

# Open Science 1

## SCHOLARLY COMMUNICATION: DOES IT WORK?

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paths to successful  
innovations



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# Why you?



## University research: if you believe in openness, stand up for it

Publishing openly provides greater exposure, boosts prospects and can lead to more citations, says Erin McKiernan

Open access: six myths to put to rest



2014

PLOS BLOGS

## The Official PLOS Blog

Apr. 29, 2021

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## The importance of early career researchers for promoting open research

April 29, 2021 / PLOS / Open Research: Open Science



nature

Apr. 13, 2021

CAREER FEATURE • 13 APRIL 2021

## How junior scientists can land a seat at the leadership table

Early-career researchers bring energy, talent and diverse voices to leadership and advisory roles.

Kendall Powell

### Opening doors

Open science and open-access-publishing movements have created early-career leadership opportunities, specialists say. Mark Patterson, former executive director of eLife, which runs the open-access journal *eLife* in Cambridge, UK, says he detects a strong appetite among junior researchers for systemic change in how science is shared and published.

In March, eLife announced a partnership with PREreview, a preprint review platform, to engage more early-career researchers and those from under-represented groups in peer review.

Brianne Kent, a neuroscientist at Simon Fraser University in Burnaby, Canada, says more junior researchers are in positions of influence because so many are active in movements around open science, open access and reproducibility. Those include non-profit advocacy groups such as ASAPBio in San Francisco, California, and the Future of Research in Boston, Massachusetts. “Early-career researchers are really driving these initiatives to change scientific culture,” says Kent, who is the first, and currently the only, junior scientist to sit on the Canadian Institutes of Health Research’s 16-member governing council.

YOU ARE THE FUTURE...  
...BUT IT'S HAPPENING NOW. YOU BRING A  
NEW PERSPECTIVE INTO AN OLD SYSTEM



Rise and shine!

MAKE YOUR VOICE HEARD

[WWW.MENTI.COM](http://WWW.MENTI.COM)

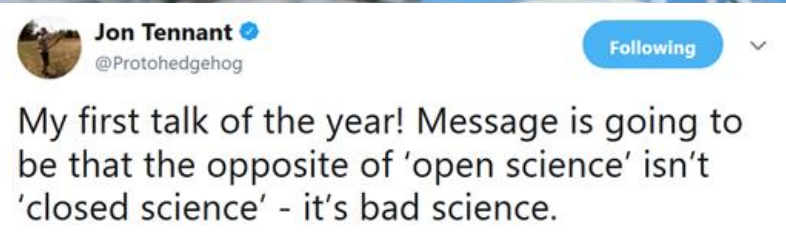
**94 87 30 55**





# Take away messages

Open Access/Open Science are opportunities, not threats



...the opposite of Open Science is «Bad Science», not «Closed Science»

Open Science: a different way to do science, not a set of rules

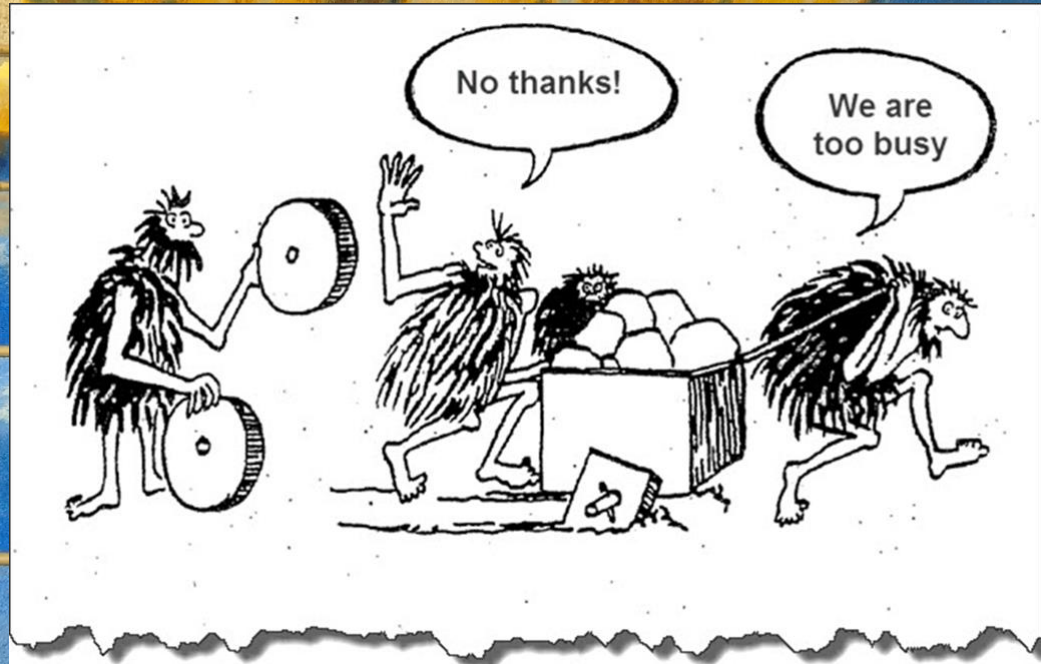
...barriers are social and cultural not technical...

