



Open Peer Review: How and Why

TONY ROSS-HELLAUER

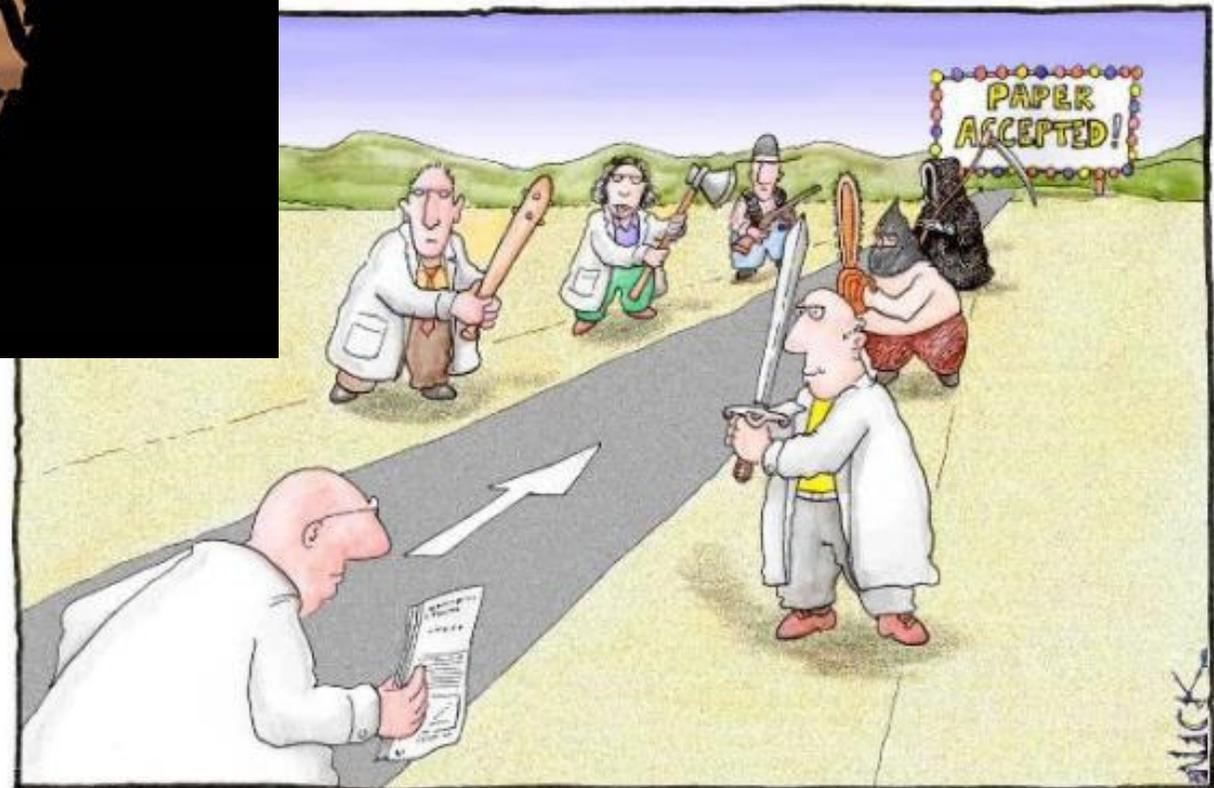
PEERE Training School on Peer Review

University of Split School of Medicine, 15-17 May 2018



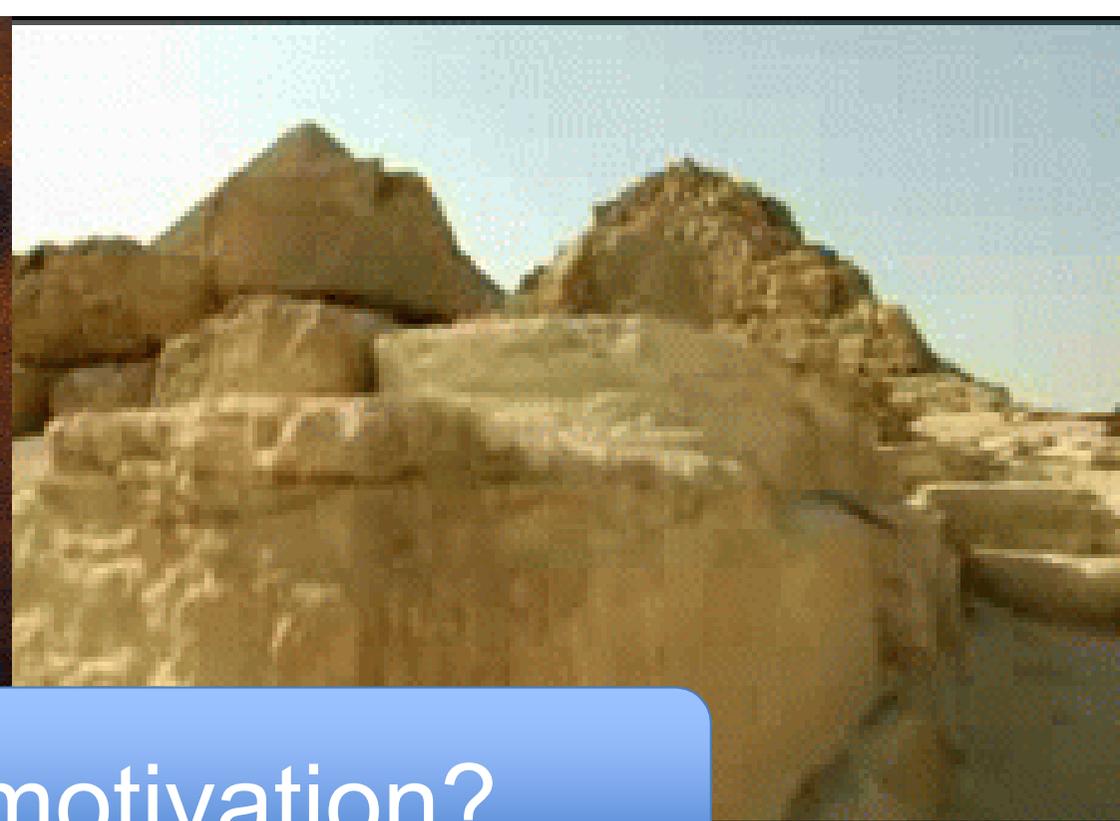
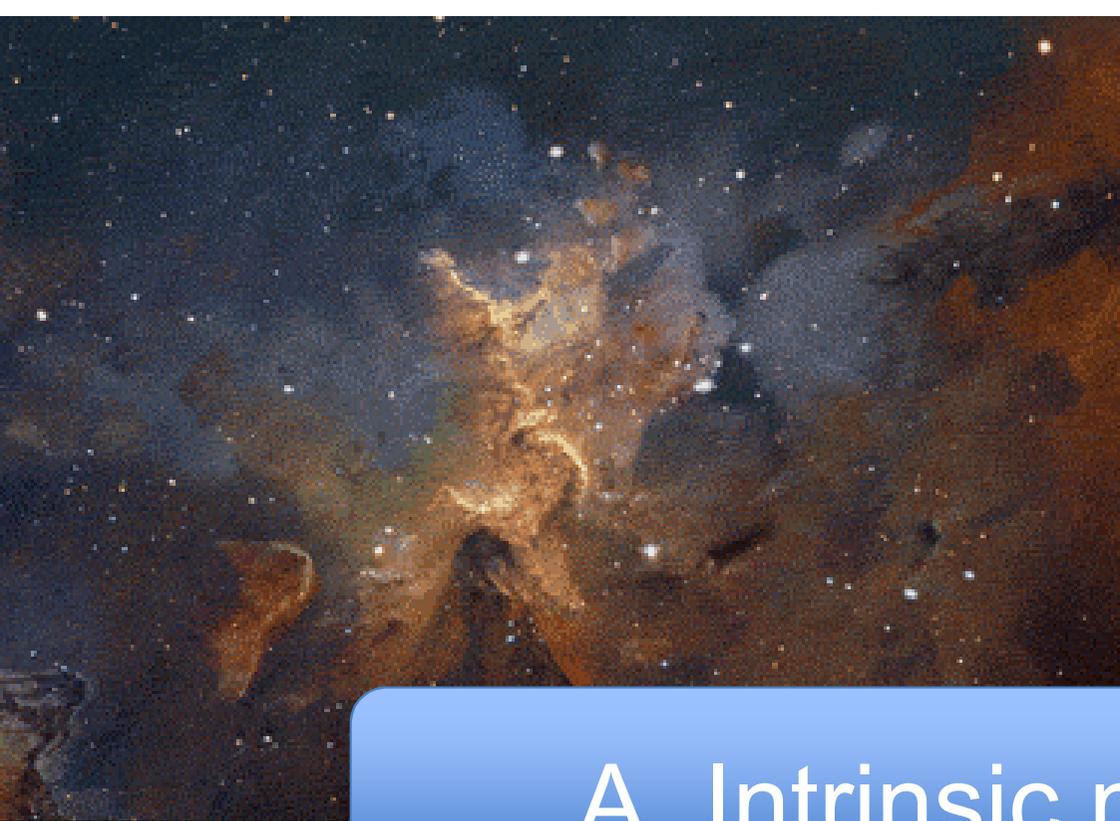
Q. Why do science?

