

Current trends in peer review: overall purpose of peer review and new models

Aliaksandr Birukou

18 April 2017



The screenshot shows the top section of the PEERE website. On the left is the PEERE logo, which consists of the word 'PEERE' in a stylized font with overlapping circles behind the letters. To the right of the logo is a red banner with the text 'NEW FRONTIERS OF PEER REVIEW' in white. Further right is the COST logo, which includes the word 'cost' in a stylized font and the European Union flag, with the text 'EUROPEAN COOPERATION IN SCIENCE AND TECHNOLOGY' below it. Below these elements is a navigation menu with the following items: NEWS, PUBLICATIONS, EVENTS, PHOTOS, VIDEOS, MEETING PRESENTATIONS, and NEWSLETTER. Below the navigation menu, on the left, is a section titled 'PEERE IN A NUTSHELL' with a vertical bar to its left. To the right of this section is another vertical bar with the word 'PEERE' next to it. Below the 'PEERE IN A NUTSHELL' section is the title 'New Frontiers of Peer Review (PEERE)' and a paragraph of text: 'PEERE New frontiers of peer review is a COST Action running... includes 26 countries and 60 participants (see ...)'.

PEERE

NEW FRONTIERS OF PEER REVIEW

cost
EUROPEAN COOPERATION
IN SCIENCE AND TECHNOLOGY

NEWS PUBLICATIONS EVENTS PHOTOS VIDEOS MEETING PRESENTATIONS NEWSLETTER

PEERE IN A NUTSHELL

PEERE

New Frontiers of Peer Review (PEERE)

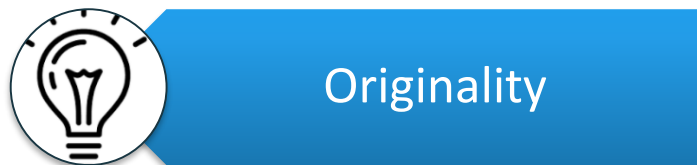
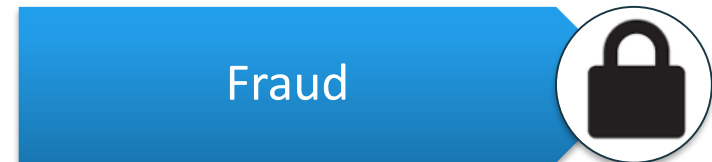
PEERE New frontiers of peer review is a COST Action running... includes 26 countries and 60 participants (see ...)

SPRINGER NATURE

Current trends in peer review

1

Peer review is still the best way to determine:

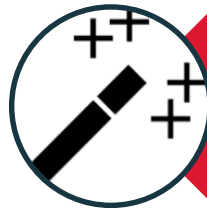


Benefits for all stakeholders



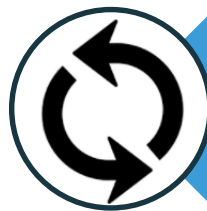
For Editor

- Decide *what* to publish and *where*



For Author

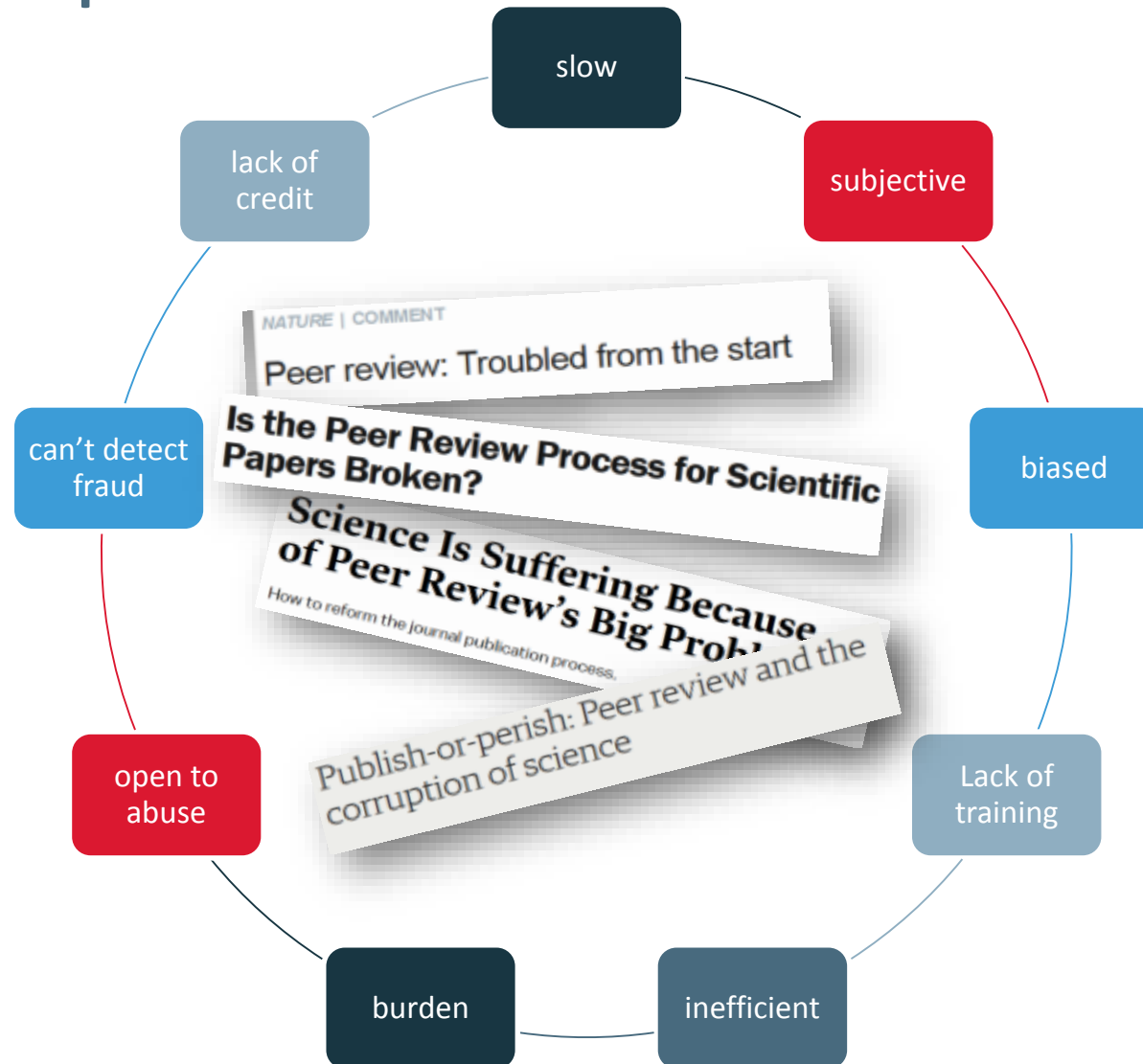
- Improves manuscript



For Peer Reviewer

- Be up to date, reputation, collaboration, “give back”

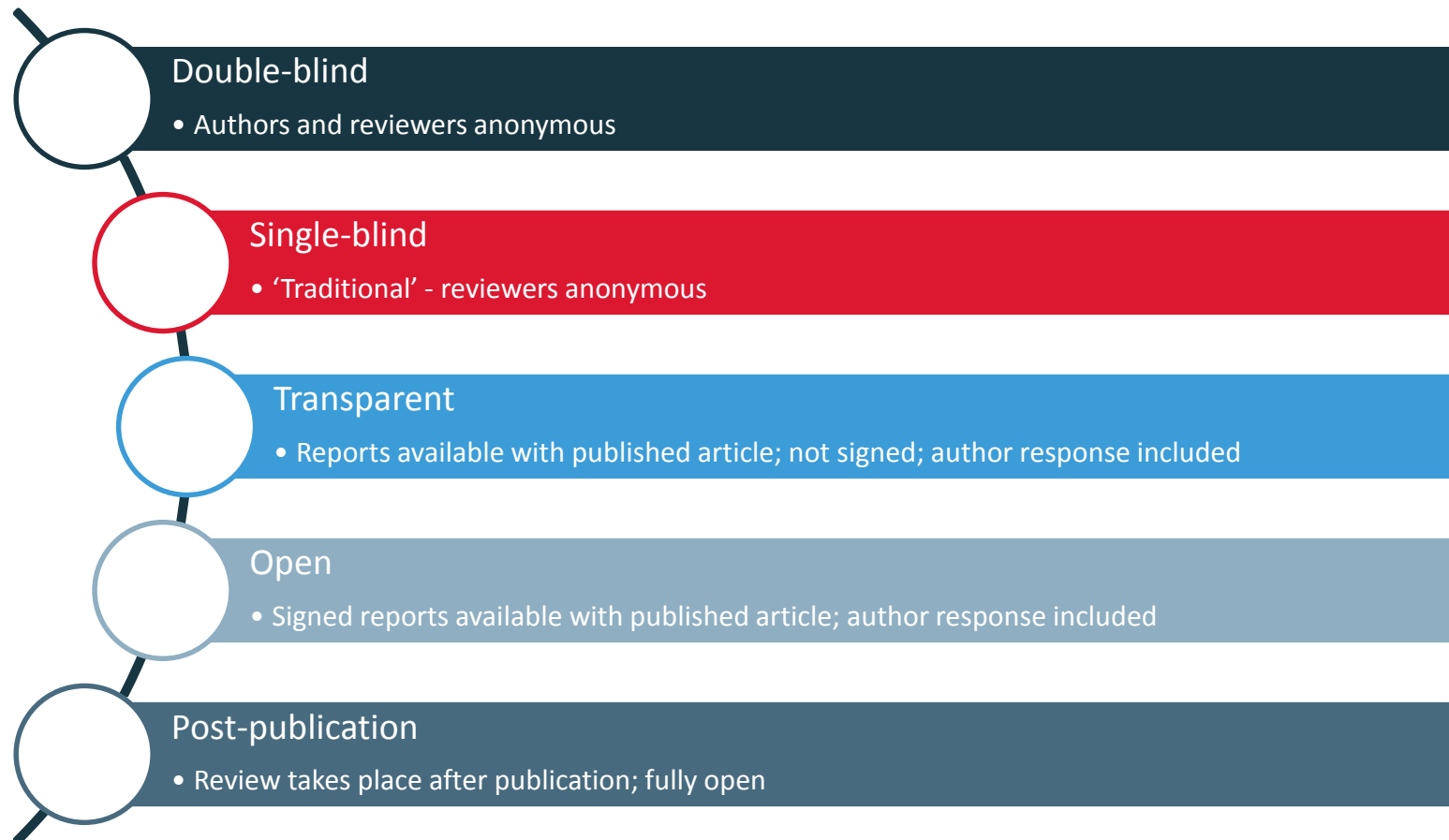
But it is not perfect..