...take Open Science «one step at a time»...but take the 1°!

Open Science, Open Innovation, EOSC, FAIR: be ready!



# Open Science?



...OPEN SCIENCE HOLDS A HUGE  
TRANSFORMATIVE POTENTIAL... IF YOU DON'T  
FOCUS ON ITS REAL VALUE, IT WILL BE SEEN AS  
THE UNPTEENTH ADMINISTRATIVE BURDEN







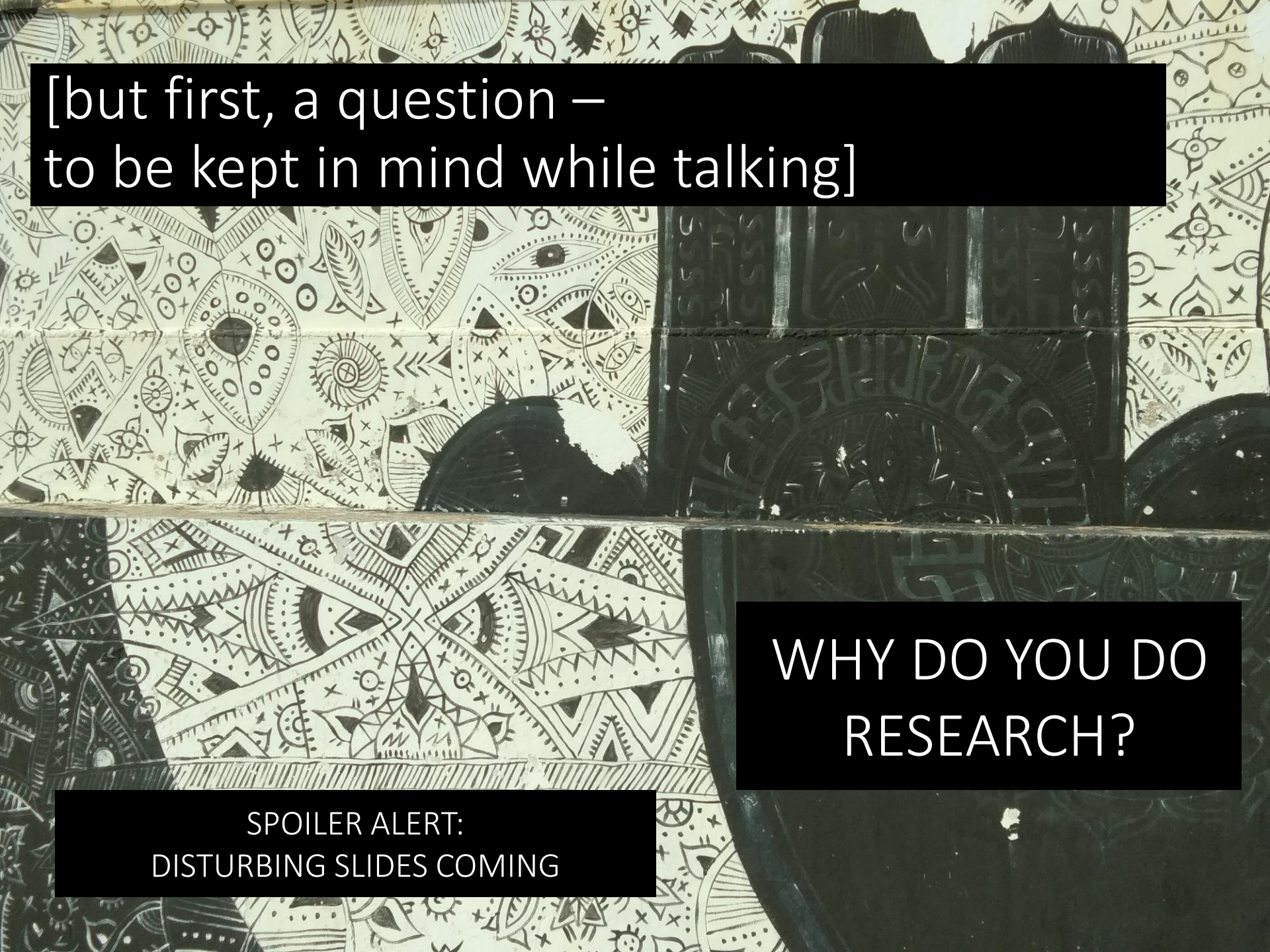
We'll learn

1. what's wrong with the current scholarly communication system
2. how much money/economic interests are at stake

Take home messages

- today, publishing is not for free
- don't believe in peer review, Impact Factor, citations as they were the Gospel. Be critical and informed!





[but first, a question –  
to be kept in mind while talking]

WHY DO YOU DO  
RESEARCH?

SPOILER ALERT:  
DISTURBING SLIDES COMING



Please...



...TODAY LET'S LOOK AT SCHOLARLY  
COMMUNICATION WITH FRESH EYES...



# Scholarly communication...

Access

RIGHTS  
MANAGEMENT  
(authors,  
readers,  
publishers...)

PRESERVATION

