidelines.

- Affective Science [RR author guidelines TBC]
- Biolinguistics [RR author guidelines]
- Collabra: Psychology [RR author guidelines]
- PLOS Biology [RR author guidelines]

PCI RR-friendly journals commit to accepting PCI RR recommendations without further peer review. You, the author, decides which journal gets to publish your Stage 2 RR.

https://rr.peercommunityin.org/about/pci_rr_friendly
Other unique features

**Programmatic RRs:** One Stage 1 manuscript leading to multiple Stage 2 outputs
See: [https://rr.peercommunityin.org/help/guide_for_authors#h_52492857233251613309610581](https://rr.peercommunityin.org/help/guide_for_authors#h_52492857233251613309610581)

**Scheduled Review:** Following submission of a one-page Stage 1 “snapshot”, peer review is scheduled in advance so that the Stage 1 review time following full manuscript submission = days rather than weeks

A. Standard Review

B. Scheduled Review

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ps://mgto.org/2022cetl
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<tr>
<td>Offers programmatic RR: one Stage 1 RR leading to multiple Stage 2 manuscripts</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Offers scheduled review to accelerate the Stage 1 review process</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Requires handling editor (or recommender) to have proven their knowledge of RR by passing an entrance test, which serves as useful training of a rarely taught skill</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Peer review undertaken independently of any journal</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Author has the power to decide their destination journal (if any)</td>
<td>✗</td>
<td>Very rare</td>
<td>✓</td>
</tr>
<tr>
<td><strong>No need for author to decide on destination journal until after Stage 2 acceptance by PCI RR</strong></td>
<td>✗</td>
<td>Very rare</td>
<td>✓</td>
</tr>
<tr>
<td>Peer reviews for accepted manuscripts published online and free to read</td>
<td>✗</td>
<td>Very rare</td>
<td>✓</td>
</tr>
<tr>
<td>Free for authors and readers</td>
<td>Depends on journal</td>
<td>Very rare</td>
<td>✓</td>
</tr>
</tbody>
</table>
Example: post doc or PhD students wanting to complete a series of independent RRs

1. Design RRs and complete Stage 1 Snapshot
2. Post Snapshot on the OSF, either privately or under embargo
3. Submit the snapshot URL to PCI RR via the “Scheduled Review” track
4. Select future date for review (e.g. 6 weeks head), and once passed the recommender triage process, set to work writing a full “programmatic RR”
5. While designing & writing the Stage 1 RR, consult the list of PCI RR-friendly journals to ensure that you meet any additional requirements for whatever target journals you have in mind (e.g. concerning evidence strength, bias control, etc)
6. Submit your full Stage 1 manuscript by the due date. Because review is planned in advance, reviews & an interim recommendation can be expected in about a week
7. If, likely following revision, you gain in-principle acceptance (IPA), PCI RR will tell you which journals are eligible outlets & will auto-endorse the IPA decision. You can also ask us for a provisional steer prior to IPA. PCI RR makes this decision.
8. With IPA in hand, you now have an approved programme of multiple RRs accepted in advance which you can eventually choose to publish in any eligible PCI RR-friendly journal (or you can submit anywhere else as you see fit). Each Stage 2 RR can go in a different journal.
9. Do research and publish each Stage 2 output as you progress without further peer review, in journal of your choice
More information on PCI RR

https://rr.peercommunityin.org/help/guide_for_authors

Guide for Authors

1. Introduction to PCI and PCI Registered Reports
2. Information typically required, reviewing and workflow
3. How to submit a report
4. Additional guidelines
5. How to report
6. Why summarize
7. How to see your report
6. Early feedback
7. Submitting a report
8. Additional guidelines
9. Reporting a new tool
10. Reporting a new tool
11. Help for authors

https://rr.peercommunityin.org/help/faq

Frequently Asked Questions

- PCI Register: A platform that enables the submission of reports and the review of established and emerging practices in the field of research.
- PCI Report: A report that is submitted to the PCI Register and reviewed by a panel of experts.
- PCI Review: A process by which reports are reviewed to ensure they meet the criteria for publication.

