

How to improve the value of your research



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**Comparative
Behavioral
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Conducting & evaluating research depends on the ability to:

READ... ...Paywall **vs.** free

UNDERSTAND... ...Jargon **vs.** write for a broad audience

and **VERIFY...** ...Closed **vs.** transparent research process
research

GENERATE

and **DISSEMINATE**

research

- Perception of prestige **vs.** tackle implicit biases
- Select based on metrics **vs.** access to opportunity
- Wealth **vs.** ability

How can we remove these inequities & improve research value?

Connect the costs of publishing with our publishing choices

Change our behavior to stop exploiting ourselves and discriminating against other researchers and the public

...because all of the options we need exist **right now**

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How scholarly publishing works

and **DISSEMINATE**

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Exploitative route



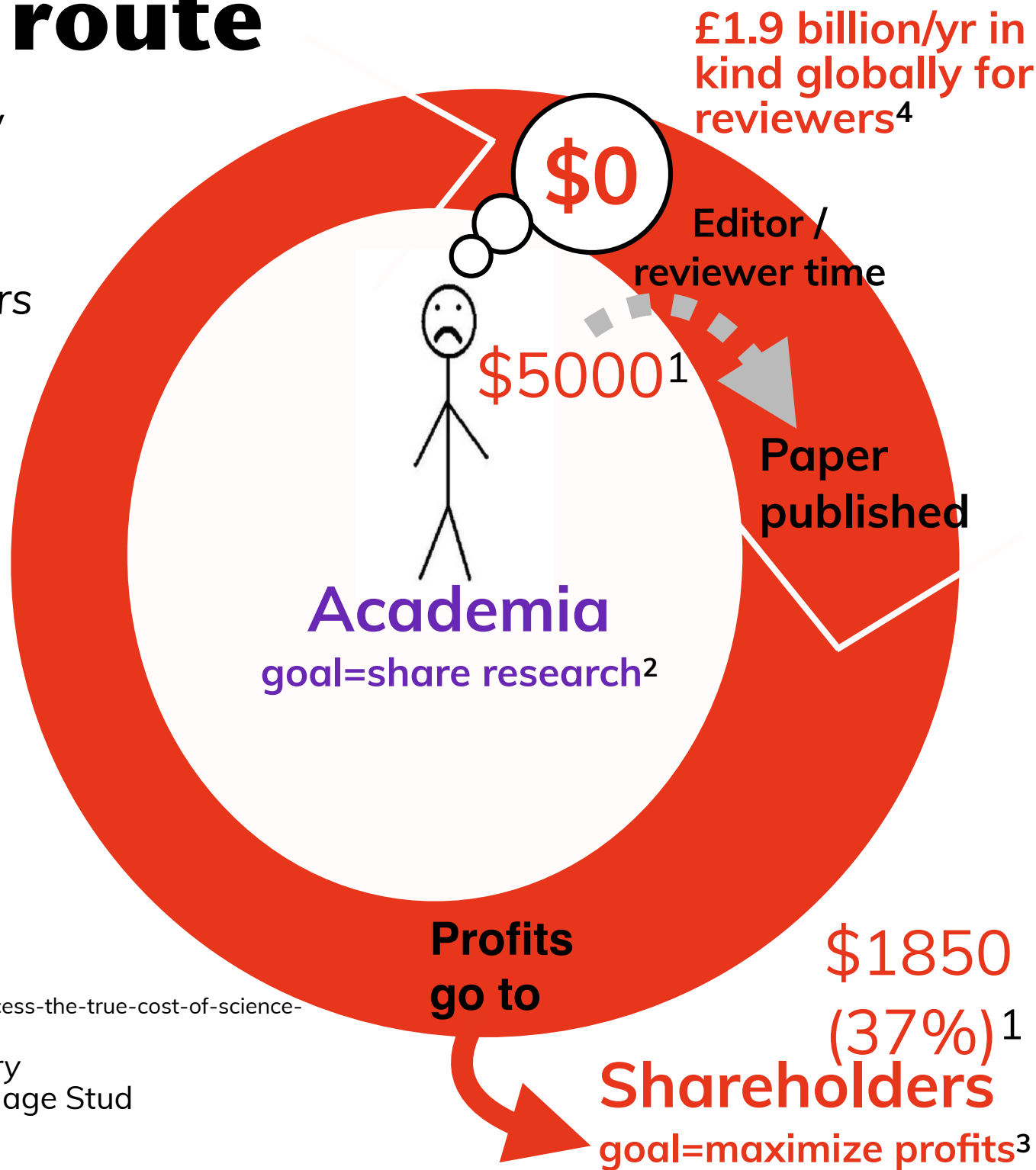
¹Van Noorden 2013 [nature.com/news/open-access-the-true-cost-of-science-publishing-1.12676](https://www.nature.com/news/open-access-the-true-cost-of-science-publishing-1.12676)

²Nosek & Bar-Anan 2012 *J Psych Inquiry*
Logan 2017 F1000Research

Exploitative route

Academics perform quality control at no cost to publishers

What services do publishers actually provide?