Peer review as altruism or aggression?

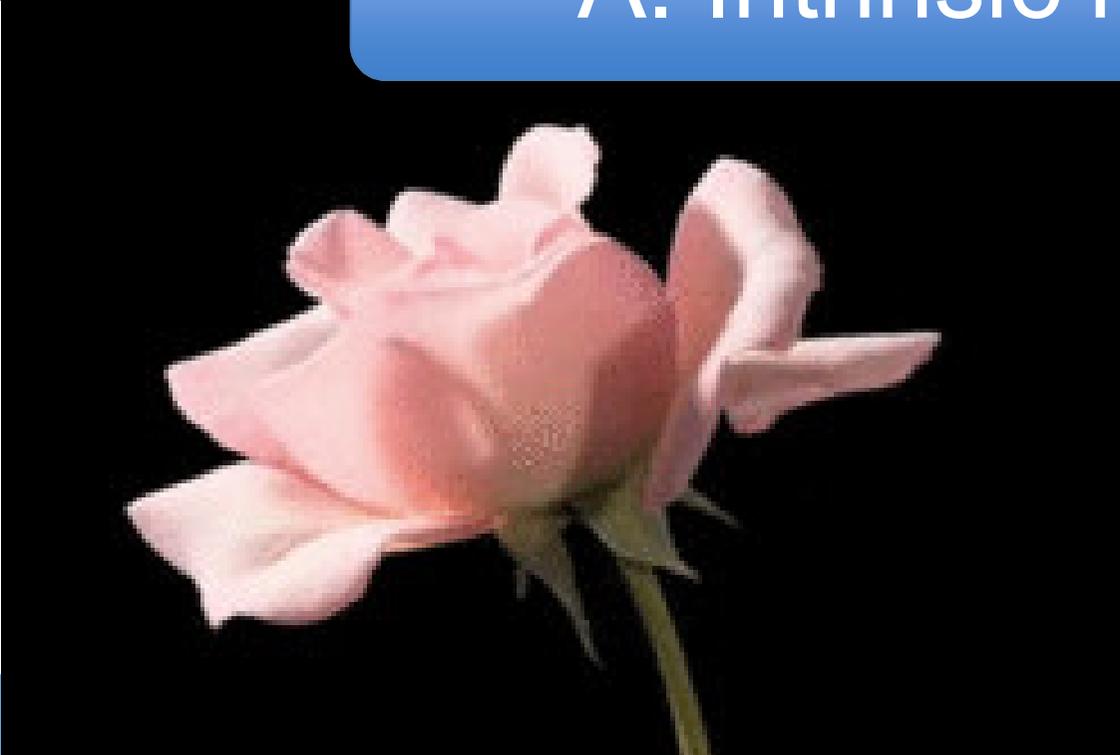


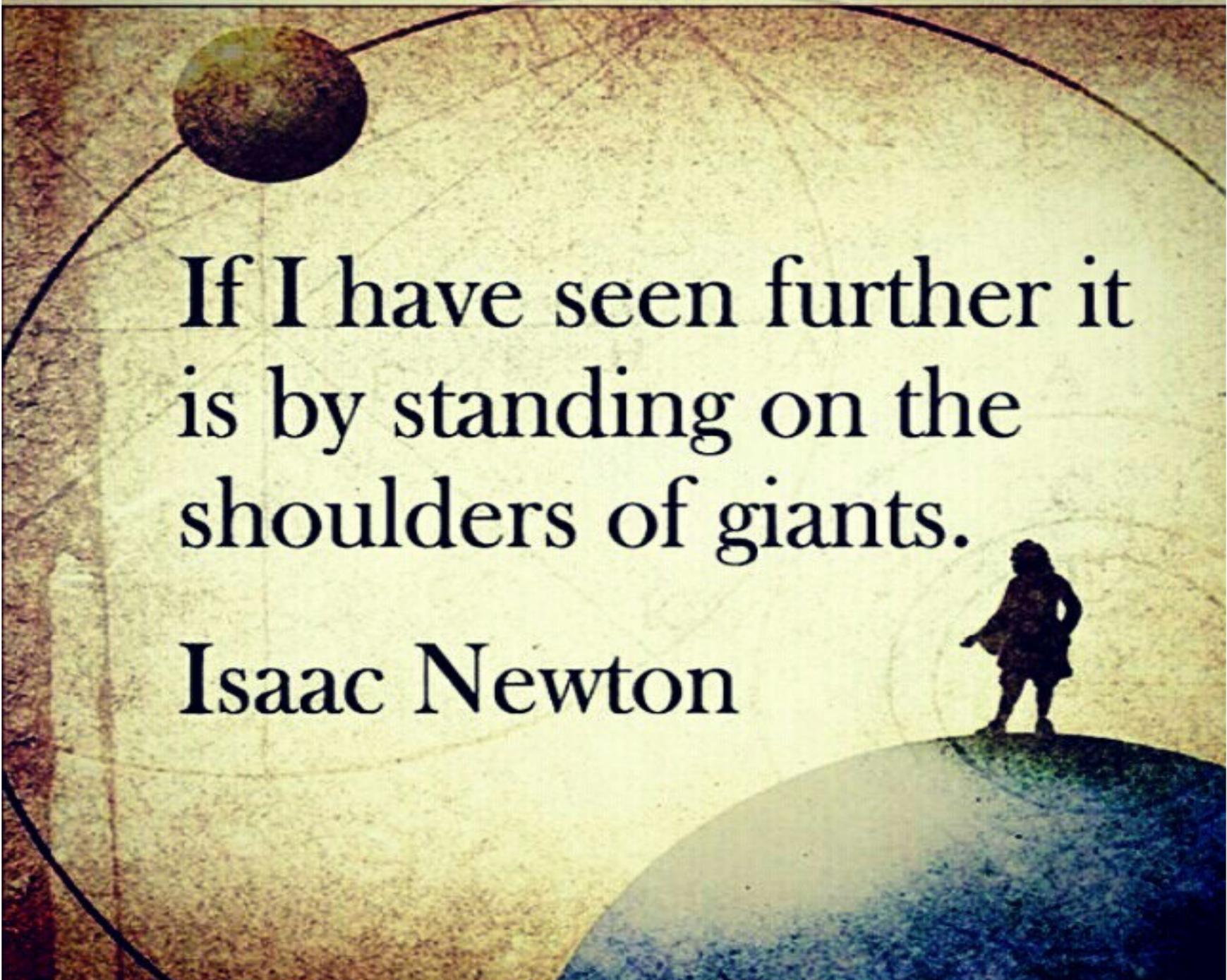
Q. Why do science?