Production

Economy  
(and profits)

Costs  
(real costs – «anelastic market»)

New models  
(sustainability)

Tecnology

Disciplines and their tools  
(books, journals...)

RESEARCH  
EVALUATION



# Scholarly communication: functions

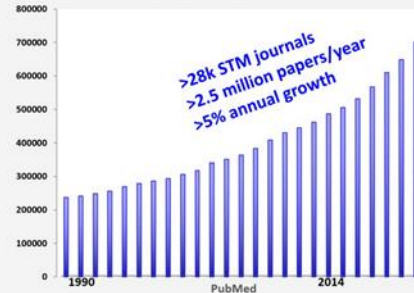
**REGISTRATION**

[Impact Factor]

**CERTIFICATION**

**REWARD**

## Publishing



*most papers have more authors than readers  
half the literature is never cited*

2018 ESS

THE EMBO JOURNAL

EMBO reports

EMBO Molecular Medicine

molecular systems biology

**AWARENESS**

**ARCHIVING**



# 101 INNOVATIONS IN SCHOLARLY COMMUNICATION



Jeroen Bosman @jeroenbosman  
Utrecht University Library

## THE CHANGING RESEARCH WORKFLOW



Bianca Kramer @MsPhelps  
Utrecht University Library



Science is in transition. This poster phase of a project aiming to chart communication flows from evolution

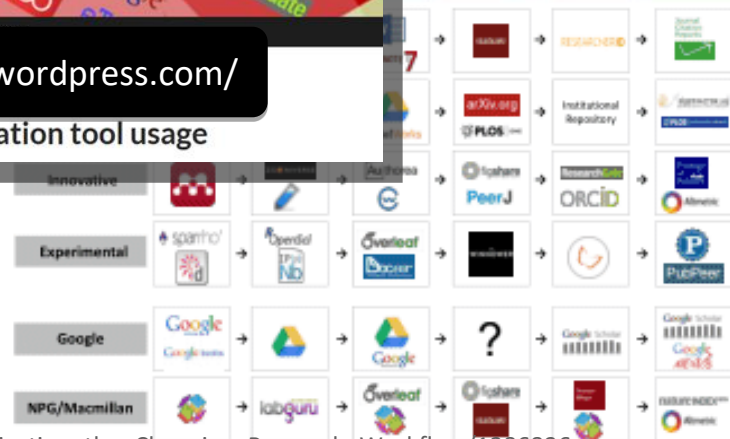
## Most important developments in 6 research workflow phases