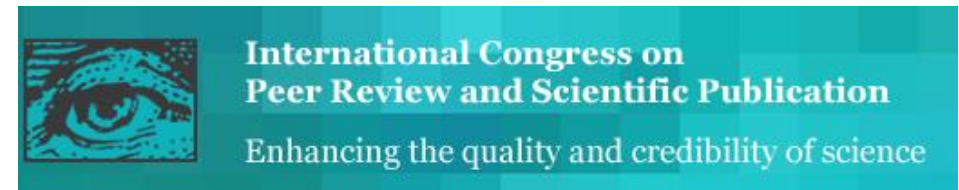
How we are addressing these issues



Development in peer review models



Peer review research



PANEL on Peer Review:

<http://zeeba.tv/media/conferences/ape-2017/0203-Alice-Meadows/>

Open peer review – clearer definitions



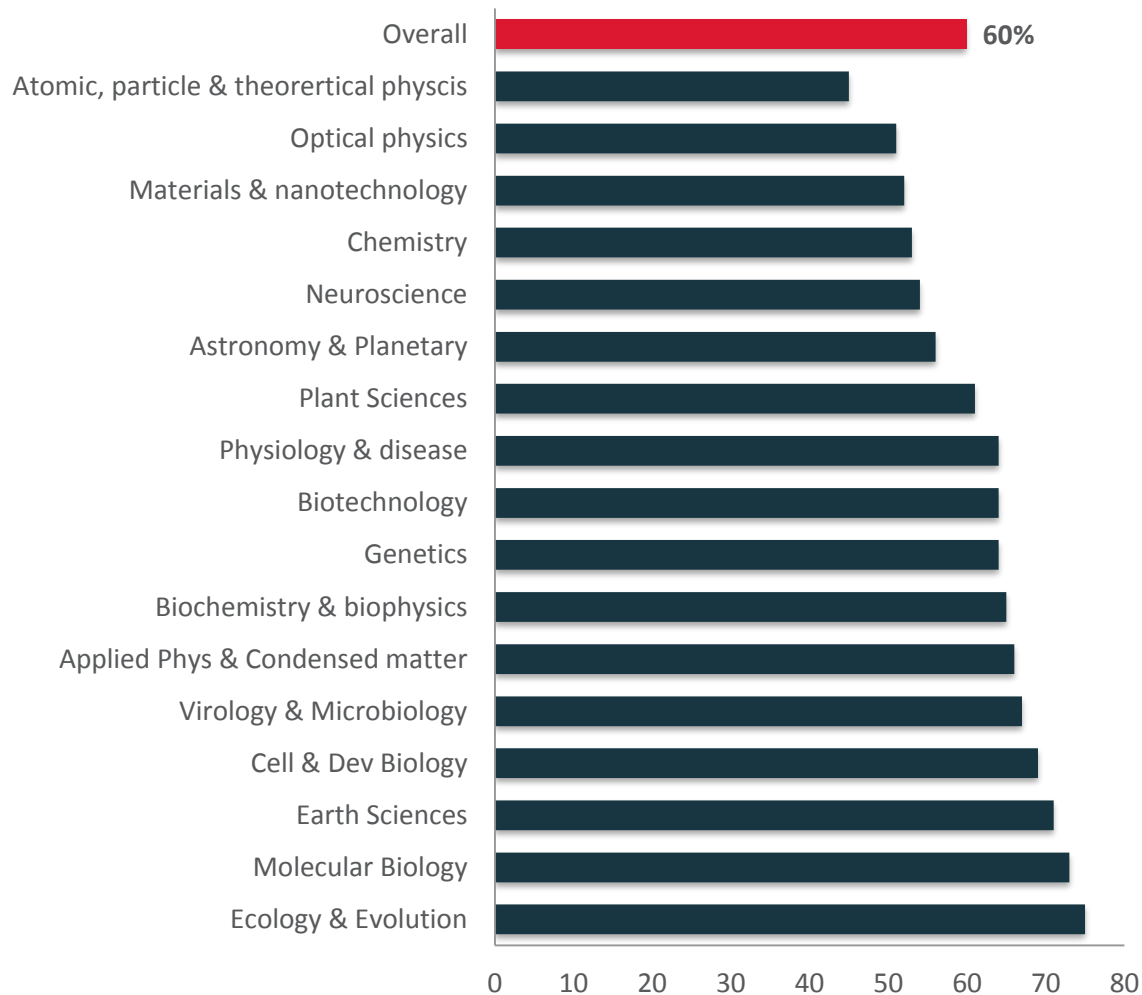
- **Open identities:** Authors and reviewers aware of each other's identity
- **Open reports:** Review reports published alongside the article
- **Open participation:** The wider community able to contribute to review process
- **Open interaction:** Direct reciprocal discussion between authors and reviewers, and/or between reviewers, is encouraged.
- **Open pre-review manuscripts:** Manuscripts are made immediately available (e.g., via pre-print servers) in advance of any formal peer review procedures
- **Open final-version commenting:** Review or commenting on final “version of record” publications
- **Open platforms:** Review is de-coupled from publishing, facilitated by a different organizational entity than the venue of publication.

see Tony Ross-Hellauer blog post for more <https://blogs.openaire.eu/?author=11>

Closer look at some new models

2

Transparent peer review



- Introduced in January 2016
- Authors can opt to publish reviews
- On average, around 60% of authors are voluntarily opting in to publishing the peer review history of their paper.
- The figure shows the author opt-in rate across the different research areas for 787 published papers.