A. Because the world is endlessly fascinating?



A. Intrinsic motivation?





If I have seen further it
is by standing on the
shoulders of giants.

Isaac Newton

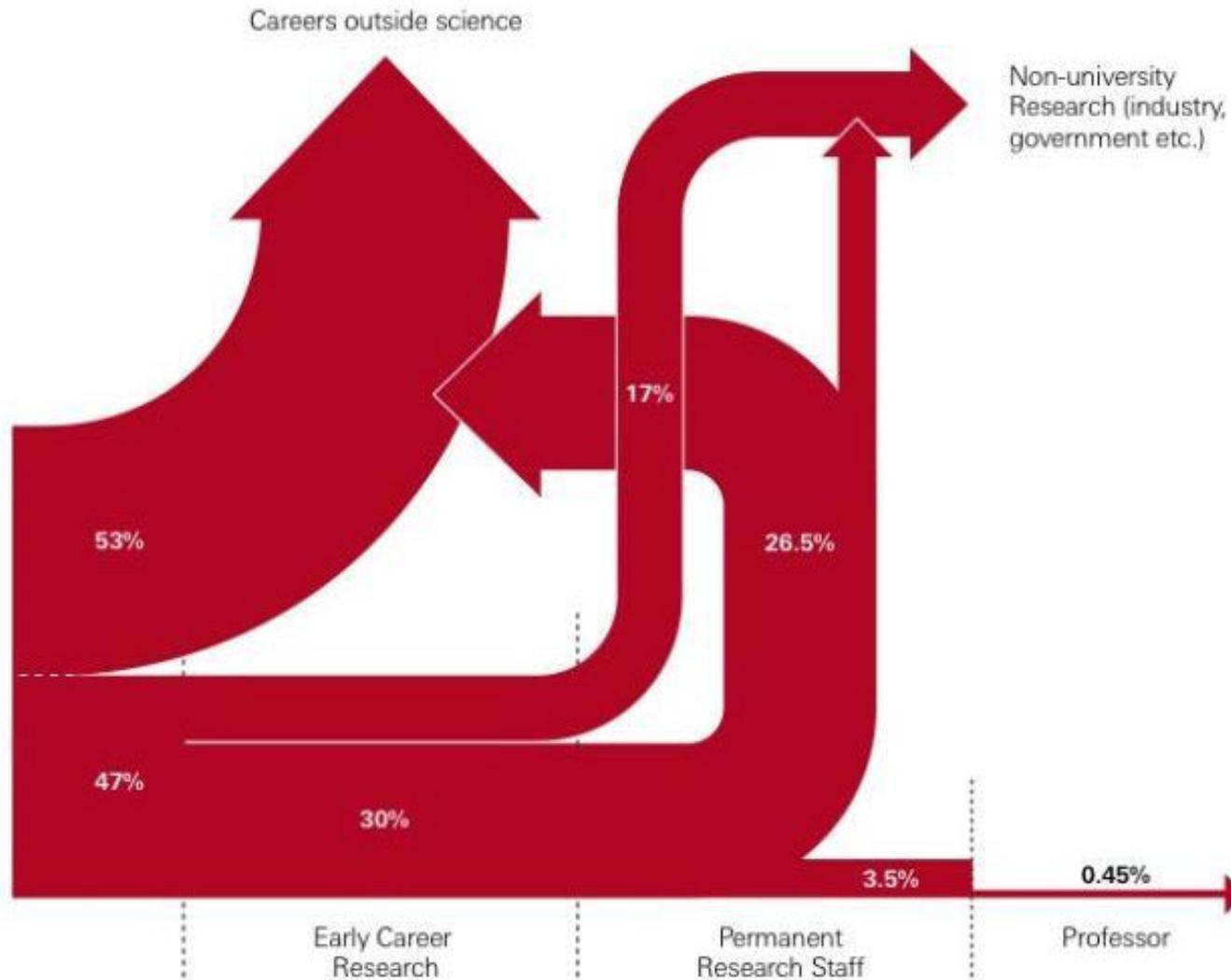
Peer review as altruism?



As being a good academic citizen?

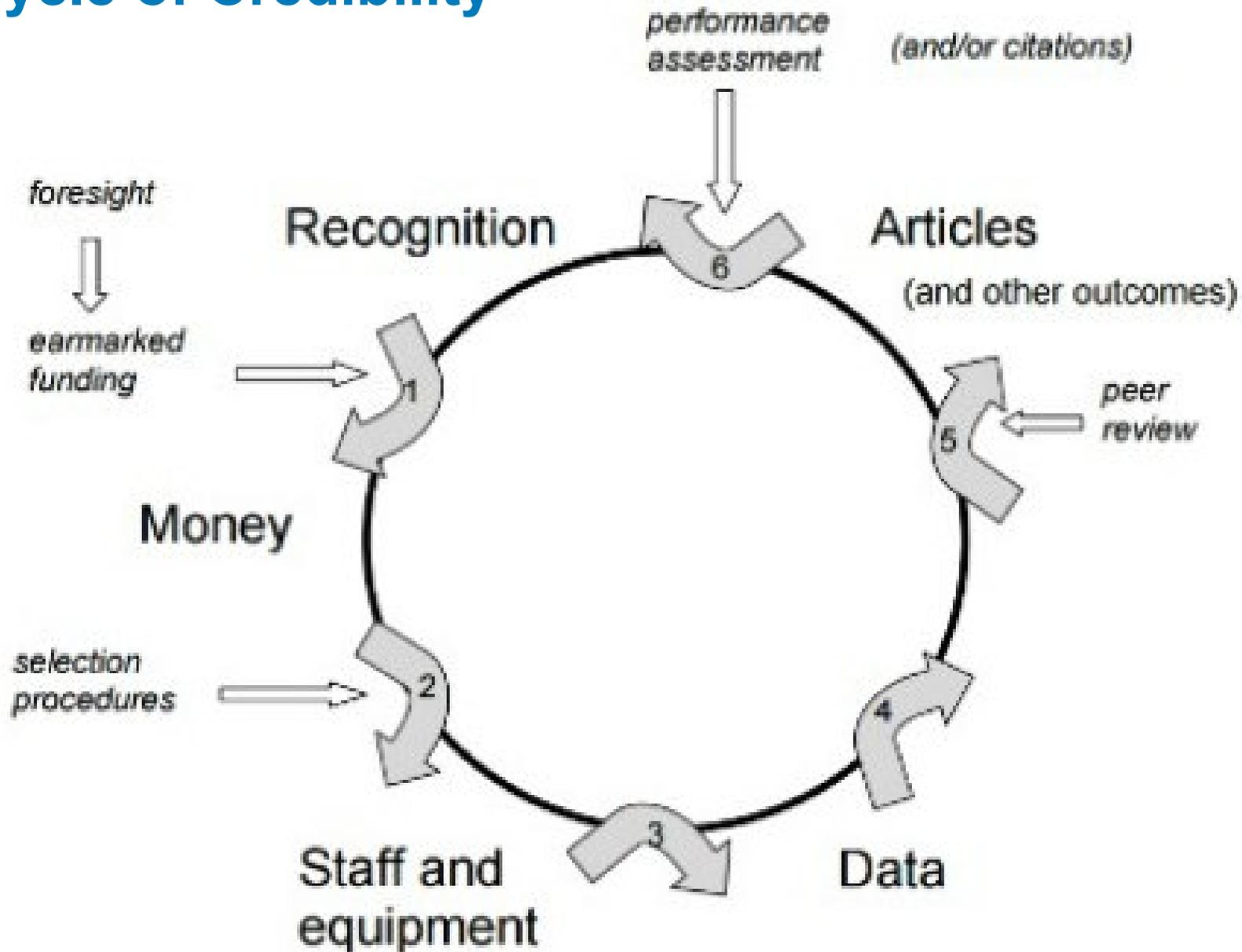
Q. Why do science?