https://rr.peercommunityin.org/help/help_practical

Practical Help

1. How to submit a report
2. Review process
3. FAQs
4. Additional guidelines
5. Reporting a new tool
6. Reporting a new tool
7. Help for authors
8. Reporting a new tool
9. Help for authors
10. Reporting a new tool
11. Help for authors

https://rr.peercommunityin.org/about/about

About PCI Registered Reports

- Description of PCI
- History of PCI
- PCI Register
- PCI Report
- PCI Review
- PCI Help

These slides: https://osf.io/7s9u6/

For more info: chambersc1@cardiff.ac.uk
Registered Reports: Peer review before results are known to align scientific values and practices.

More information

- Detailed FAQs
- Table comparing journal features
- Resources for authors, editors, funders

https://cos.io/rr/
https://rr.peercommunityin.org/about/about
http://www.ukrn.org

Stephanie Rossit
UKRN Local Lead for UEA

For more info: chambersc1@cardiff.ac.uk

Slides: https://mgto.org/2022cetl
1. “Are Registered Reports suitable for my field?”

- Applicable to any field engaged in hypothesis-driven research where one or more of the following problems apply:
  - Publication bias
  - Significance chasing (e.g. p-hacking)
  - Post hoc hypothesizing (hindsight bias)
  - Low statistical power
  - Lack of close replication

- Not applicable for
  - Purely exploratory science
  - Methods development

2. “Could researchers cheat by ‘pre-registering’ a study that they have already conducted?”

- Time-stamped raw data files must be submitted at Stage 2 with basic lab log and certification from all authors that data was collected after provisional acceptance
- Submitting a completed study at Stage 1 would therefore be fraud
- Strategy would backfire anyway when reviewers ask for amendments at Stage 1

Registered Reports aren’t designed to prevent fraud but to incentivize good practice
3. “Will this limit exploration or stigmatize exploratory research?”

- No. The are no restrictions on the reporting of unregistered exploratory analyses.
- Confirmatory and exploratory analyses are simply reported separately in the final paper

What stigmatizes exploratory research is post hoc hypothesizing to fit a deductive framework

Exploratory research is simply not valued in its native form
Exploratory Reports at Cortex

Open-ended, Open Science

De-emphasis on *a priori* hypotheses and p values

Greater emphasis on parameter estimation and hypothesis generation

In this special guest post, Rob McIntosh, associate editor at Cortex and long-time member of the Registered Reports editorial team, foreshadows a new article type that will celebrate scientific exploration in its native form.

http://neurochambers.blogspot.de/2017/07/open-ended-open-science.html

4. Are Registered Reports suitable for me as an early career researcher?

- Yes – they send a signal that the researcher cares about transparency and reproducibility; not just “playing the game” but seeking to make real discoveries
- They are offered at prominent journals (publishers such as Royal Society, Nature, APA)
- Going for post doc jobs, what you do think will look better on your CV?
  A) Bunch of papers listed as “in preparation”, “submitted”, “submitted to Nature”
  B) Bunch of papers listed as “provisionally accepted at [Journal]”

5. What is the acceptance rate?

- For standard (unregistered) research articles, the rejection rate at Cortex is about 90%
- But for Registered Reports, only 10% of submissions that pass editorial triage (and proceed to in-depth Stage 1 review) are rejected
- The rejection rate for Stage 2 submissions is currently 0%

6. How long does the review process take?

- Generally about 2-4 months. e.g. at Cortex:
  - Average 9 weeks to complete Stage 1 review, not including time taken for authors to revise manuscript
  - Average 9 weeks to complete Stage 2 review, not including time taken for authors to revise manuscript
7. “What happens if I need to change something about my study procedures after they are provisionally accepted?”