¹Van Noorden 2013 [nature.com/news/open-access-the-true-cost-of-science-publishing-1.12676](https://www.nature.com/news/open-access-the-true-cost-of-science-publishing-1.12676)

²Nosek & Bar-Anan 2012 *J Psych Inquiry*

³Husted & de Jesus Salazar 2006 *J Manage Stud*

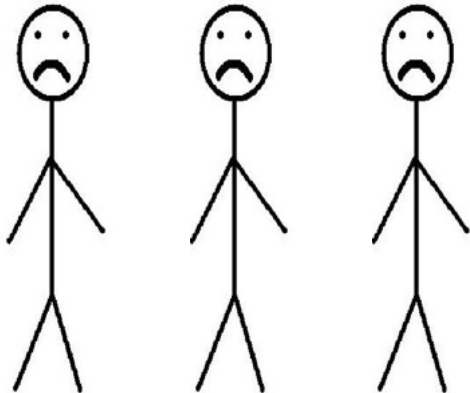
⁴Research Information Network 2008

Logan 2017 F1000Research

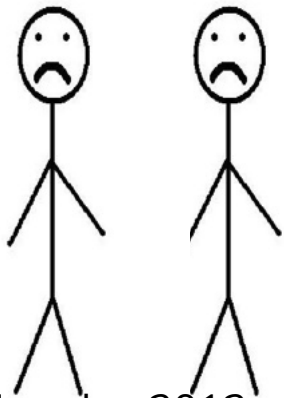
Exploitative route

**Indirect
discrimination**

Patient MD Public



Other
researchers



Public
funds
research

PAYWALL

\$0

£1.9 billion/yr in
kind globally for
reviewers⁴

Editor /
reviewer time

\$5000¹

Paper
published

Academia

goal=share research²

Available
to read by
scholarly
rich



Profits
go to

**\$1850
(37%)¹**

Shareholders
goal=maximize profits³

¹Van Noorden 2013 nature.com/news/open-access-the-true-cost-of-science-publishing-1.12676, ²Nosek & Bar-Anan 2012 *J Psych Inquiry*, ³Husted & de Jesus Salazar 2006 *J Manage Stud*, ⁴Research Information Network 2008, Murray-Rust 2011 blogs.ch.cam.ac.uk/pmr/2011/10/05/the-scholarly-poor-dentists/, Tennant et al. 2016 *F1000Research*, Logan 2017 *F1000Research*

The ethical framework

- 1) **Researchers** and **publishers** have a **responsibility to the public** to provide them with **free access to publicly funded products**, which are a common good^{1,2}
- 2) **Publishers** of research products have a **responsibility to researchers** to value the generation and packaging of knowledge³
- 3) **Researchers** have a **responsibility to the public to conduct rigorous research** because it will serve as the foundation for the advancement of discoveries, it provides the best value for money, and earns public trust⁴