Q. Why do science?
A. Status?

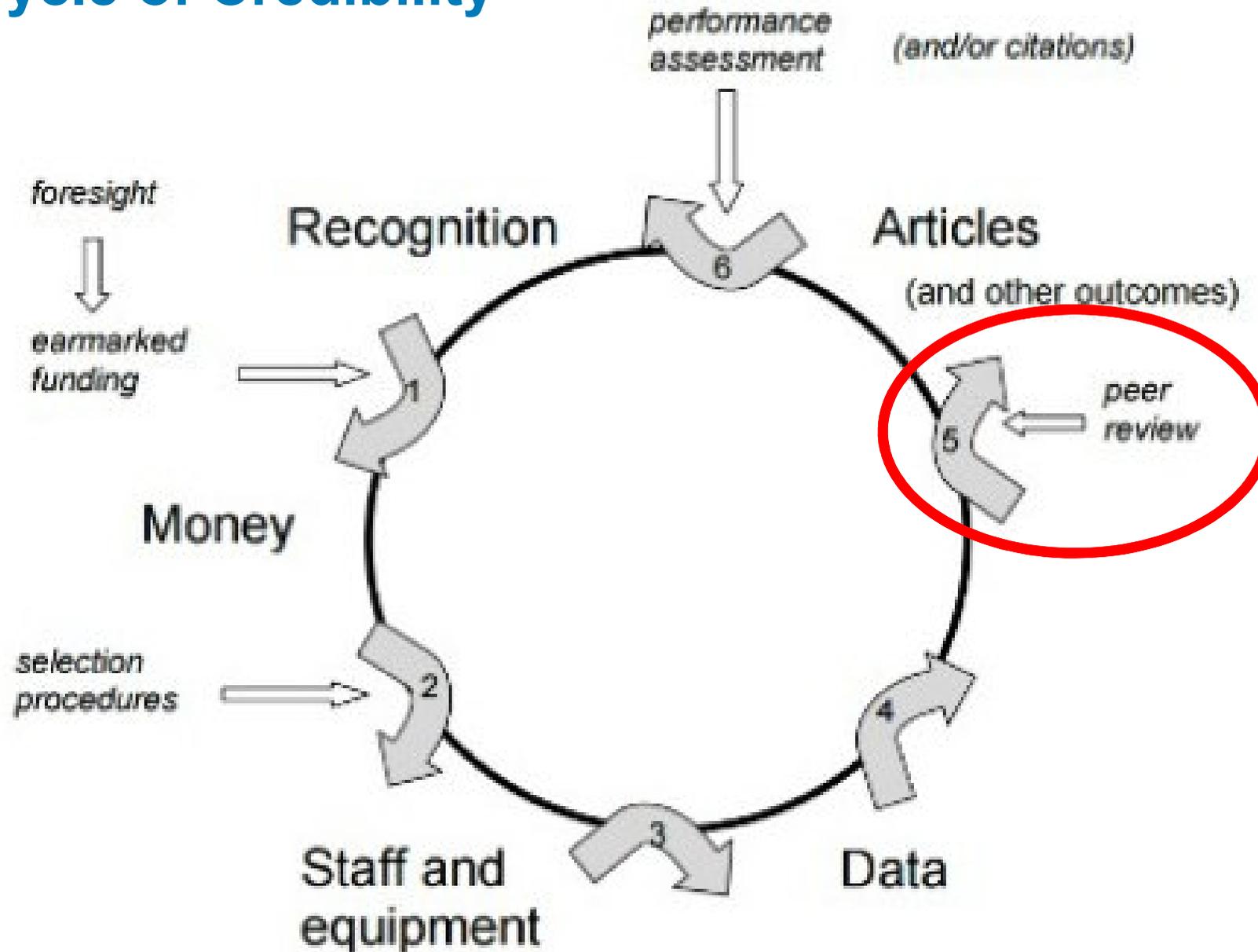


https://royalsociety.org/~media/Royal_Society_Content/policy/publications/2010/4294970126.pdf

Bruno Latour and Steve Woolgar (1979). The Cycle of Credibility



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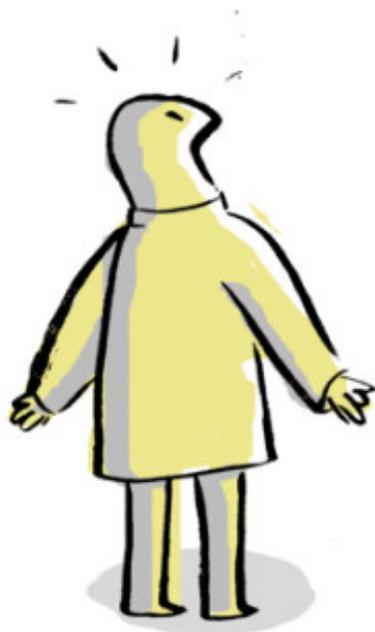


Authors are like ...