OPR on the increase

Open Peer Review reports

Pre-publication versions of this article and author comments to reviewers are available by contacting info@biomedcentral.com.



Atn
An in

Original Submission		
14 Sep 2016	Submitted	Original manuscript
22 Sep 2016	Reviewed	Reviewer Report - Giuseppe Montagnino
6 Oct 2016	Reviewed	Reviewer Report - Josep María Grinyó
4 Nov 2016	Author responded	Author comments - Maria Haller
Resubmission - Version 2		
4 Nov 2016	Submitted	Manuscript version 2
14 Nov 2016	Reviewed	Reviewer Report - Giuseppe Montagnino
9 Dec 2016	Author responded	Author comments - Maria Haller
Resubmission - Version 3		
9 Dec 2016	Submitted	Manuscript version 3
16 Dec 2016	Reviewed	Reviewer Report - Giuseppe Montagnino

Post publication peer review

Post Publication peer review




Post Publication Commenting



Results-free review

EDITORIAL | OPEN ACCESS

Preventing the ends from justifying the means: withholding results to address publication bias in peer-review

Katherine S. Button , Liz Bal, Anna Clark and Tim Shipley

BMC Psychology BMC series – open, inclusive and trusted 2016 4:59 | DOI: 10.1186/s40359-016-0167-7 | © The Author(s). 2016

Received: 15 November 2016 | Accepted: 15 November 2016 | Published: 1 December 2016

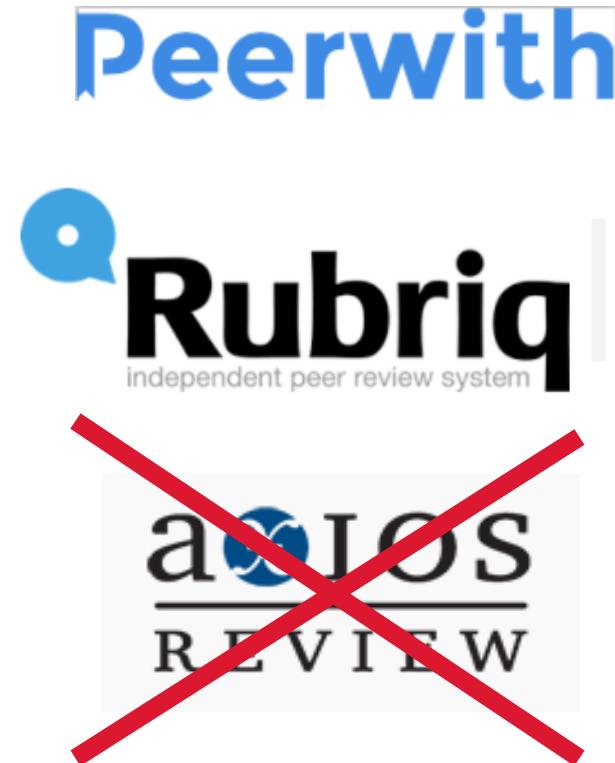
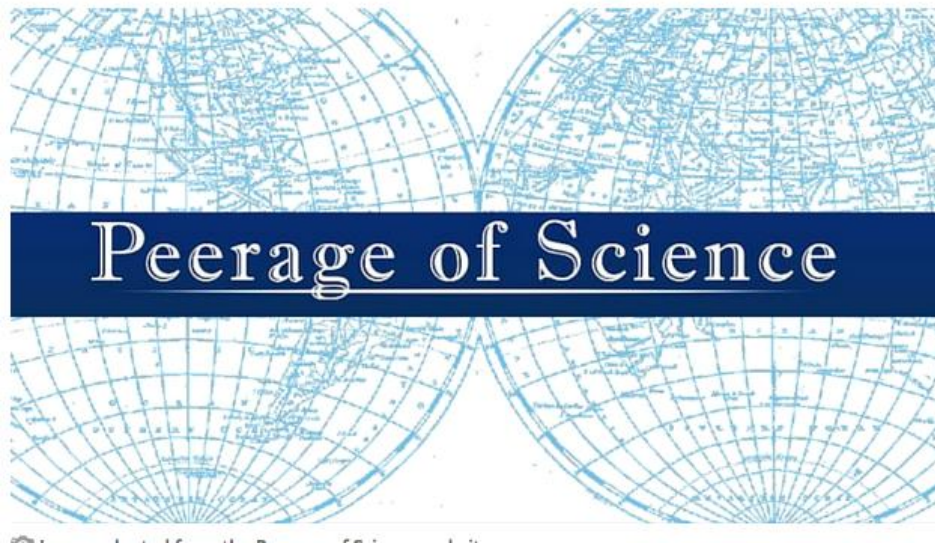
 [Open Peer Review reports](#)

- Base editorial decisions on study quality rather than results, to reduce publication bias
- *BMC Psychology* to launch first ever Randomised Controlled Trial of results-free review
- Authors offered in-principle acceptance following review of “results-free” manuscript if methods and rationale sound.