	Discovery	Analysis	Writing	Publication	Outreach	Assessment
Trends	social discovery tools	datadriven & crowdsourced science	collaborative online writing	Open Access & data publication	scholarly social media	article level (alt)metrics
Expectations	growing importance of data discovery	more online analysis tools	more integration with publication & assessment tools	more use of "publish first, judge later"	use of altmetrics for monitoring outreach	more open and post-publication peer review
Uncertainties	support for full-text search and text mining	willingness to share in analysis phase	acceptance of collaborative online	effect of journal/publisher status	requirements of funders & institutions	who pays for costly qualitative assessment?
Opportunities					using repositories for institutional visibility	using author-, publication- and affiliation-IDs
Challenges					making outreach a two-way discussion	quality of measuring tools
Most important term developments					more & better connected researcher profiles	importance of societal relevance + non-publication contributions
Potential disruptive developments					public access to research findings, also for agenda setting	moving away from simple quantitative indicators

600 innovative tools and services (< 2010)



<https://101innovations.wordpress.com/>  
Survey of scholarly communication tool usage





# Publications and communication

PUBLISHING AND COMMUNICATION HAVE DIVERGED  
FROM «VERSION OF RECORD» TO «RECORD OF VERSIONS»,  
FROM JOURNALS TO PLATFORMS

OASPA for this opportunity), I propose exploring how scholarly publishing should relate to scholarly communication. Ostensibly aligned, publishing and communication have diverged. Journals and the concept of “version of record” are not only a legacy from print, but their roles have shifted to the point where some processes involved in scholarly publishing are getting in the way of optimal scholarly communication, as the present pandemic amply reveals. Taking full advantage of digital affordances requires moving in different directions. This is an opportunity, not a challenge. Platforms and “record of versions” will eventually supersede journals and their articles, and now is the time to make some fundamental choices.

**Guest Post by Jean-Claude Guéron:**  
**Scholarly Communication and Scholarly Publishing**  
Apr. 20, 2021

**OASPA**

Open Access  
Scholarly Publishing  
Association



# Scholarly communication: processes

Submission

AUTHORS/REVIEWERS  
ARE NOT PAID  
RETURN:  
PRESTIGE/CITATIONS

Peer review

OFTEN BECAUSE NOT  
MAINSTREAM,  
THEN RESUBMIT-  
...AS TIMES GOES BY

Acceptance/  
rejection

Publication

UPON SUBSCRIPTION  
OR OPEN ACCESS

- PUBLICATION IS NEEDED
- RESEARCH IS AN INCREMENTAL PROCESS
  - NOT TO REINVENT THE WHEEL
  - NOT TO FUND TWICE

SAME  
PRODUCTION  
COSTS, DIFFERENT  
DISSEMINATION



# Lessons learned from COVID

raise questions about the way science-as-usual is practised.

Vincent Larivière is an information scientist and professor at the University of Montreal, who studies the way science is disseminated. He said the move to speed up publication and share research is a tacit admission that business-as-usual in research slows down science.

"[They say] we're opening everything because it's important that we advance things fast. Well, the flip side of this argument is that your normal behaviour is to put barriers to science."

"This virus is dangerous and deadly, but there's lots of other diseases that are dangerous and deadly, and for which opening could save lives. So if you really want to go in that direction, just open everything."