PUBLISH



PUBLISH
OR
PERISH



PUBLISH
IN HIGH IMPACT
JOURNALS
OR
PERISH



PUBLISH
FREQUENTLY IN
HIGH IMPACT
JOURNALS
AND
MAYBE
YOU WON'T
PERISH

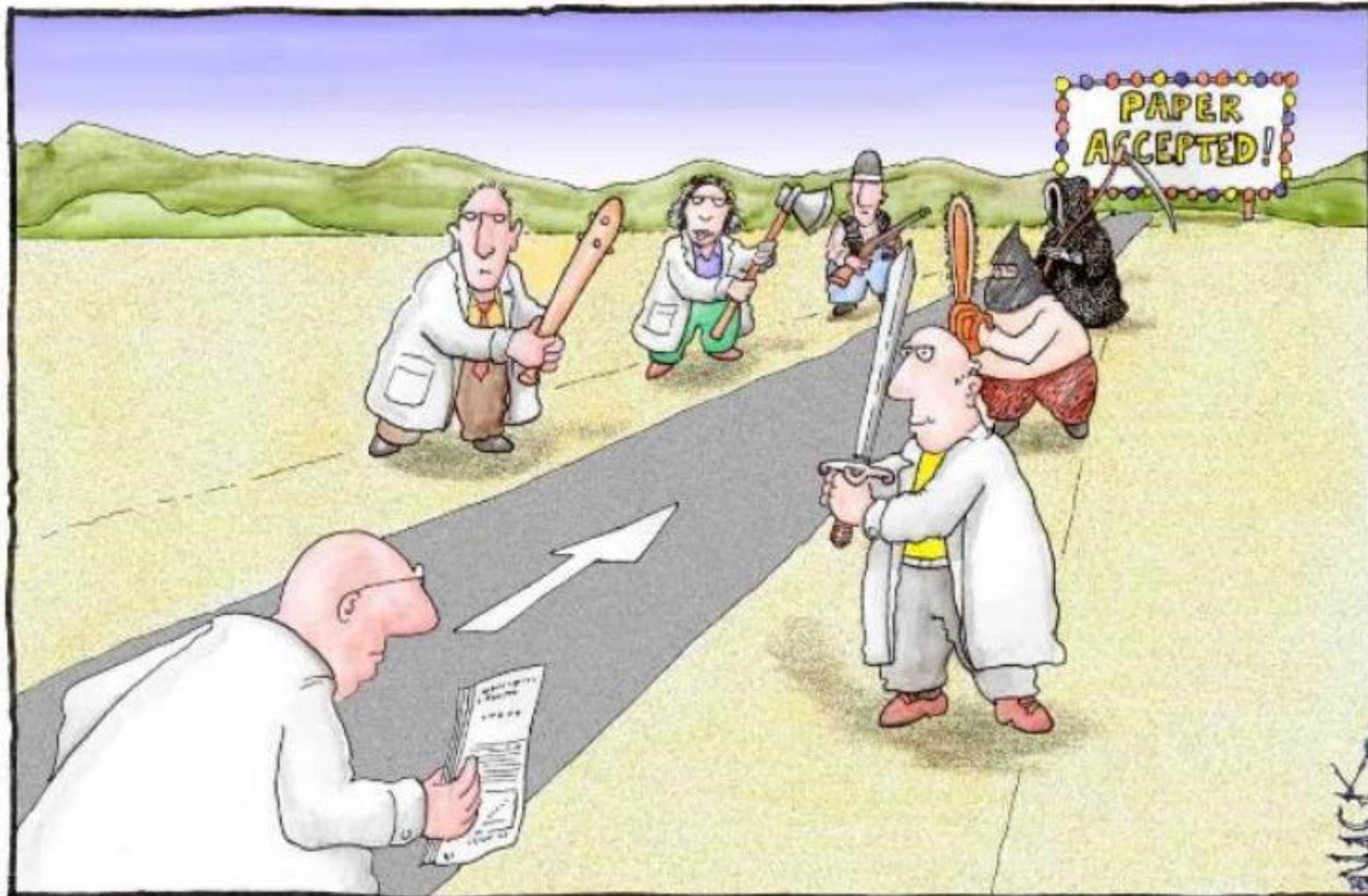


[facebook.com/pedromics](https://www.facebook.com/pedromics)

Reviewers are like ...



Peer review as aggression?



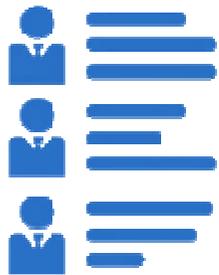
**(We're getting to Open
Peer Review, I promise!)**

Peer review is generally:



Anonymous: reviewers unknown to authors, or both authors and reviewers unknown to each other

Opaque: neither the process nor the reviews are made public



Selective: reviewers selected by editors

In other words, peer review is a black-box.
Decisions are made in the shadows.



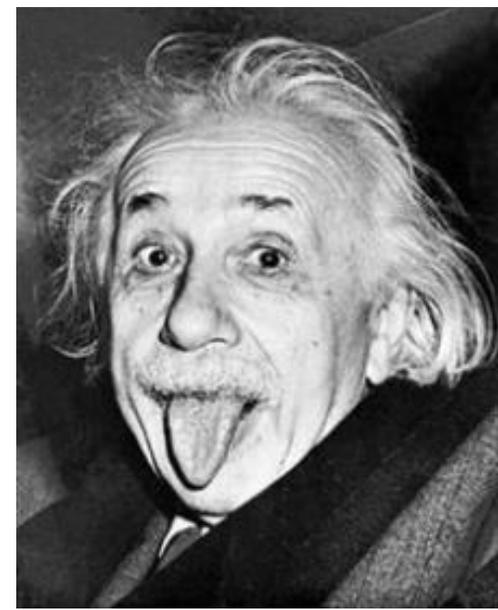
Peer review is the bedrock of
scholarly quality assurance ...

... but ...

1. It's not as old as we might think
2. It's got problems

Peer review as we understand it has only been in broad use since the 1950s

Einstein Versus the *Physical Review*



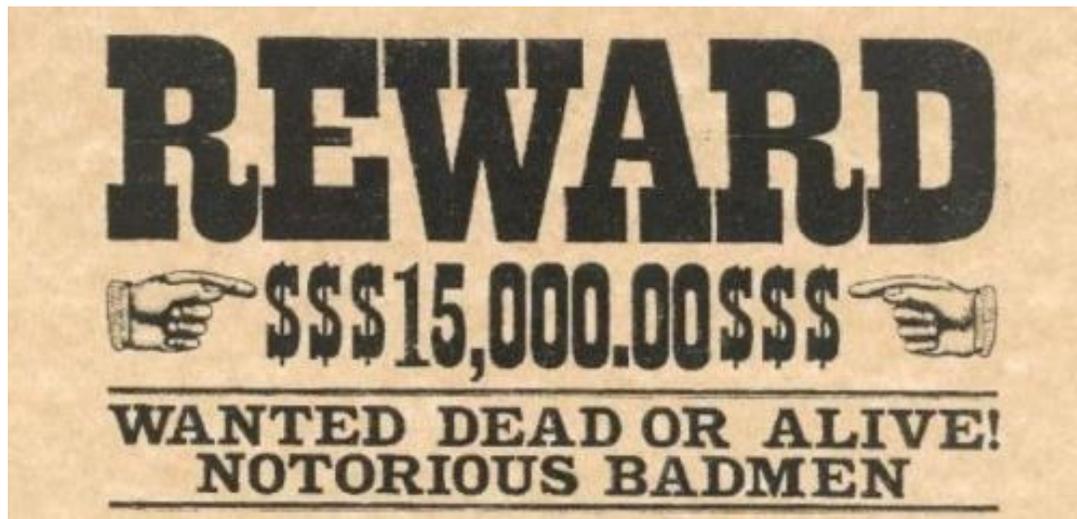
Dear Sir,

*We (Mr. Rosen and I) had sent you our manuscript for publication and had **not authorized you to show it to specialists before it is printed. I see no reason to address the—in any case erroneous—comments of your anonymous expert.** On the basis of this incident I prefer to publish the paper elsewhere.*

Problems with peer review



Lack of incentives



Accountability
& bias



Wasted effort



Open Science

Bad systems > good people?

The incentives
underlying science ...
(publications = citations
= career advancement)
... do not necessarily
promote the best
science



At the same time
... knowledge is
a public good
and should be
accessible to
everyone, right?



Principles of Open Science

Transparency

Accountability

Inclusivity

Responsibility

Community &
Collaboration

Visibility

Rigour

Equality

Public good

Reproducibility

Findability

Accessibility

Interoperability

Re-usability

Innovation

Open Science is more than just Open Access

Opening up scientific processes and products from all levels to everyone ...