¹Stilgoe et al. 2013 *Res Policy*

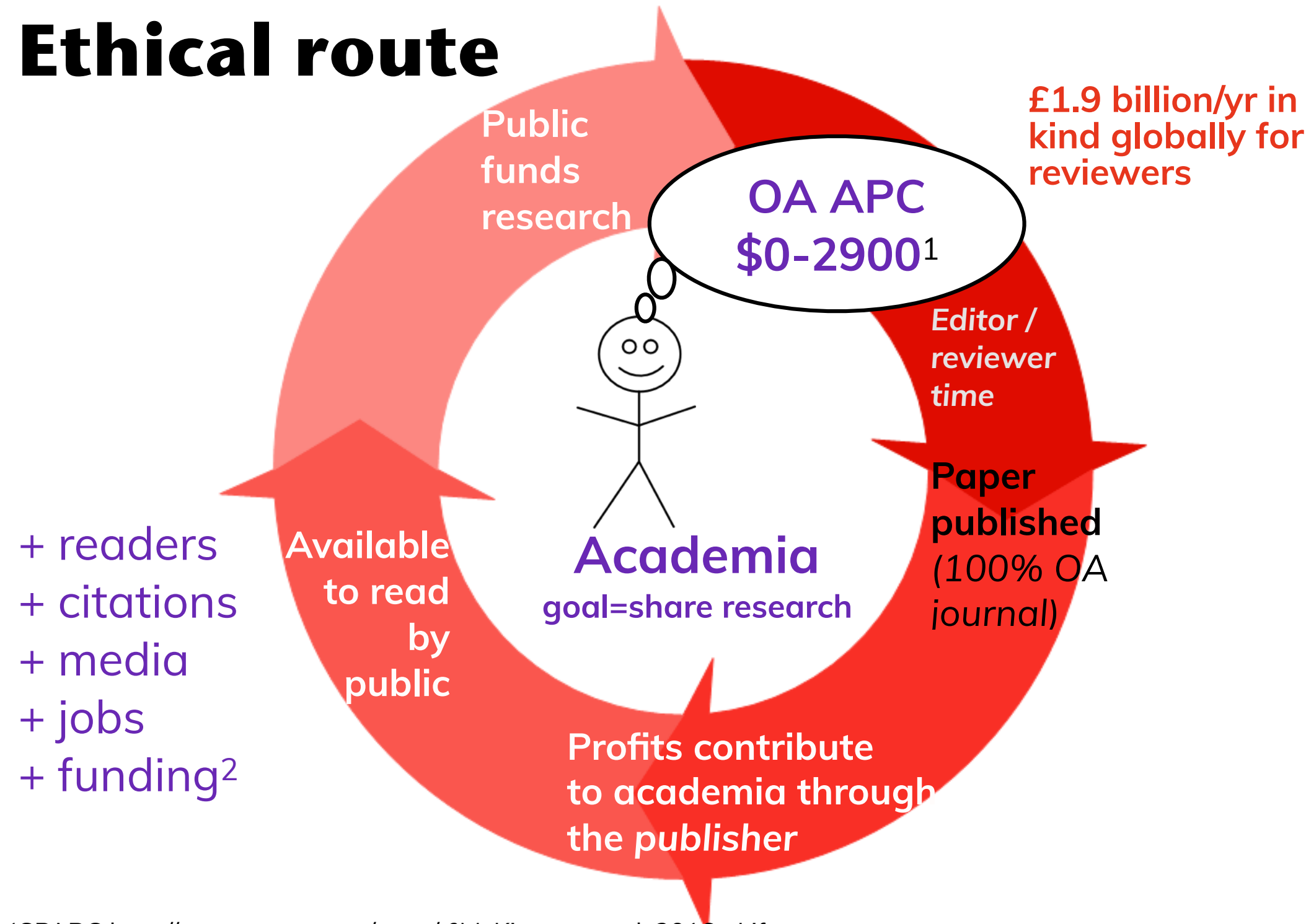
²Woodward 1990 *Library Trends*

³Fuchs & Sandoval 2013 *TripleC: Communication, Capitalism & Critique*

⁴Nosek & Bar-Anan 2012 *J Psych Inquiry*

Logan 2017 F1000Research

Ethical route



¹SPARC <http://sparceurope.org/oaca/>, ²McKiernan et al. 2016 eLife, Tennant et al. 2016 F1000Research, Logan 2017 F1000Research

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GENERATE *Closed peer review = unverifiable*

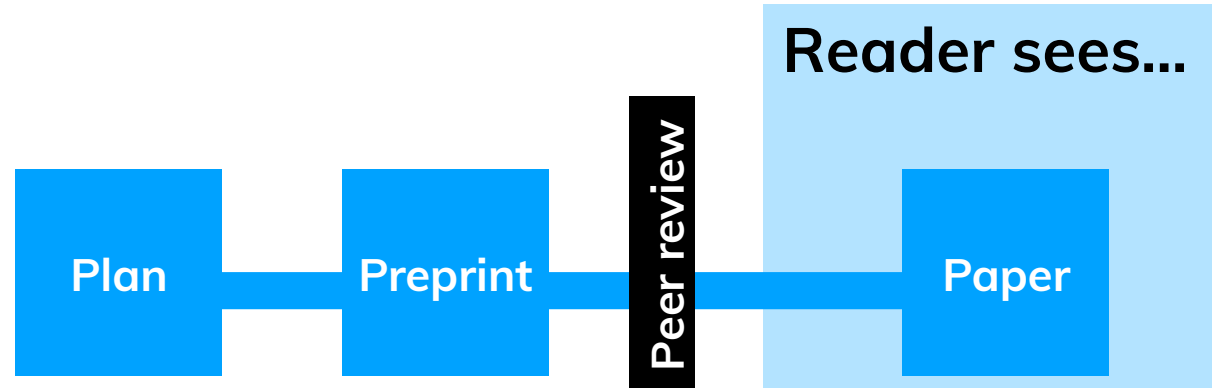
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Closed peer review prevents verifiability of the evaluation of the research process

- Prohibits quality control
- Reviews can be inadequate, biased, subjective
- Editors = key to high standards in research and ethics



My closed peer review horror story

- I reviewed a paper, raised many issues, some insurmountable
- Decision = **Major Revision**
- Not cc'ed on further decisions, **no re-review**
- Asked to publish a response to accepted article. **Accepted version didn't address comments**; many factual errors
- Executive editor + handling editor + president of society **refused to acknowledge they accepted the paper without proper revision and didn't seem to care it was low quality / incorrect**
- I am mentioned in Acknowledgements

I control where I donate my reviewer/editor time

Reviewing Ethics

If I am invited to review a paper for a journal and/or publisher that is not aligned with my commitment to conducting rigorous science, I accept the review, write the below text in the Comments to the Authors section, and submit the review. I got this idea from the [Peer Reviewers' Openness Initiative](#) and modified it to suit my particular ethics.

- - -

My goal is to ethically conduct and promote rigorous science. I avoid exploiting myself as a scientist, I facilitate equality and diversity by ensuring that no one is discriminated against when reading scientific literature I contribute to, and I keep funds in academia (see my [paper](#), [presentation](#), and [website](#) for background). I use the mechanism of transparency to achieve my goal so anyone can evaluate my contributions at every step of the process.

Therefore, I am only willing to review papers that:

- 1) are going to be published gold open access under a CC-BY license,
- 2) will publish the review history alongside the paper,
- 3) are submitted to a journal where 100% of the articles are open access, and
- 4) are submitted to a journal that is published by an academic non-profit organization, or a for-profit corporation that
 - a) has low or no article processing charges, and/or
 - b) heavily invests profits in academia, and/or
 - c) are working to modernize publishing infrastructure for researchers

I am not willing to review this paper at this journal because criteria 2-4 are not met, and it is unclear whether criterion 1 is met.