Technical peer review and ‘cascading’



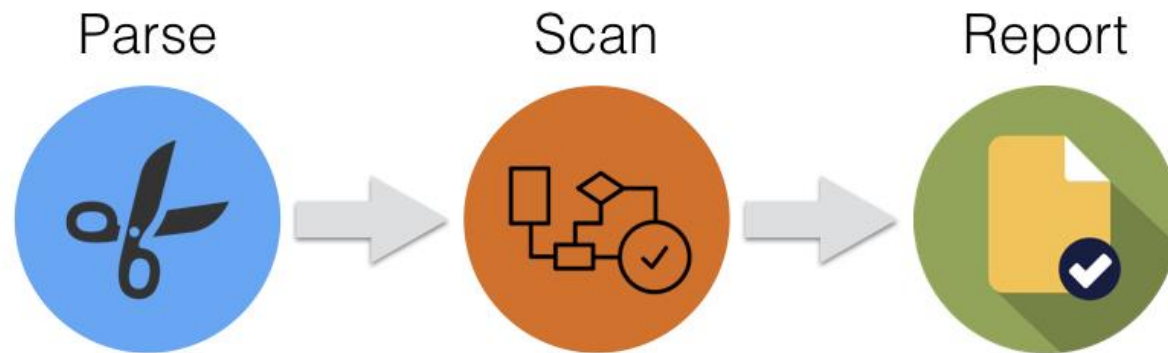
Journal independent peer review



Can peer review be automated?

statre✓viewer

Automated Manuscript Scanning Service



- To improve statistical reporting in journals
- Using **StatReviewer** across 4 BMC journals – *Trials*, *Arthritis Research & Therapy*, *Critical Care* and *BMC Medicine*
- Iterative algorithms ‘scan’ and evaluate reporting and statistics of article
- Pending results, aim to expand pilot beyond clinical trials

Automated reviews



Manuscript: Sample Manuscript Title

Publication: Sample Journal

Guideline: Consort (<http://www.consort-statement.org>)

1a. Title

✔ Complete

1b. Abstract

✘ Please ensure that the following is reported:

- the primary outcome of the study (e.g., The primary outcome was 30-day mortality)
- the number of patients who were included in the analysis (e.g., 42 patients were included in the analysis...)
- any harms observed in the study (e.g., adverse events)

2a. Background

✔ Complete

2b. Objectives

✘ Please report the actual hypothesis of the trial (e.g., "We hypothesized that..."), or the objectives or aims of the trial.

3a. Trial Design

✘ It is important to report the specifics of the trial design, specifically:

- The type of trial (e.g., parallel groups, multi-arm, crossover, cluster, factorial)
- The nature of the hypotheses (e.g., superiority, equivalence, non-inferiority)

Automated reviews

stat reviewer Scan Report

Scan Completed 06/19/2016 08:45:06AM

Manuscript: Prevalence of ketosis, ketonuria and ketoacidosis during liberal glycemic control in critically ill patients with diabetes: an observational study

Publication: Critical Care

Guideline Applied: The Uniform Requirements (<http://www.icmje.org/about-icmje/faqs/icmje-recommendations/>)

Abstract:

1. So that the abstract can stand alone from the rest of the document, please define the measure of variability (e.g., IQR) as well as the central tendency (e.g., median).

Statistical Analysis

2. The plan of analysis appears to have been thoughtfully designed in light of the assumptions underlying the tests. However, it would be prudent to report to the reader which aspects of the analysis were developed a priori versus those that evolved after examination of the data (i.e., post hoc).

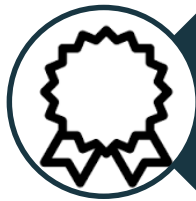
3. Was a statistical power analysis used to guide sample size estimation? If so, please report the analysis, but if not, please do not report a post hoc power calculation. Instead, please provide a rationale for why the sample sizes were used (e.g., "Based on available data...").

Results

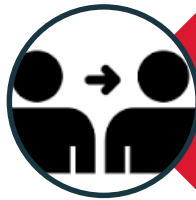
4. At several places in the results section non-significant results are interpreted as non-meaningful findings. This interpretation is difficult to evaluate in the absence of knowledge concerning the available statistical power for these comparisons. For example, it is difficult to discern between no meaningful differences existing versus the lack of power to detect them. Please provide the reader with more assistance on the effect sizes (i.e., correlation coefficient) of these non-significant findings to help place these differences in context.

5. Throughout the manuscript, the word "significant" is used as a statistical modifier (i.e., it is implied that a statistically significant finding is being reported). However, your readers would benefit from a further designation of the "clinical significance" of any findings.