- Open Access to publications
- FAIR Data
- Open Source software
- Open methods, protocols & materials
- Citizen Science
- Open Evaluation / **Open Peer Review**



Q. What is open peer review?

A. It's complicated

“Open Peer Review” encompasses diverse constellations of many distinct aspects

** 122 definitions collected and analysed **

** 22 distinct configurations of 7 traits identified **

Primary aspects

- Open identities
- Open reports
- Open participation

Secondary aspects

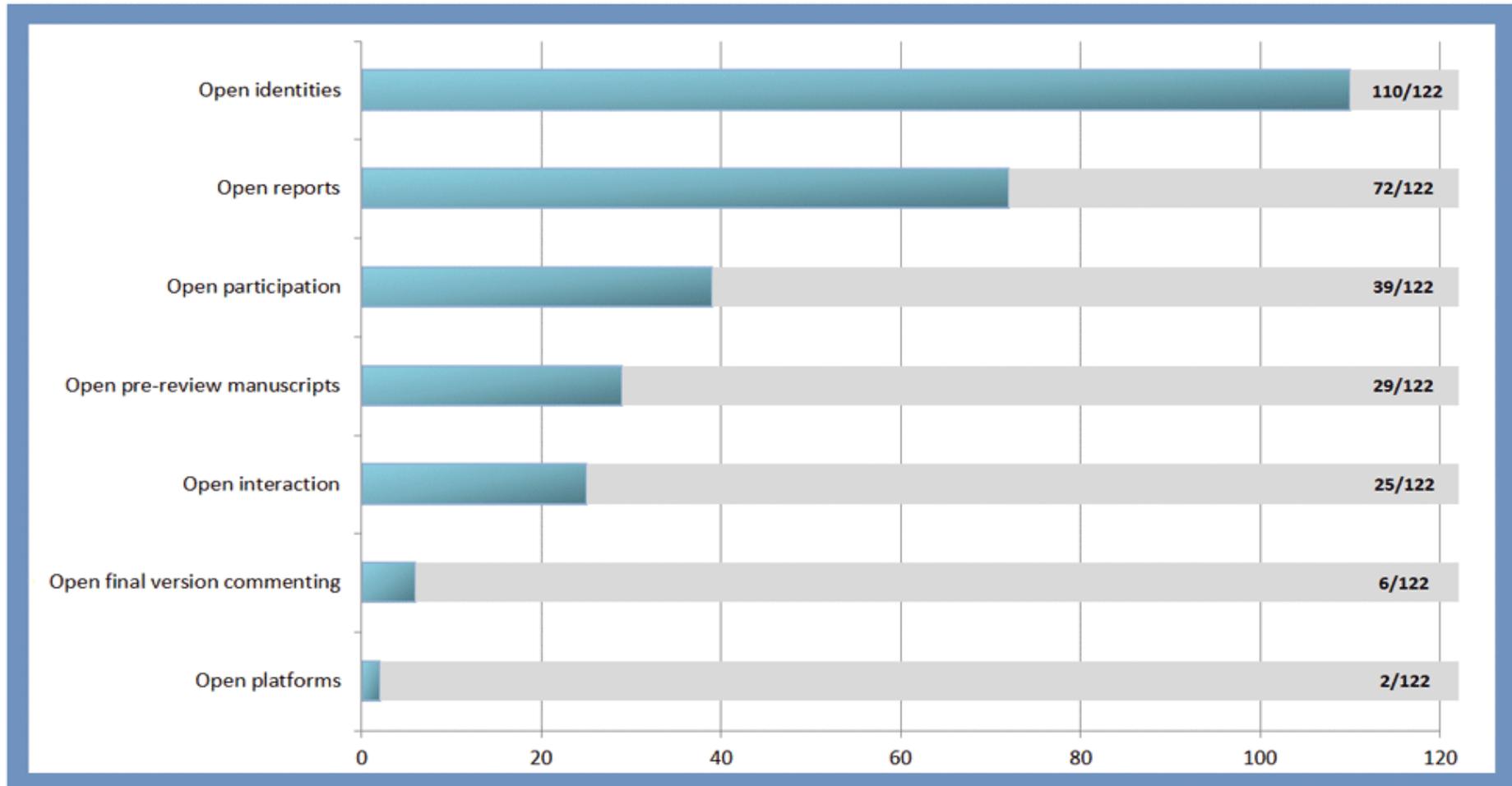
- Open interaction
- Open pre-review manuscripts
- Open final-version commenting
- Open platforms



Image CC BY AC McCann, w/ amendment (by me)

See: Ross-Hellauer, 2017, "What is open peer review? A systematic review", F1000Research (DOI: 10.12688/f1000research.11369.2)

Distribution of OPR traits amongst definitions



Ross-Hellauer, 2017, "What is open peer review? A systematic review", F1000Research (DOI: 10.12688/f1000research.11369.2)

22 unique configurations of OPR traits

n=	Open identities	Open reports	Open participation	Open interaction	Open pre-review manuscripts	Open final-version commenting	Open platforms
41	■						
29	■	■					
9	■		■		■		
6	■		■	■			
6	■		■	■	■		
5	■		■		■		
5	■		■				
4		■					
2	■			■			
2			■				
2			■		■		
1		■	■		■		
1			■			■	
1	■	■	■	■	■	■	
1	■	■	■		■	■	
1	■	■	■	■	■	■	■
1	■	■	■	■	■	■	
1			■	■	■		
1	■		■		■		
1	■	■	■		■	■	■
1		■	■	■	■		
1	■	■		■			

Ross-Hellauer, 2017, "What is open peer review? A systematic review", F1000Research (DOI: 10.12688/f1000research.11369.2)



OPEN IDENTITIES

Authors and reviewers are aware of each other's identities

Positives

- Foster increased accountability and quality by linking scholars' names to their judgements
- Increased transparency could help avoid conflicts of interest
- More civil language (in review and response)

Negatives

- Without protection of anonymity, reviewers might blunt their opinions for fear of reprisals (esp. from senior peers)
- “Blind” peer review potentially protects reviewers from social biases (and “double blind” also protects authors)



OPEN REPORTS

Review reports are published alongside the relevant work

Positives

- Reports contain valuable contextual information
- Open reports to wider scrutiny
- Perhaps increase review quality
- Enable credit and reward for review work
- Help train young researchers in peer reviewing

Negatives

- Higher refusal rates amongst potential reviewers, as well as an increase in time taken to write review
- Undesirable exposure of criticism (esp. for early career researchers)



OPEN PARTICIPATION

The wider community are able to contribute to the review process

Positives

- Brings greater inclusivity to peer review by expanding the potential pool of reviewers, including to those non-traditional research actors
- Support cross-disciplinary dialogue, avoid silos
- Potentially much increase number of reviewers

Negatives

- Difficulties motivating self-selecting commentators to take part and deliver useful critique
- Self-selecting reviewers tend to leave less “in-depth” responses
- Could just add noise to discussion

Open peer review in use

Journal publishers



ROYAL SOCIETY
OPEN SCIENCE



SPRINGER
NATURE



Also being trialed
for conferences

OpenReview.net

OpenUP

And books

media commons press
open scholarship in open formats

Attitudes to OPR



ATTITUDES TO OPEN PEER REVIEW

Online survey in late 2016 with 3062 complete responses



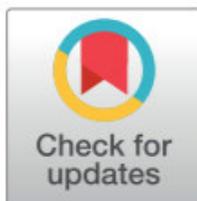
RESEARCH ARTICLE

Survey on open peer review: Attitudes and experience amongst editors, authors and reviewers