Sincerely,
Corina Logan
Max Planck Institute for Evolutionary Anthropology

<http://www.corinalogan.com/ethics.html>

Peer review of preregistrations at PCI

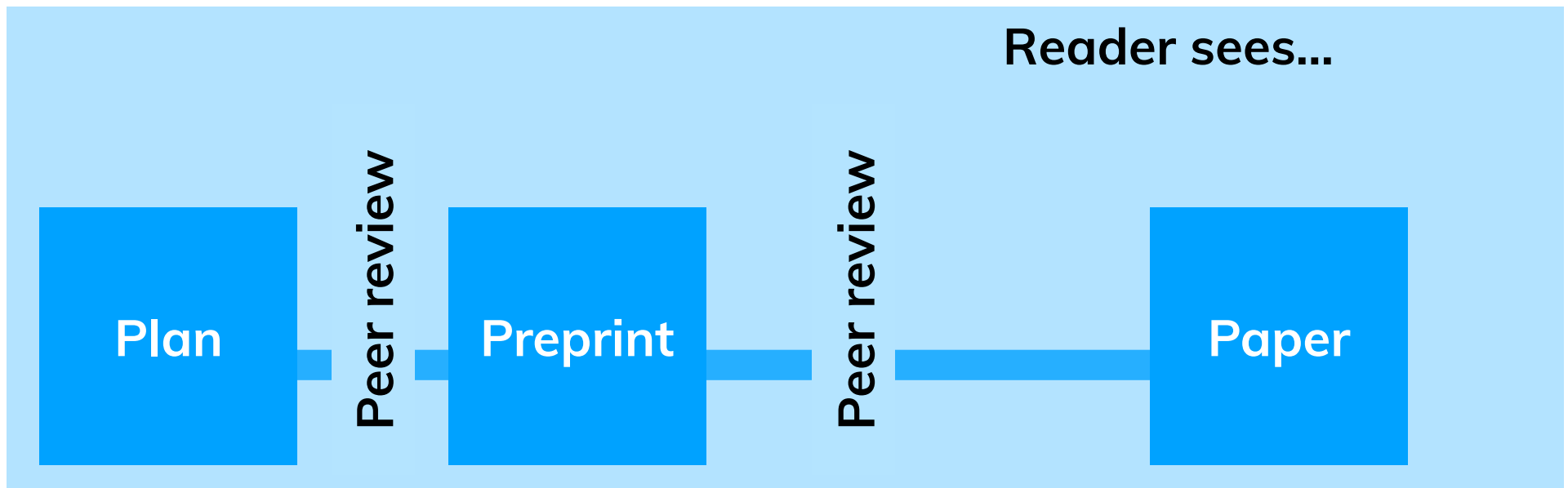
Prevents wasting resources by improving research before it begins



“Flexible registered report”



Allows verification of research process and evaluation process



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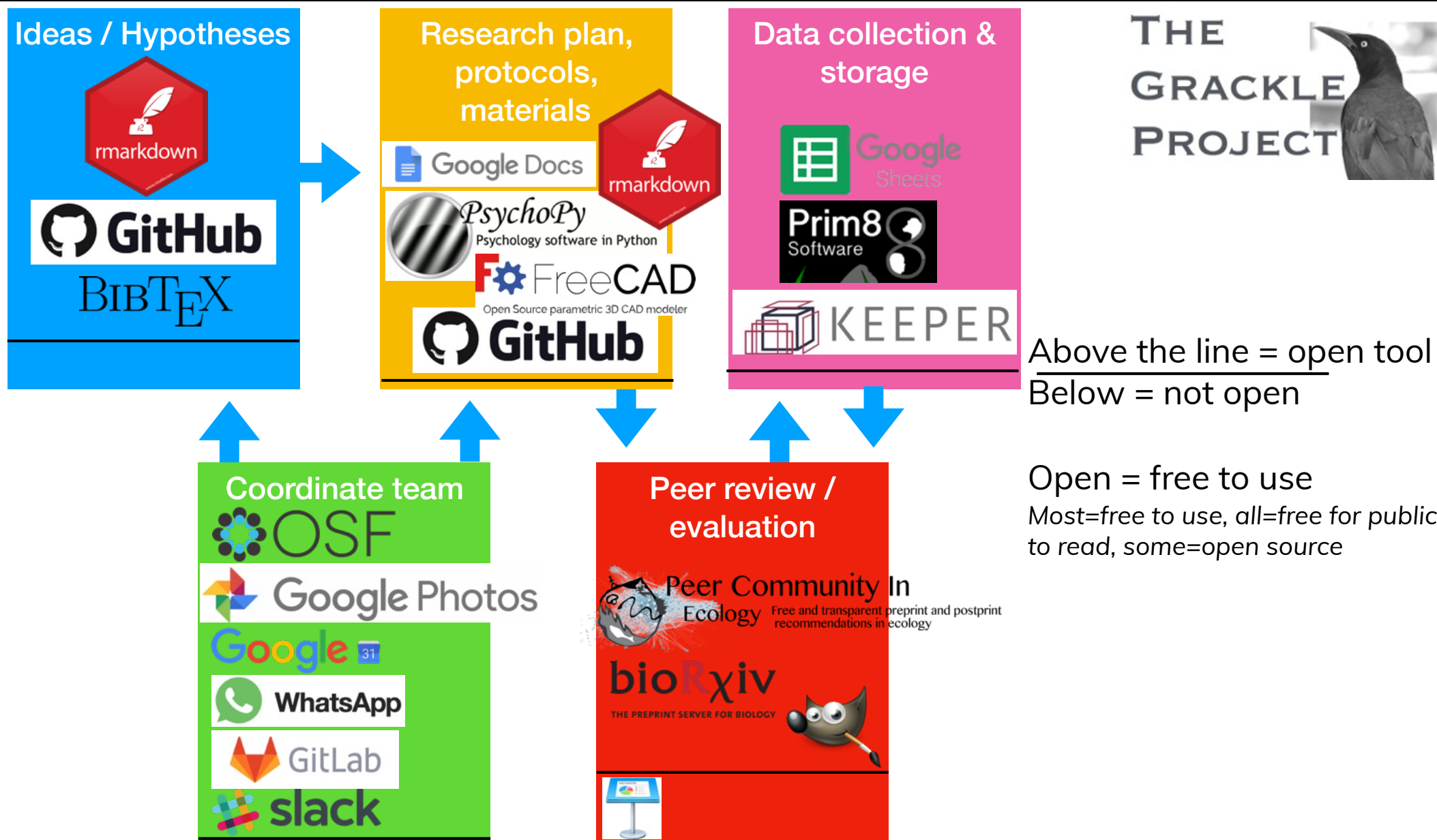
and VERIFY... ...Closed *vs.* transparent research process
research