- Minor changes (e.g. replacing equipment) can be footnoted in Stage 2 manuscript as protocol deviations
- Major changes (e.g. changing data exclusion criteria) are likely to require withdrawal and re-review
- Editorial team decides whether deviation is sufficiently minor to continue

8. “Some of my analyses will depend on the results, so how can I pre-register each step in detail?” (e.g. type of statistical model)

- Pre-registration doesn’t require each decision to be specified, only the decision tree
- Authors can pre-register the contingencies / rules for future decisions
- Pilot data or modelling can be useful for narrowing the range of likely possibilities

9. “I have access to an existing data set that I haven’t yet analysed. Can I submit this proposed analysis as a Registered Report?”

- Yes many journals offer Secondary RRs, provided you have measures in place to sufficiently minimise bias/overfitting due to prior observation
# Table of Journal Features for Registered Reports

[Google Sheet Link](https://docs.google.com/spreadsheets/d/1D4_k-8C_UENTRtbPzXfhjEyu3BfLxdOsn9j-otrO870/edit#gid=0)
10. “How do Registered Reports support replication studies?”

- Conspiracy of circumstances tells us not to bother doing direct (close) replications
  - Method sections are often too vague to allow precise replication
  - Chronic lack of power in novel research means that replications often require very large samples sizes
  - Attempting to exactly repeat a previous experiment can be seen in some fields (e.g. psychology) as an act of aggression (cf. physics)
  - Motivated reasoning by reviewers can impede publication
  - Many journals prioritise novelty and see replications as unpublishable
  
- RRs: have proposed replication experiment reviewed and provisionally accepted before you invest substantial resources into doing it; potentially involve original authors in peer review of the protocol; motivated reasoning is prevented

11. “Are Registered Reports well cited?”

- Yes. They are cited, on average, at or above their journal’s impact factor https://tinyurl.com/RR-citations
12. “I have no idea of what effect size to expect in my experiment, so how can I do a power analysis as part of Stage 1?”

- Usually there is related literature. But even if not, you can specify a smallest effect size of interest (SESOI). What SESOI does your theory predict? Is there a true effect below a particular size that you would be happy to miss?
- If SESOI is uncertain, options are:
  - an orthodox statistical approach with corrected peeking (e.g. Lakens, D. Performing high-powered studies efficiently with sequential analyses. European Journal of Social Psychology 44.7 (2014): 701-710)
  - Bayesian methods to specify distribution of possible effect sizes (e.g. Dienes, Z. Bayesian versus orthodox statistics: Which side are you on? Perspectives on Psychological Science 6.3 (2011): 274-290)
- Pilot results to help inform effect size estimates are welcomed in Stage 1 submissions.

13. “Could reviewers steal my ideas at the pre-registration stage and scoop me?”

- Usually only a handful of people know about Stage 1 submissions at point of review
- Once a Stage 1 protocol is accepted, the journal can’t reject your paper because something similar was published (novelty becomes irrelevant)
- Manuscript received date on many published RRs is the date of Stage 1 submission
- How different from grant applications, conference presentations, seminars?
14. “Registered Reports seem limited to single studies. What if I want to publish a sequence of experiments?”

- Many journals offer sequential registrations in which authors add studies iteratively at Stage 1 via a fast-track mechanism and complete them at Stage 2
  - With each completed cycle, the previous accepted version of the paper is guaranteed to be published
- Authors can also include a sequence of unregistered experiments as preliminary studies in a Stage 1 RR (e.g. E1, E2, E3 preliminary; manuscript proposes E4 as pre-registered test): e.g. http://rsos.royalsocietypublishing.org/content/4/9/160935

15. “How do I convince my PI/supervisor to try Registered Reports?”

- Can be challenging, especially if you PI maintains a large file-drawer – you will learn something informative about your PI from how they react to the suggestion!
- Explain the wider community benefits as well as potential benefits for your career
- In highly competitive/controversial fields, RRs are useful for providing clarity and avoiding stonewalling by rivals who may object to your results
- Are offered by major journals and well cited, with numbers continually rising
- Are part of a raft of transparency initiatives that only going to increase in prominence