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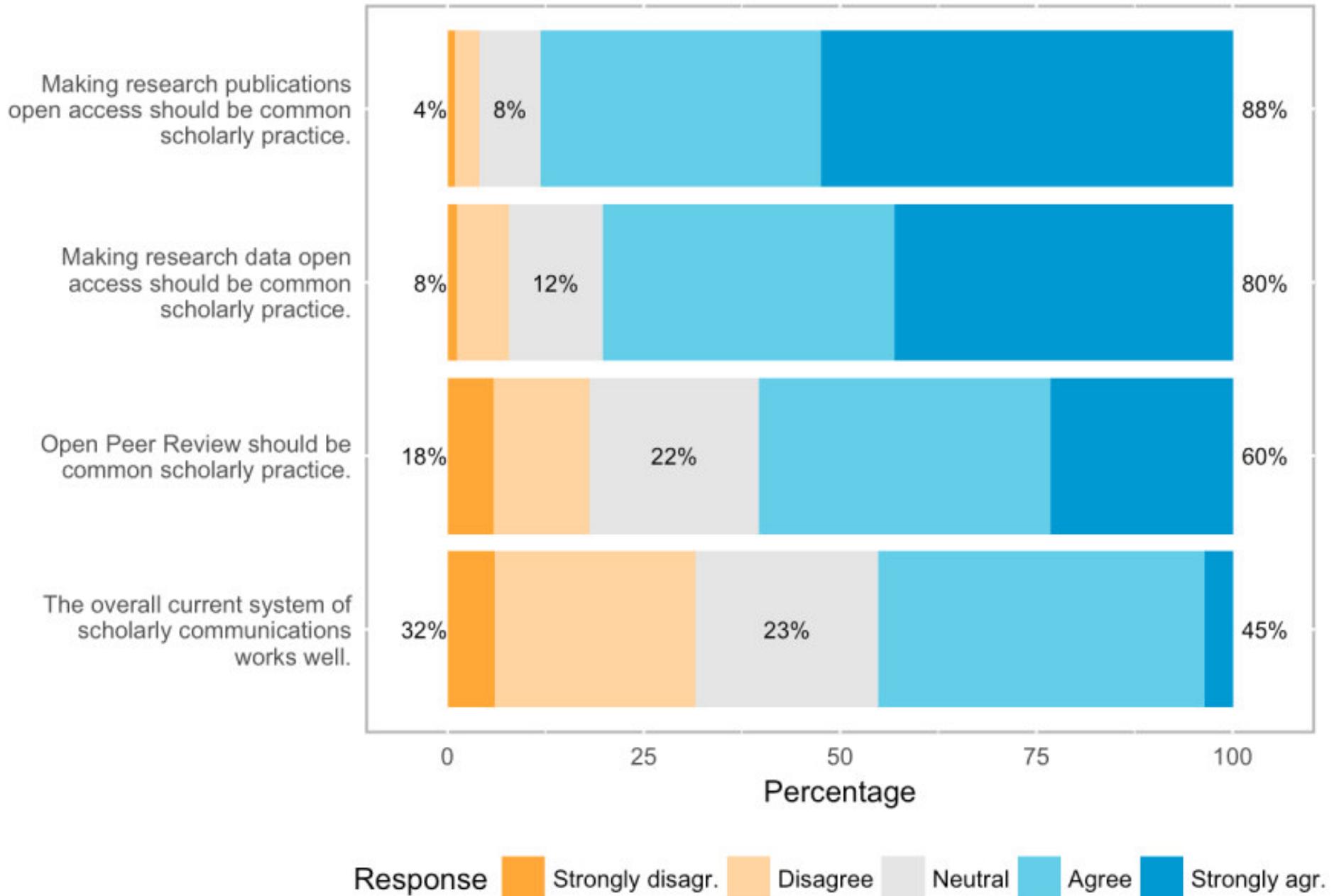


Abstract

Open peer review (OPR) is a cornerstone of the emergent Open Science agenda. Yet to date no large-scale survey of attitudes towards OPR amongst academic editors, authors, reviewers and publishers has been undertaken. This paper presents the findings of an online survey, conducted for the OpenAIRE2020 project during September and October 2016, that sought to bridge this information gap in order to aid the development of appropri-

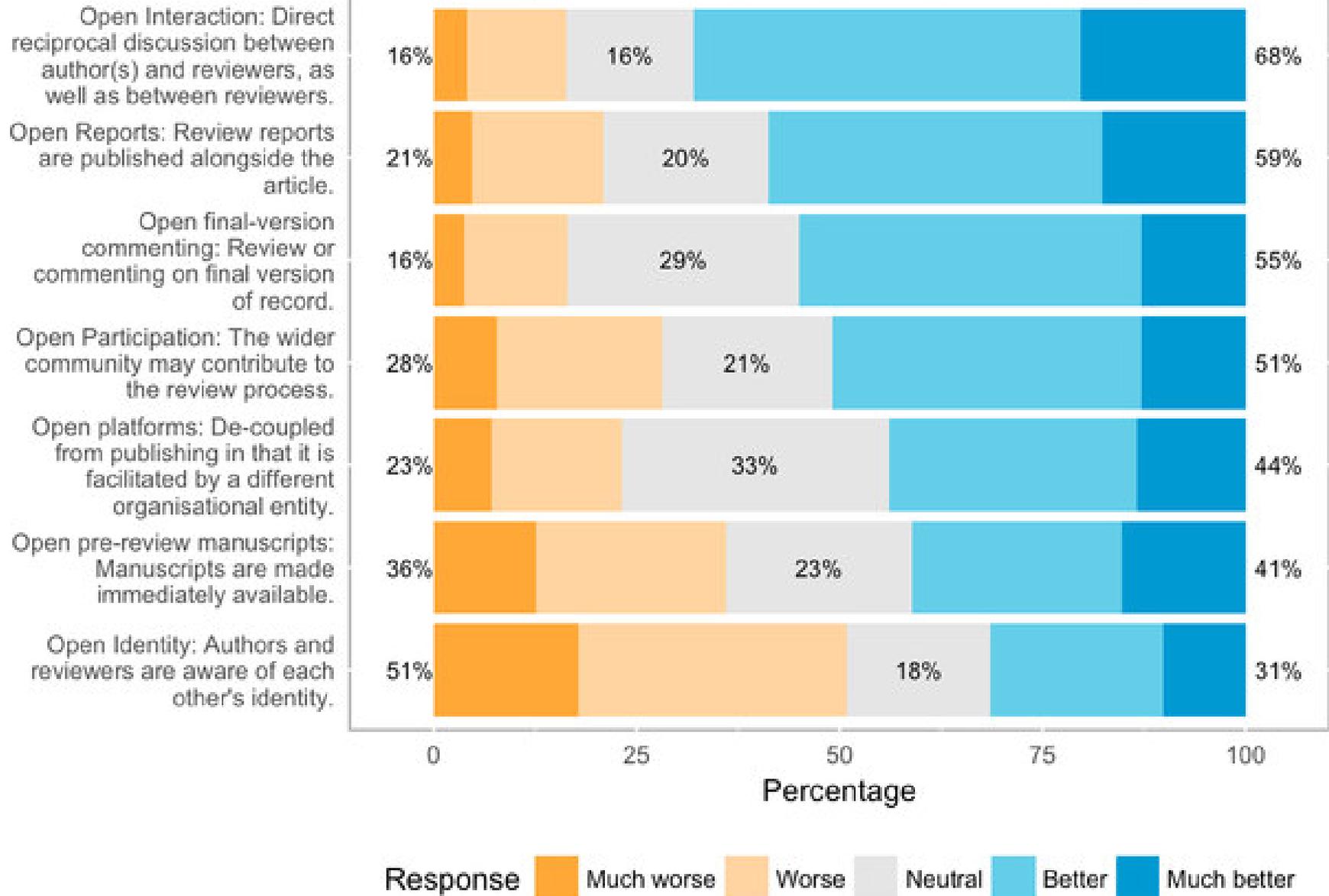
OPEN ACCESS

Statements on scholarly communication





Statements on how peer review may be modified



Ross-Hellauer T, Deppe A, Schmidt B (2017) Survey on open peer review: Attitudes and experience amongst editors, authors and reviewers. PLoS ONE 12(12): e0189311. <https://doi.org/10.1371/journal.pone.0189311>



SURVEY RESULTS SUMMARY

- OPR is already mainstream
 - 76.2% have practical experience
 - 60% believe OPR should be common practice
- Positive reactions to most OPR traits (esp. open interaction, reports, participation)
- However, strong rejection of open identities (47.7% against)

Ross-Hellauer T, Deppe A, Schmidt B (2017) Survey on open peer review: Attitudes and experience amongst editors, authors and reviewers. PLoS ONE 12(12): e0189311. <https://doi.org/10.1371/journal.pone.0189311>

Next steps

What do we need?