GENERATE
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*Making my research readable
and verifiable = better & faster*

- Perception of prestige *vs.* tackle implicit biases
- Select based on metrics *vs.* access to opportunity
- Wealth *vs.* ability

Making my research readable & verifiable saves time and increases its value



See GenR blog for a conversion of this work flow to all open source tools:
<https://genr.eu/wp/making-research-workflow-open-source/>

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GENERATE *Incentivizing open, evaluating ability*

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Barriers to knowledge generation

Only people like ourselves can access the knowledge we generate: English-speaking academics at wealthy institutions^{1,2}

This **blocks progress** in research and applications

Increasing diversity in research and researchers can help address this limitation³

One way to increase diversity...
<https://opensciencemooc.eu>



Mar Candela
@marcandela77

Follow

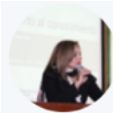
Elsevier continues to be among the biggest barriers towards public access to research, preventing its use as a fundamental right for education & advancement of our society-
#DemocratiseKnowledge bit.ly/2DAxW2n



¹Amano & Sutherland 2013 *Proceedings B*, ²Amano et al. 2016 *PLOS Biology*, ³diversityinacademia.strikingly.com, <https://blogs.scientificamerican.com/voices/diversity-in-stem-what-it-is-and-why-it-matters/>, <https://twitter.com/marcandela77/status/1062278950607638528?s=09>

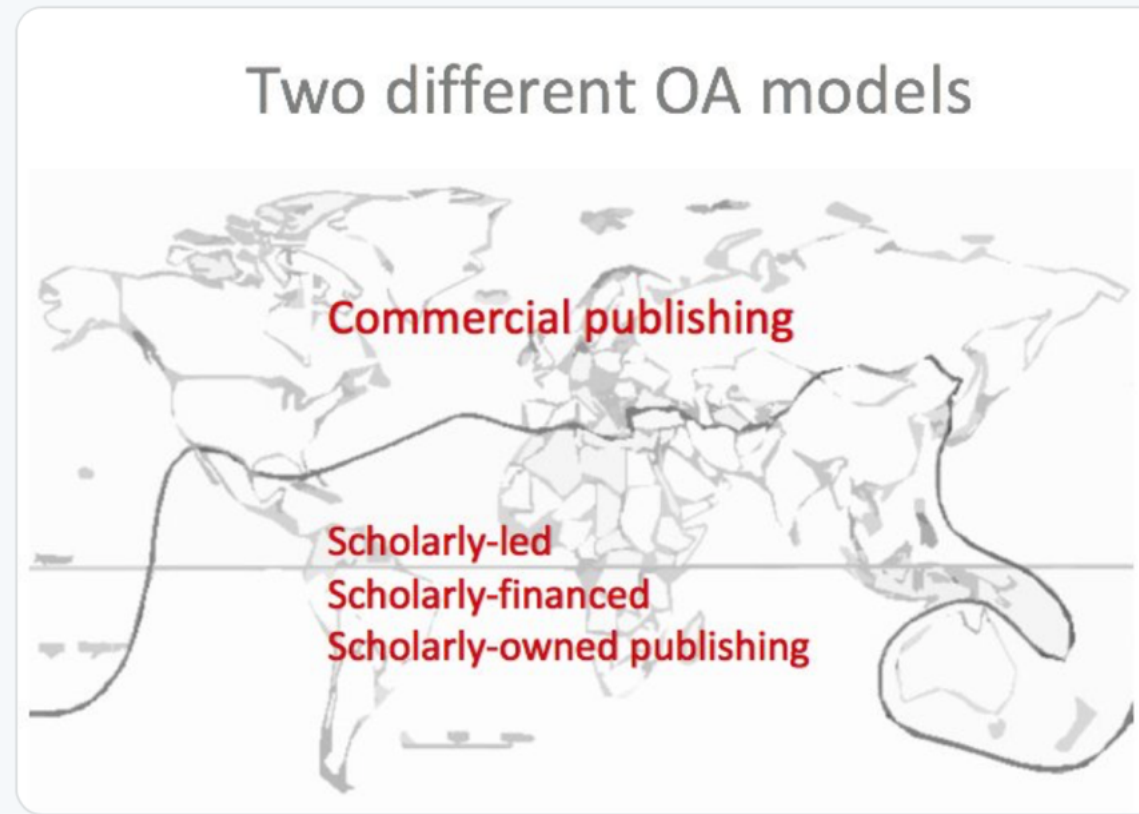
Prestige = barrier to knowledge generation