University of Montreal researcher Vincent Larivière said the climate of open science suggests that science-as-usual creates barriers. (Amélie Philibert)

Health · Second Opinion

**'We're opening everything': Scientists share coronavirus data in unprecedented way to contain, treat disease**

Feb.1, 2020

...SCIENTIST ARE **NOW**  
OPENING AND SHARING  
DUE TO COVID-19...  
**THE FLIP SIDE IS THAT OUR  
NORMAL BEHAVIOUR IS TO  
PUT BARRIERS TO SCIENCE**

**nature**

Feb 4, 2020

Subscribe

EDITORIAL · 04 FEBRUARY 2020

## **Calling all coronavirus researchers: keep sharing, stay open**

As the new coronavirus continues its deadly spread, researchers must ensure that their work on this outbreak is shared rapidly and openly.



# ...for how long?

PUBLISHERS RECOGNIZE THEY PLAY A  
CRUCIAL ROLE...

- SO THEY OPENED SOME PAPERS
- **ONLY FOR THE DURATION OF THE  
OUTBREAK**

OPEN/CLOSE:  
TECHNICALLY SIMPLE  
THE DECISION IS  
PURELY FINANCIAL



**Jon Tennant** @Protohedgehog · 7 apr

When a scientific publisher provides free access to life-saving research during a pandemic, they show us that this decision is technically simple. Flip a switch.

The decision to prevent access to similar life-saving research for literally **EVERYTHING ELSE** is purely financial.

1

23

73



response to the rapid worldwide spread of COVID-19

Sharing the worldwide concern about the spread and impact of COVID-19, publishers recognize the crucial role they can play in supporting the response to this crisis and advancing the research that will be critical in combating the virus.

In immediate response to the epidemic announcement by the World Health Organization (WHO), members of the International Association of Scientific, Technical and Medical Publishers (STM) moved to:

- Provide immediate free access to all relevant peer-reviewed publications to ensure that for the duration of the outbreak, research and data quickly reaches the widest possible audiences. More than 32,000 articles, chapters, and other re

NEWS RELEASE





...access?



**Heather Joseph** @hjoseph ·

UNREAL

Unreal. Acknowledging that making these papers [#openaccess](#) will help speed speed progress and save lives but at the same time only doing it for limited time - and for a single disease.

THEY KNOW ACCESS CAN SAVE LIVES...

NEWS RELEASE

[or Immediate Release](#)

March 13, 2020



Speaking of the announcement, Ian Moss STM's CEO said "We are all gravely concerned about the significant threat that COVID-19 represents to public health. In order to aid the efforts to slow the spread of the virus and, fundamentally, to save lives, STM publishers are committed to work collectively to ensure that research findings are shared quickly to advance cutting-edge research. As a community, we hope that the provision of immediate access will aid the global response and make a difference."



# Access is vital

WIRED

BUSINESS CULTURE GEAR IDEAS SCIENCE SECURITY TRANSPORTATION

March 13, 2020

KLINT FINLEY

BUSINESS 03.13.2020 05:22 PM

## Global Officials Call for Free Access to Covid-19 Research

Government science advisers in a dozen countries are asking scientific journals to make data on the disease more widely available.



CORONAVIRUS ONLY?  
ALZHEIMER, CANCER,  
CLIMATE CHANGE,  
DOMESTIC VIOLENCE,  
ARE THEY LESS VITAL?...



SPARC  
@SPARC\_NA

Jan. 25, 2020

"Open" should be the default for science - not just in case of emergencies. When we \*know\* that their openness speeds discovery, why do we lock up articles and data? #OAintheUSA

Traduci il Tweet



Scientists are unraveling the Chinese coronavirus with unprecedented speed and... Scientists are racing to stop the new coronavirus by sharing their results in real time around the world. The effort shows how the speed of collaboration has ...  
@washingtonpost.com



Heather Joseph

10 h · 👤

It's time to make Open Access the default for ALL scientific research once and for goddamn all. Please.

IT'S TIME TO MAKE OPEN THE DEFAULT  
ONCE AND FOR ALL



# ...COVID and patents

Make the pledge to share  
your intellectual property  
in the fight against COVID-19.