- **More transparency** – being clear on peer review policies and what the implications are for reviewers and authors
- **More education** – what OPR is, how to review responsibly
- **Make reviews count more** - make them citable, discoverable, and creditable
 - Exciting new Crossref announcement:
<https://www.crossref.org/blog/making-peer-reviews-citable-discoverable-and-creditable/>





**A lot of reticence is
based on fear ...**

“What is open peer review – and should I be doing it?”

Given the novelty of OPR and its slow but increasing adoption in science, it remains to be seen whether the risks to reviewers' professional identities and time invested are borne out. It also isn't clear to what extent having proof of one's reviewing will serve as an effective professional cachet. Until there's more data on how OPR affects not just authors but also reviewers, I think scientists ought to be wary of donating their time and resources to an uncertain process. On the other hand, we can't obtain more data on the effects of open peer review *if we don't have willing participants.*

And therein lies the paradox of OPR: We won't know if it works until more of us try. So for the good of the future of science, perhaps we need to be willing to participate in an experiment of our own collective making.

Libby Pier, July 2017

<https://libbypier.com/thoughts-musings/2017/7/14/what-is-open-peer-review>

People should innovate, but we should also take an evidence-based approach!

OPR is a very complex issue – what should be made open, in which circumstances, at what stage, to whom?

- “The large number of possible configurations of options presents a tool-kit for differing communities to construct open peer review systems that reflect their own needs, preferences and goals.” (Ross-Hellauer, 2017)

We need more evidence to help judge effectiveness

- “[T]here is often little evidence to support or refute many of these claims [regarding OPR]” (Ross-Hellauer, 2017)

We need to

- Open up the data
- Agree priorities for research

TRANSPOSE

TRANsparency in Scholarly Publishing for Open Scholarship Evolution

TRANSPOSE is a new, grassroots initiative aiming to crowdsource a list of journal policies for (1) open peer review policies, (2) co-reviewer policies, and (3) pre-printing policies. We'll then look at a representative subset of journals in more detail to systematically taxonomize and analyse their stated peer review and preprinting policies. These initiatives will then be complemented by a strategic discussion on how journals could be persuaded to improve their policies. As a final step, we will work to foster data-sharing in order to more systematically test how these innovations affect the quality and efficiency of scholarly communications, as well as their effects on researchers. These actions will mitigate the risks that adopters of innovative practices run, clarifying options and providing evidence of systematic change.

<https://transpose-publishing.github.io/>

Doing open peer review

1. Understand what kind of open peer review you're dealing with
2. Be respectful, constructive and clear in your criticisms and responses to criticism
3. Open peer review facilitates wider discussion
4. Use open peer review reports to learn
5. There is always room to practice open peer review even if it hasn't been formally introduced

Re-cap: 3 primary traits of OPR

Open identities

Authors and reviewers are aware of each other's identity

Open reports

Review reports published alongside relevant article

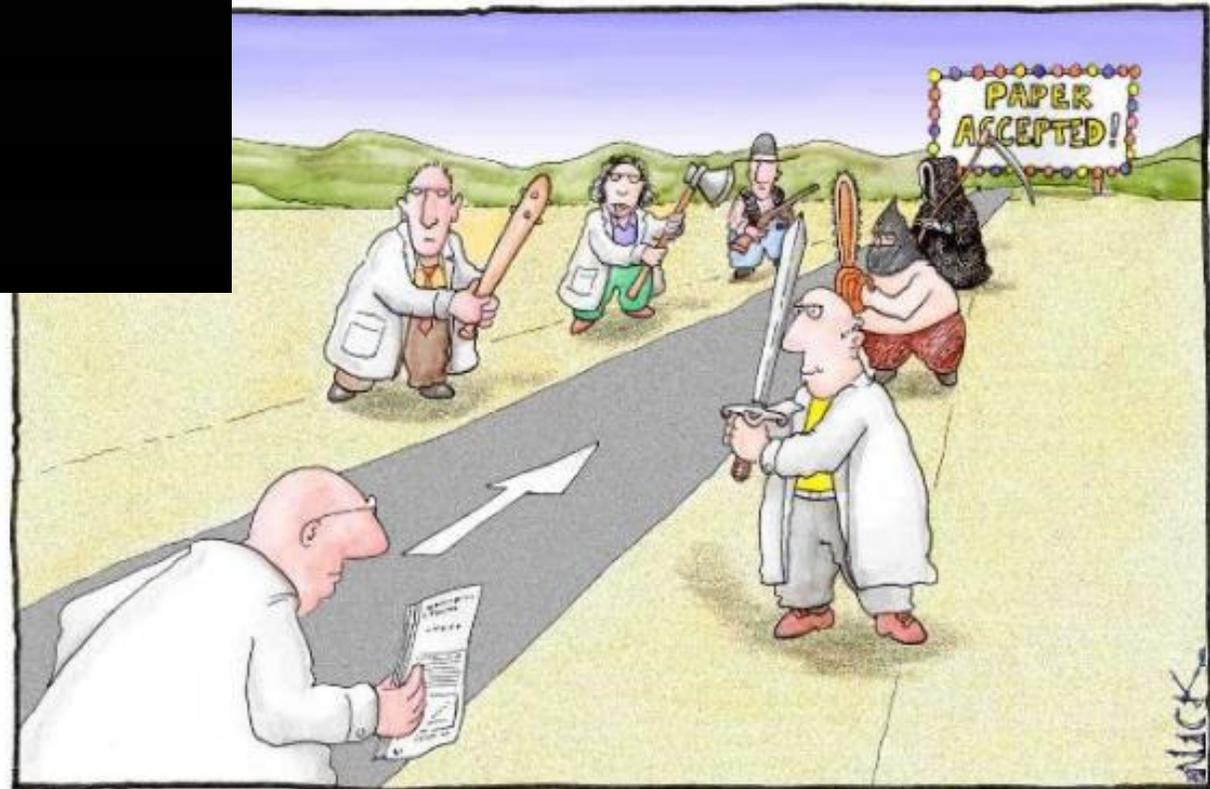
Open participation

Wider community able to contribute to review process

OPR – Advantages/Disadvantages

- Open reports & identities increase transparency and accountability
 - Enable credit
 - Spotlight potential conflicts of interest and bias
 - Better, more constructive reviews?
 - Published reports a great training resource
- Open participation enables greater inclusion
- But, question-marks about open identities!

Peer review as altruism or aggression?



Open Science Peer Review Oath

Principle 1: I will sign my name to my review

Principle 2: I will review with integrity

Principle 3: I will treat the review as a discourse with you; in particular, I will provide constructive criticism

Principle 4: I will be an ambassador for the practice of open science

Aleksic J, Alexa A, Attwood TK *et al.* An Open Science Peer Review Oath [version 2; referees: 4 approved, 1 approved with reservations]. *F1000Research* 2015, **3**:271
(doi: [10.12688/f1000research.5686.2](https://doi.org/10.12688/f1000research.5686.2))

Thanks!

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