Open Global South
conference 2017 UC
Davis Library & UC Law¹



Arianna Becerril @ariannabec · 25 May 2017

Two different models, hey latin people we're doing good in #OpenAccess
#OpenGlobalSouth #DangerousAPC amp.theguardian.com/higher-educati...



Rachael G. S.
@rach_scholcomm



#OpenGlobalSouth Do we agree on
"access"? i.e. Who gets to read (access to
scholarship) v. who gets to publish (access to
publishing system)

4:45 PM - 25 May 2017

¹<https://livestream.com/UCDavis/OpenDigitalSouth2017/videos/157043119>
<https://twitter.com/ariannabec/status/867808894613020672>
https://twitter.com/rach_scholcomm/status/867889362070941696

Incentivize open in adverts

Essential requirements in **job adverts**¹:

- require evidence/willingness to engage in open practices



Chris Chambers ✓
@chrisdc77

Following

Chris Chambers (Cardiff)
& Felix Schönbrodt (LMU)

Level 0 = no commitment
to open research

Level 3 = only those with
proven track record of
open practices are
interviewed/hired

We're developing a scheme to promote
#openscience in hiring policies.
@nicebread303 & I need your feedback
please!



Open Hiring Policy - Modular Certification Initiative

Open Hiring Practices: Modular Certification Initiative Summary
and aims: One potentially powerful way to normalise open
scientific practices is to explicitly value them in hiring policies ...

docs.google.com

twitter.com/chrisdc77/status/871733428433104897, osf.io/afwre/ & jobs.zeit.de/jobs/muenchen_professur_w3_fuer_sozialpsychologie_121431.html

Evaluate ability, not privilege

Essential requirements in **job adverts**:

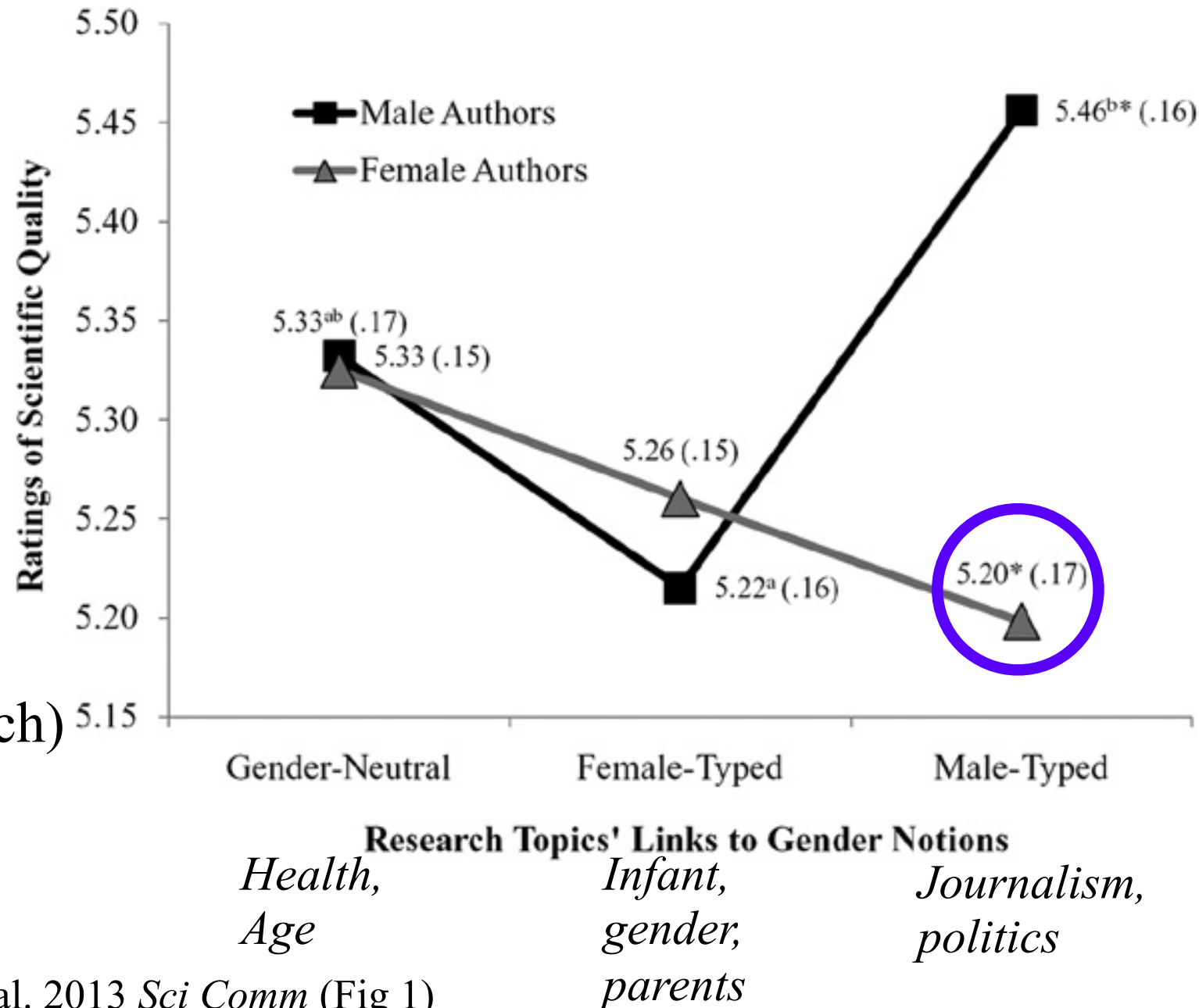
- assess research quality directly (DORA¹)
- must be good role models for groups traditionally underrepresented in STEM