Support for peer reviewers



Recognition



Mentoring



Training



PEERE – overall intro

3



[PEERE New frontiers of peer review](#) is a [COST Action](#) running from 12/05/2014 to 11/05/2018. It includes 30 countries and more than 80 participants (see the [Management Committee](#) page)


[NEWS](#)
[STSMS](#)
[PUBLICATIONS](#)
[EVENTS](#)
[PHOTOS](#)
[VIDEOS](#)

NEW FRONTIERS OF PEER REVIEW

BY CATEGORY
NEWS



PHILIPPE RAVAUD

PHILIPPE RAVAUD (UNIVERSITÉ PARIS DESCARTES) WILL GIVE A

BY CATEGORY
EVENTS



ATHENS

WORKSHOP ON "NEW MODELS OF PEER REVIEW", ATHENS, 16-18

BY CATEGORY
PHOTOGALLERY



ICCSS 2015

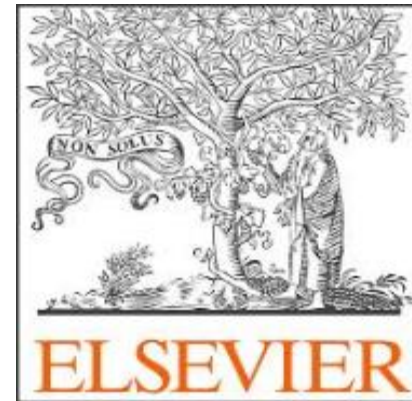
FLAMINIO SQUAZZONI PRESENTING PEERE AT

Analysis of peer review

- Three publishers involved
- A lot of researchers from: economics, CS, social simulations, cognitive sciences, medicine, ...
- Main goal – improve efficiency, transparency and accountability of peer review through a trans-disciplinary, cross-sectorial collaboration

HOW:

- large-scale analysis of peer review practices. Various disciplines and several publishers
- evaluate implications of different models of peer review and to explore new incentive structures to improve collaboration
- define collaboratively a joint research agenda that points to an evidence-based peer review reform



PUBLISHED: 23 MARCH 2017

Science publishers partner with a COST Action to share data and improve peer review

Press release

Elsevier, Springer Nature and Wiley have agreed on a protocol that enables peer review data sharing in a journal sample.



SPRINGER NATURE

PEERE – best results

4



Creating a dataset about peer review processes of conferences

Mario Malicki

University of Split

Aliaksandr Birukou

Springer

Creating a dataset about peer review processes of the conferences



Text mining of ~10,000 prefaces from the 5 CS proceedings series (LNCS+)

- **Conference organizers use the following terms to describe peer review:**
 - peer review type,
 - num submitted / accepted papers , acceptance rate
 - num reviewers / paper ...
- **For new conference proceedings, since June 2015, we ask editors to provide such data.**
 - 1 denial to provide such data in 2015
- **additionally learnt**
 - what adjectives people use to describe peer review?
 - do they use additional reviewers?
 - which submission systems do they use? (EasyChair, CMT, OCS, ...)
 - learnt about complex structures – shepherding, etc

CrossMark for peer review process of a conference



How to describe peer review, based on our analysis?

Label	Meaning	Example
peerReviewType	single-blind, double-blind, open, other	single blind
confManagementSystem	EasyChair, CMT, etc.	OCS
submissionsSentForReview	The number of papers sent for peer review. Does not include straightforward rejects by the PC chairs due to out-of-scope or other reasons	100
fullPapersAccepted	The number of full papers accepted.	30
shortPapersAccepted	The number of short papers accepted.	15
posterPapersAccepted	The number of poster papers accepted.	7
accRateFullPapersPerc	The number of full papers/The number of submissions sent for review * 100	30
avgNumReviewsPerPaper	The number of reviews / the number of submissions sent for review.	3.25
avgNumPapersPerReviewer	The number of papers each reviewer has to review on average.	5.5
extReviewersInvolved	Were external reviewers involved?	yes
additionalInfoOnReviewProcess	Any additional information provided about the peer review process by the organizers.	"Short papers underwent shepherding process and 5 out of 10 were accepted as full papers."

What's next?

- We'll add peer review info to the linked open data portal (lod.springer.com)
- CrossRef and Datacite start a working group on unique and persistent conference IDs, CrossMark for proceedings, etc.
- Scope of the group for
 - (1) Unique Conference IDs,
 - (2) Metadata on peer-review process,
 - (3) machine-processable data about PCs?



Home > Blog > Taking the "con" out of conferences

🕒 5 minute read.

Taking the “con” out of conferences



[Geoffrey Bilder](#) – 2017 February 15

In [DOIs](#), [Identifiers](#)

TL;DR

Crossref and DataCite are forming a working group to explore conference identifiers and project identifiers. If you are interested in joining this working group *and* in doing some actual work for it, please contact us at community@crossref.org and include the text **conference identifiers WG** in the subject heading.

Modeling organizational cognition: the case of impact factor

Davide Secchi

University of Southern Denmark

Stephen Cowley

University of Southern Denmark

PERCEIVED SCIENTIFIC VALUE (PSV): NOT JUST QUALITY ASSURANCE

- ▶ All agree that PR has a filter function
- ▶ It is also affected by how individuals interact with each other and with other societal elements (e.g., IF)
- ▶ We use an agent-based model be used to test how PSV changes due to social interactions, IF and attitudes towards IF

		ORGANIZATIONAL CONDITIONS	
		CERTAINTY	UNCERTAINTY
GROUP ATTITUDES TO IF	ENTHUSIASTS	PSV GRADUALLY INCREASES	PSV INCREASES AND SPIKES
	SKEPTICS	PSV SHOWS MORE SUBTLE INCREASE	

In uncertain conditions, the enthusiasts group dissolve as the skeptical group grows

Do similar editorial boards homogenize a discipline?