OPEN  
COVID  
PLEDGE

The Pledge Licenses

About

## Open COVID



**ProBuccal – Covinhood™**  
oral bioaerosol shield for  
dental applications

🔵 Covinhood , dental shield ,  
ProBuccal

The Covinhood™ (U.S Patent Pending)  
is a protective device against oral  
bioaerosols for use by dental

Make the Pledge

Support the Pledge

Featured IP

**Intel – Touchless**  
password for  
authentication of people

🔵 Intel , security , touchless  
password

There are a number of software  
applications that require  
authentication. For example, many

**Facebook – Combating**  
the spread of COVID-19  
related misinformation

🔵 Facebook , information  
credibility , social media

Due to the current pandemic it has  
become extremely important to  
ensure that everyone has access to...

EU Medicines Agency @EMA\_News · 7 mag May 6th, 2021

The International Coalition of Medicines Regulatory Authorities  
(#ICMRA) and @WHO are urging pharmaceutical companies to provide  
wider access to clinical data for new #medicines and #vaccines.

Check out their joint statement: [bit.ly/3vOBm8L](https://bit.ly/3vOBm8L)

World Health  
Organization

ICMRA

## Taking 'Extraordinary Measures,' Biden Backs Suspending Patents on Vaccines

The Biden administration, siding with some world leaders over  
the U.S. pharmaceutical industry, came out in favor of waiving  
intellectual property protections for coronavirus vaccines.

May 5, 2021

The New York Times



Roberto Caso – Fr

"È solo il mio modo di vedere le cose..."



## Covid-19, pandemia, proprietà intellettuale e open science

Caso, Blog

Una sitografia in costruzione



... Educati

Apr.14, 2020

## What's "Open" During COVID-19? In Global Pandemic, OER and Open Access Matter More than Ever

Posted April 14, 2020

By Lindsey Gumb

Higher education

Jan. 29, 2021

### 'Price gouging from Covid': student ebooks costing up to 500% more than in print

Call for inquiry into academic publishers as locked-down unable to access study material online

In Italia è successo che certi editori, in maniera programmatica, hanno deciso di vendere l'elettronico solo ai singoli e non alle biblioteche. Altri, pur avendo praticamente solo testi e collane universitarie, non hanno nessuna versione elettronica: stampano le singole copie coi torchi??? 🤔



Examples librarians have given include an education textbook called An

The university is so exasperated by what Ayris calls "the scandal of ebooks", that it has just decided it will begin publishing its own open-access textbooks. "This is a direct response to this crisis," he says. "We fed up with paying these prices when our academics are writing the textbooks. In the future, universities need to club together and take control of their own publishing."

The Guardian approached the Publishers' Association but it declined to comment.

Integrated Play-based Curriculum for Young Children, published by Routledge, offered to libraries for £36.99 in print but for £480 for an ebook that can only be read by one student at a time. The cost to libraries for one business studies book, Fundamentals of Corporate Business, published by McGraw Hill, was £65.99 in print and £528 as a single user ebook.



# Scholarly communication today...

WONKHE ABOUT US EVENTS LATAM JOBS SUBSCRIPTIONS SUS-TW Q  
Apr. 22, 2020

**The purpose of publications  
in a pandemic and beyond**

for publications in journals that were more about distinction than dissemination. And when it comes to a global emergency, we're still having to [beg publishers for access to our own research](#) so that we might save large swathes of the human race from an unnecessary death.

AND THEN WE AVE TO BEG THEM  
FOR ACCESS DURING A CRISIS

... WE ARE PAYING COMMERCIAL PUBLISHERS TO  
LOCK UP A CONTENT YOU GAVE FOR FREE...



"They take our free labour, package it, and sell it back to us for windfall profits. The result is that one of our core activities - sharing research - is largely governed by the drive to deliver shareholder value. It doesn't have to be that way."

Jefferson Pooley, Muhlenberg College



Communication

CAN I SEE MY OWN ARTICLE?

DID YOU BRING THE MONEY?!



2020



WHY SHOULD YOU PAY TO READ THEM ?