...because **metrics** can be gamed and are more a **sign of privilege** than quality

For example, women are less likely to be first authors of papers in journals with high impact factors², thus men are more likely to have a “good” CV, but only because of implicit biases

¹<https://sfdora.org>, ²Filardo et al. 2016 BMJ

Implicit biases block assessment of quality: Women's research **rated lower quality**



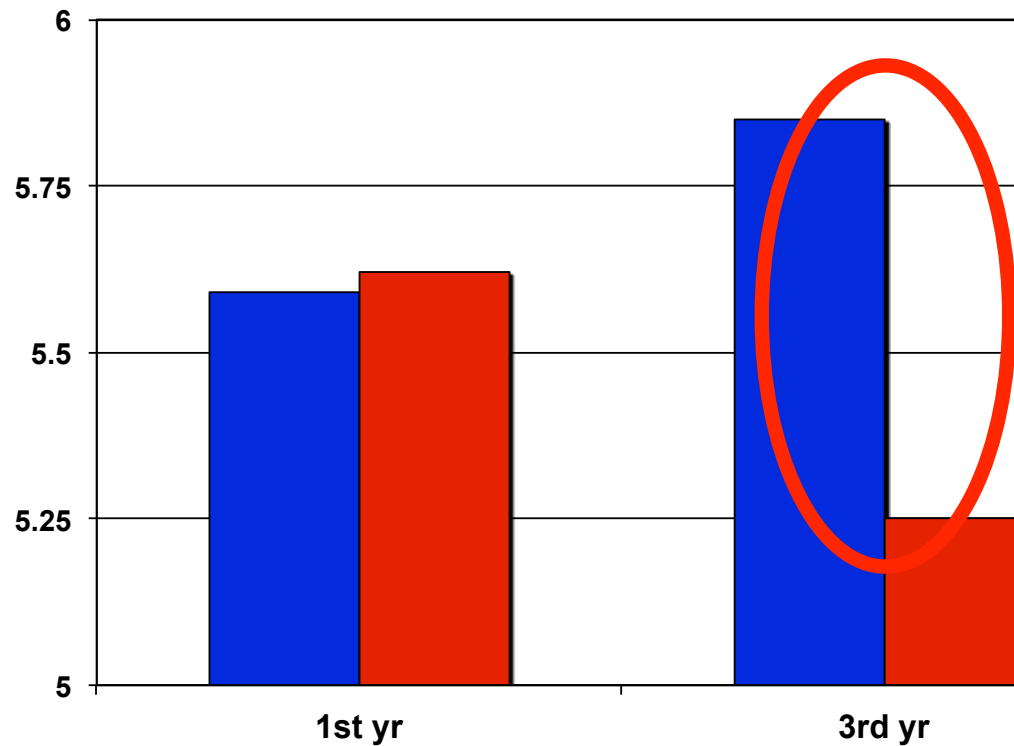
Risk taking
(publishing research)
is **more costly for women**
(lower payoff)

Knobloch-Westerwick et al. 2013 *Sci Comm* (Fig 1)