Evidence from top journals in economics

Raffaele Miniaci

University of Brescia

Michele Pezzoni

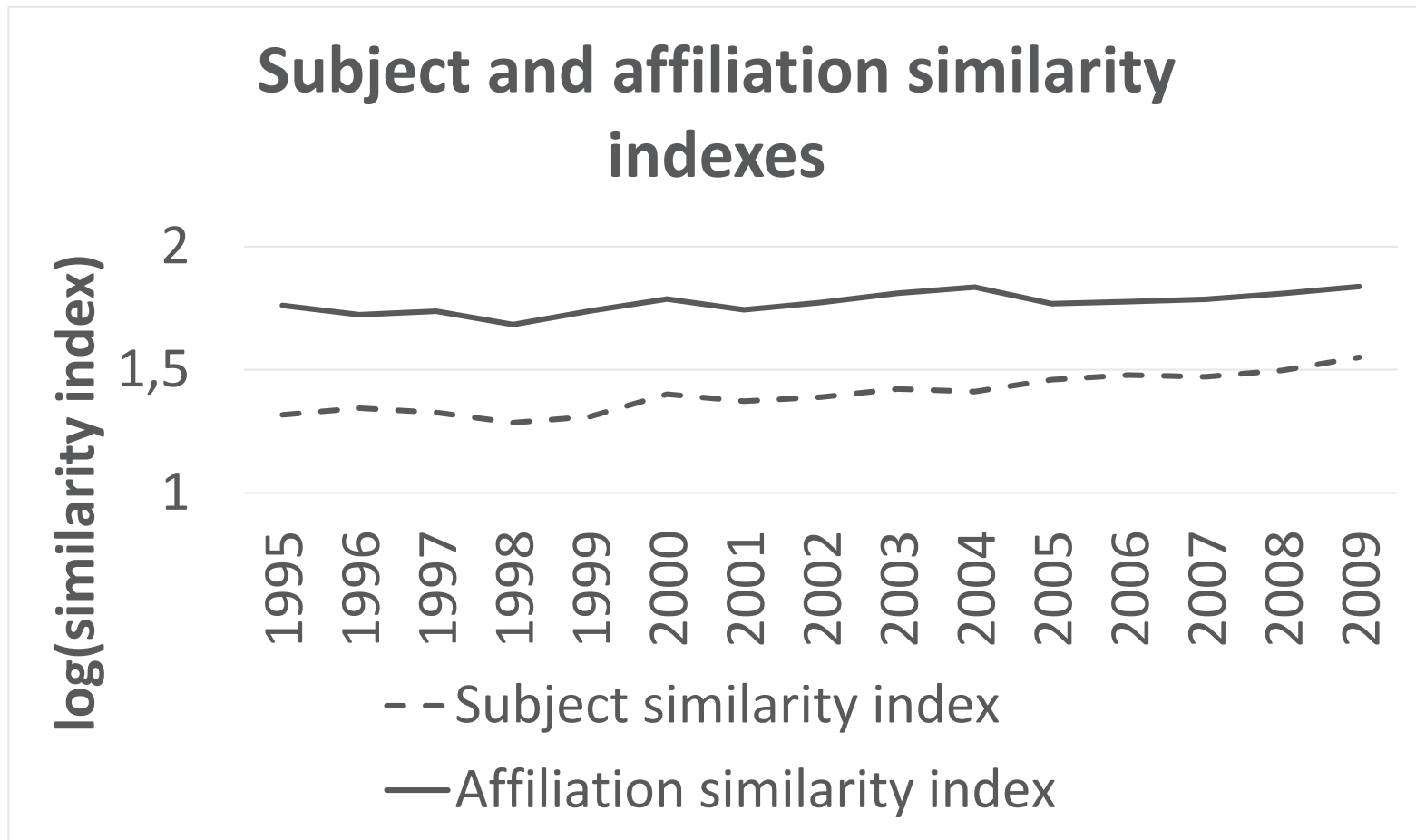
GREDEG Université Côte d'Azur,

ICRIOS Bocconi University, BRICK University of Torino

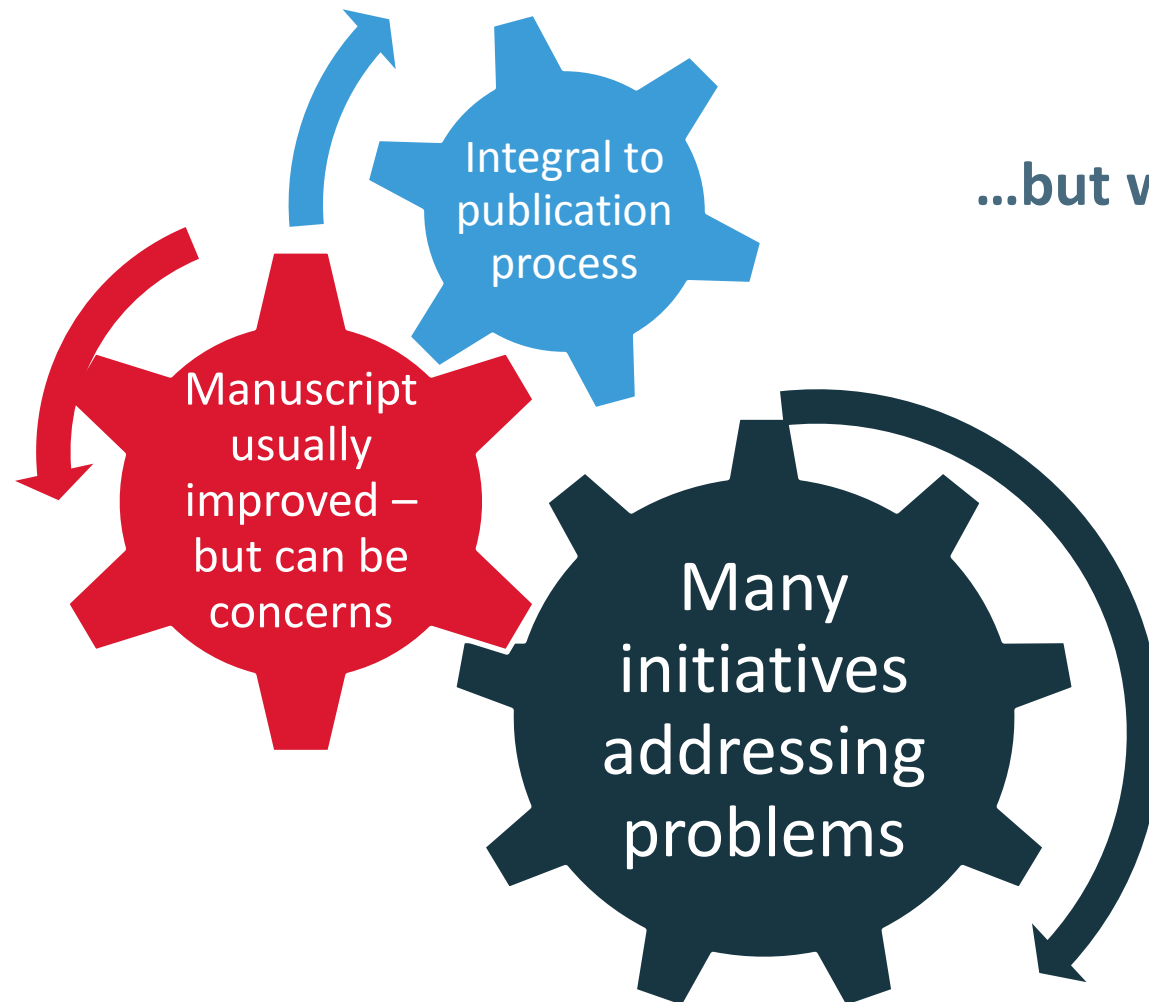
Research Question

RQ: Are leading journals in economics converging toward similar subjects published and authors' affiliations? or are they preserving their specificities?

Average subject and affiliation similarity among the 15 leading journals in economics



No shortage of developments..



...but will they go far enough?

Спасибо!

ACKNOWLEDGEMENTS:

Aliaksandr Birukou (Александр Бирюков),
Executive Editor, Computer Science, Springer
aliaksandr.birukou@springer.com

- many slides by Rachel Burley, Publishing Director, BMC
- some slides by PEERE participants

	Wednesday, April 19, 2017 Vega Hotel & Convention Center Starting at 9³⁰		
9³⁰ – 11²⁰	2nd Floor, Konstruktor Hall Session Two: Publishing conference proceedings internationally: Practical recommendations and how to recognize doubtful conferences Workshop by Publisher and Expert Moderator: Ruslan A. Grigoryev (Simultaneous translation)		
9³⁰ – 10¹⁵	Jörg-Rüdiger Sack (Professor for Computer Science, Carleton University / Subject Chair of Scopus CSAB, Ottawa, Canada). Publication of high quality conference proceedings and counter “mock” conferences		
10¹⁵ – 11⁰⁵	Aliaksandr Birukou (Senior Editor, Computer Science, Springer, Berlin, Germany). Publishing conference proceedings	11¹⁵ – 12¹⁵ 13⁰⁰ – 14²⁵	Thursday, April 20, 2017 2nd Floor, Konstruktor Hall Session Nine: Workshop by Nature Publ. Group Editors Moderator: Daria Iovcheva (Simultaneous translation)
11⁰⁵ – 11²⁰	Q&A Session. Completion of the Session		
		11¹⁵ – 12¹⁵	Joffrey Planchard (Institutional Partnerships Manager, Europe, Nature Services, United Kingdom). Nature research, services for authors and journal editors
		12¹⁵ – 13⁰⁰	Lunch
		13⁰⁰ – 14¹⁵	Jeffrey Robens (Editorial Development Manager / Research Services, SpringerNature, Singapore). Workshop for Editors
		14¹⁵ – 14²⁵	Q&A Session. Completion of the Session