[www.plos.org](http://www.plos.org)



# Scholarly communication: let's talk money

Some figures... guess what they represent

4

2 million €

7.6 billion \$

36%

521%



# Scholarly communication: let's talk money

4

TIMES ANY INSTITUTION  
PAYS FOR RESEARCH

For researchers, it's like going to a restaurant, bringing all of your own ingredients, cooking the meal yourself, and then being charged \$40 for a waiter to bring it out on a plate for you.

You are the provider, the product, and the consumer.  
J. Tennant, 2018

WAGES

RES. FUNDING

RES. OUTPUTS PUBLISHED

SUBSCRIPTIONS

2 million €

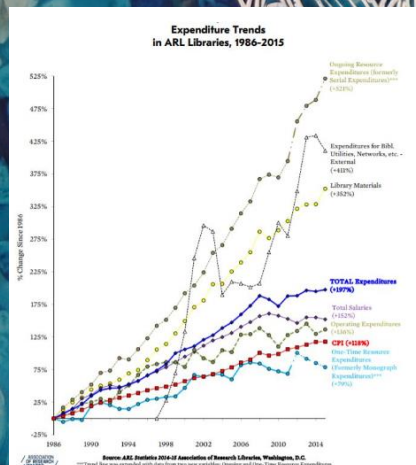
REUSE RIGHTS

521%

INCREASE IN SERIALS  
EXPENDITURES 1986-2015

GUESS: LIBRARY  
BUDGET INCREASED  
BY 521%?

CUTS, CUTS, CUTS





# ... scholar on today...



READING IS NOT FOR FREE

TODAY, WE PAY 3800/5000 € PER ARTICLE IN THE SUBSCRIPTION SYSTEM

WE PAY TO CLOSE

7.6 billion \$

[UNDERESTIMATED] AMOUNT OF MONEY SPENT IN SUBSCRIPTION IN 2016

36%

ELSEVIER NET GAIN

**Darragh Duffy** @darragh\_duffy

Elsevier's scientific publishing arm reported profits of £724 million on £2 billion in revenue - a 36% profit margin—higher than Apple, Google, or Amazon. Authors generate the "product", pay open access fees, and reviewers peer review for free & institutions pay for access 🙄

**Eloy Rodrigues** 20 h · 🌐

Science

A new mandate highlights costs, benefits of making all scientific articles free to read

By Jeffrey Brainard | Jan. 1, 2021, 12:01 AM

Jan 1, 2021

This is the publishers perspective (from the concluding paragraphs):  
 "The journal publishing industry's annual revenues of about \$10 billion represent less than 1% of total global spending on R&D—and, in this view, it's reasonable to divert more of the total to scholarly communications that are essential to making the entire enterprise run."

So it doesn't matter if there is growing evidence that we could have a much better scholarly communication system (more efficient, more innovative, more inclusive, more transparent and self-correcting) for a fraction of this \$10 billion. Let's focus on maintaining the current system, and especially the current big commercial companies that benefit from it, even if we (research institutions, governments and their taxpayers) need to use more resources to feed it. Right?

Wrong!

...PUBLISHER WOULD WANT MORE MONEY...

The Guardian view on academic publishing: disastrous capitalism **2019**  
*Editorial*

The giants of the scientific publishing industry have made huge profits for decades. Now they are under threat

LICENCE TO PRINT MONEY  
 [ANELASTIC MARKET]

Profit	Company <sup>2018</sup>	Industry
10%	BMW	automobiles
23%	Rio Tinto	mining
25%	Google	search
29%	Apple	premium computing
35%	Springer	scholarly pub
37%	Elsevier	scholarly pub







Jean-Sebastien Caux  
@jscaux

Following

The prospectus for the IPO of Springer Nature  
[proxy.dbagproject.de/mediacenter/re ...](https://proxy.dbagproject.de/mediacenter/re...)  
should be compulsory reading for any funder/university/agency representative negotiating with publishers. You can then question whether you should support #SciPost and similar initiatives, or can afford not to.