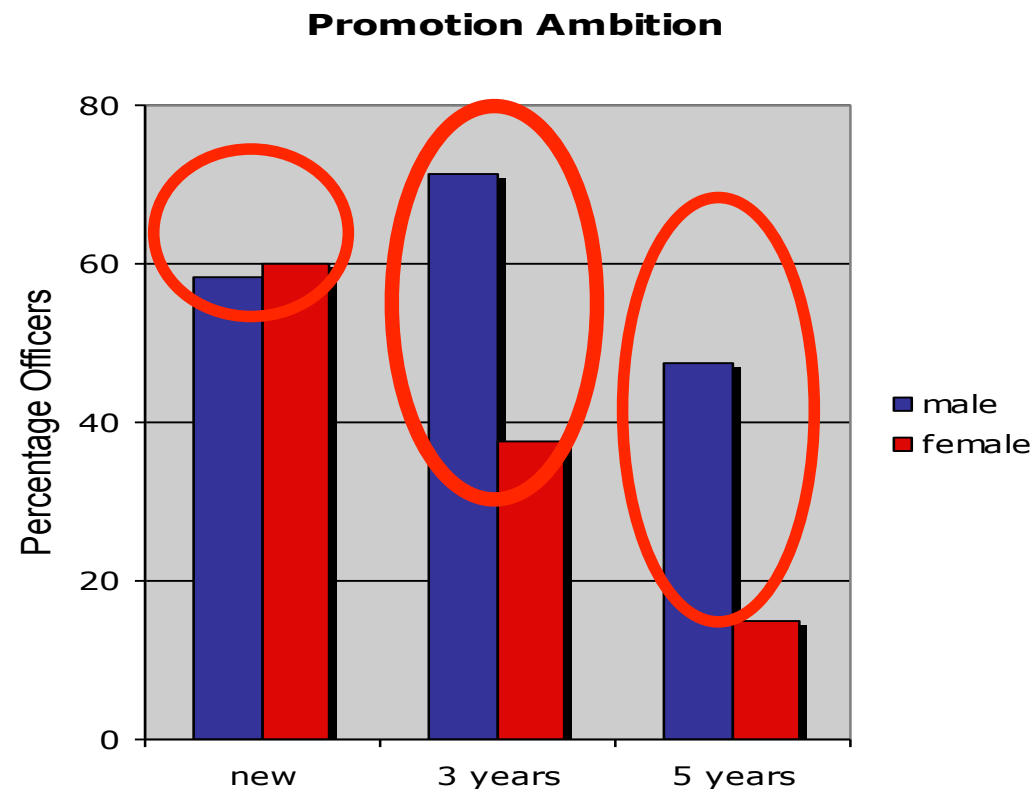
Women are **NOT** more risk averse than men

Differences in Ambition?

Surgeons



The Police service



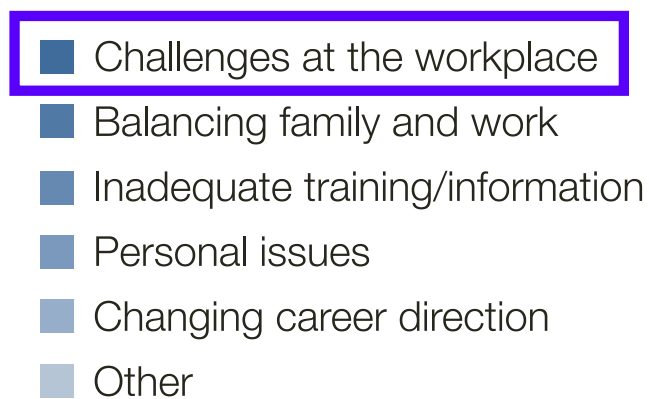
Women are **NOT** more risk averse than men

Women are less likely to take risks

(apply, interview, do research, ask for promotion, etc.)

because they are **less likely to receive a reward** for such efforts

“the underrepresentation of women at the top in terms of voluntary decisions not to pursue leadership may be a **strategic response** to discrimination” (Ryan et al. 2007 *Soc Pers Psych Compass*, p. 267)



*Non-supportive
workplace culture*

n=954 female alumna of
Murray Edwards College 2014

Prestige blocks knowledge generation: Tackling implicit biases

- **Discover** your implicit biases:
<https://implicit.harvard.edu>
- Gender language **calculator**
<http://gender-decoder.katmatfield.com/about>, use “they”
- **Recruit** via groups that support URMs
- Consider background of person behind the CV: do they have enough privilege to **access** opportunities considered “good”?
- Consider the **evidence** before judging a top woman harshly
- Ensure **50% female speakers + other URMs** in seminars/conferences (need to see role models). ALWAYS well qualified women - stop and think

A “good” CV is more an indicator of prestige and access to opportunity

Is science only for the rich?

Around the world, poverty and social background remain huge barriers in scientific careers

21 September 2016



Corin@ Logan
@LoganCorina

#Prestige=subjectively defined by the privileged. No wonder only privileged have it. Prestige=bad 4 science & bad 4 non-privileged scientists

WhoseKnowledge? @WhoseKnowledge

Latin America has most #openaccess journals. >1000 journals in @RedeSciELO network. Have to prove credibility daily #OpenGlobalSouth

← Request a woman scientist
500womenscientists.org



<https://twitter.com/LoganCorina/status/868491581145444352>

https://www.nature.com/news/is-science-only-for-the-rich-1.20650?WT.mc_id=FBK_NatureNews&sf81929464=1

I have argued research value increases when...

1. It is **readable, understandable, and verifiable.**

The massive amounts of money paid to publishers
= a barrier to researchers, academia, and the public

2. **Anyone can generate and disseminate it,**
regardless of wealth, access to opportunity,
perception of prestige, and evaluator implicit biases

We can **stop exploiting and discriminating now** because...

- ethical open options exist
- we can address our implicit biases

We won't be...



Corina Logan & Laurent Gatto



Leading individuals and
institutions in adopting open
practices to improve research rigor

ECRs often feel **pressured** into taking actions
against our ethics to pursue an academic career
(e.g., publishing in particular journals)

ECRs: Sign the **petition** to help us change academic culture

Non-ECRs: Join the list of **supporters** by valuing open practices,
especially when making decisions about hiring, promotion, and grants

www.BulliedIntoBadScience.org | Twitter: [#BulliedIntoBadScience](https://twitter.com/BulliedIntoBadScience)

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