Traduci il Tweet

13:38 - 5 May 2018

22 Retweet 28 Mi piace



Prospectus dated April 25, 2018

**SPRINGER NATURE**

Prospectus

for the public offering

*Focus on Research, with a High-Quality Brand Portfolio, Global Scale Benefit from Strong Growth in the Open Access Publishing Market.*

increasingly important, as market participants increasingly differentiate in the open access market with regard to APCs according to a journal's impact factor. Our open access portfolio includes a large number of leading brands, such as such as Nature Communications, Scientific Reports and Springer Open, and high impact factor publications, positioning us well to command premium APCs from authors.

Springer Prospectus Apr. 25

[it's your  
accept this

THE WORLD  
UNIVERSITY  
RANKINGS

PROFESSIONAL JOBS SUMMITS RANKINGS

Linking impact factor to 'open access' charges creates more inequality in academic publishing

document aimed at potential investors, not a marketing tool for authors or librarians). In fact, for more than 10 years, long before DORA, *Nature* editorials have expressed concerns about the overuse

needed to fulfil our obligations. This has seen us stop using journal impact factors in isolation in our marketing (note: a prospectus is a legal

### 10.2.5 Increasing Share in Revenues from Open Access

«PRESTIGE» IS A RECIPE FOR  
DISASTER

Springer Nature was one of the first academic publishers to actively embrace the opportunities offered by open access, which provides us additional opportunities to generate revenues, as open access publications are funded by authors and/or their funders or the relevant research institutions, not libraries. Accordingly, revenues stemming from APCs are in the short- to medium-term supplementary to the subscription business, not cannibalistic. Some of our journals are among the open access journals with the highest impact factor, providing us with the ability to charge higher APCs for these journals than for journals with average impact factors.



# «Prestigious»



**Dr Danny Kingsley (she/her)**  
@dannykay68

May 6, 2021

INFLATION: [cell.com/rights-sharing...](https://cell.com/rights-sharing...)

Cell Press APCs that were previously \$5,200 have increased to \$8,900 (£7,000). That \$3,700 increase represents 71% of original price.

Gosh. Is this the "Nature effect"?

[Traduci il Tweet](#)

zenodo

Search



Upload

Communities

2021

April 15, 2021

Book section

Open Access

## University Rankings and Governance by Metrics and Algorithms

Chen, George; Chan, Leslie

This paper looks closely at how data analytic providers leverage rankings as a part of their strategies to further extract rent and assets from the university beyond their traditional roles as publishers and citation data providers. Multinational publishers such as Elsevier, with over 2,500 journals in its portfolio, has transitioned to become a data analytic firm. Rankings expand their abilities to monetize further their existing journal holdings, as there is a strong association between publication in high-impact journals and improvement in rankings. The global academic publishing industry has become highly oligopolistic, and a small handful of legacy multinational firms are now publishing the majority of the world's research output (See Larivière et. al. 2015; Fyfe et. al. 2017; Posada & Chen, 2018). It is therefore crucial that their roles and enormous market power in influencing university rankings be more closely scrutinized. We suggest that due to a combination of a lack of transparency regarding, for example, Elsevier's data services and products and their self-positioning as a key intermediary in the commercial rankings business, they have managed to evade the social responsibilities and scrutiny that come with occupying such a critical public function in university evaluation. As the quest for ever-higher rankings often works in conflict with universities' public missions, it is critical to raise questions about the governance of such private digital platforms and the compatibility between their private interests and the maintenance of universities' public values.



**Björn Brembs @brembs · 6 mag**

In risposta a @dannykay68

The entire stalling effort by publishers wrt APC-OA in the last decades now seems to me more and more like incredulity:

"we know academics aren't the sharpest knives in the drawer, but they can't be \*that\* stupid"

I guess the data are in: we really are.



1



3



**Leslie Chan @lesliekwchan · 19h**

I am slightly less harsh on fellow academics as there are forms of structural power that are not visible to them. Elite institutions eager to maintain their world rankings are only too eager to pay as E is in a position to make promises.



University Rankings and Governance by Metrics an...

This paper looks closely at how data analytic providers leverage rankings as a part of their ...

[zenodo.org](https://zenodo.org)



# Elsevier world

Publishers are increasingly in control of scholarly infrastructure and why we should care

A Case Study of Elsevier

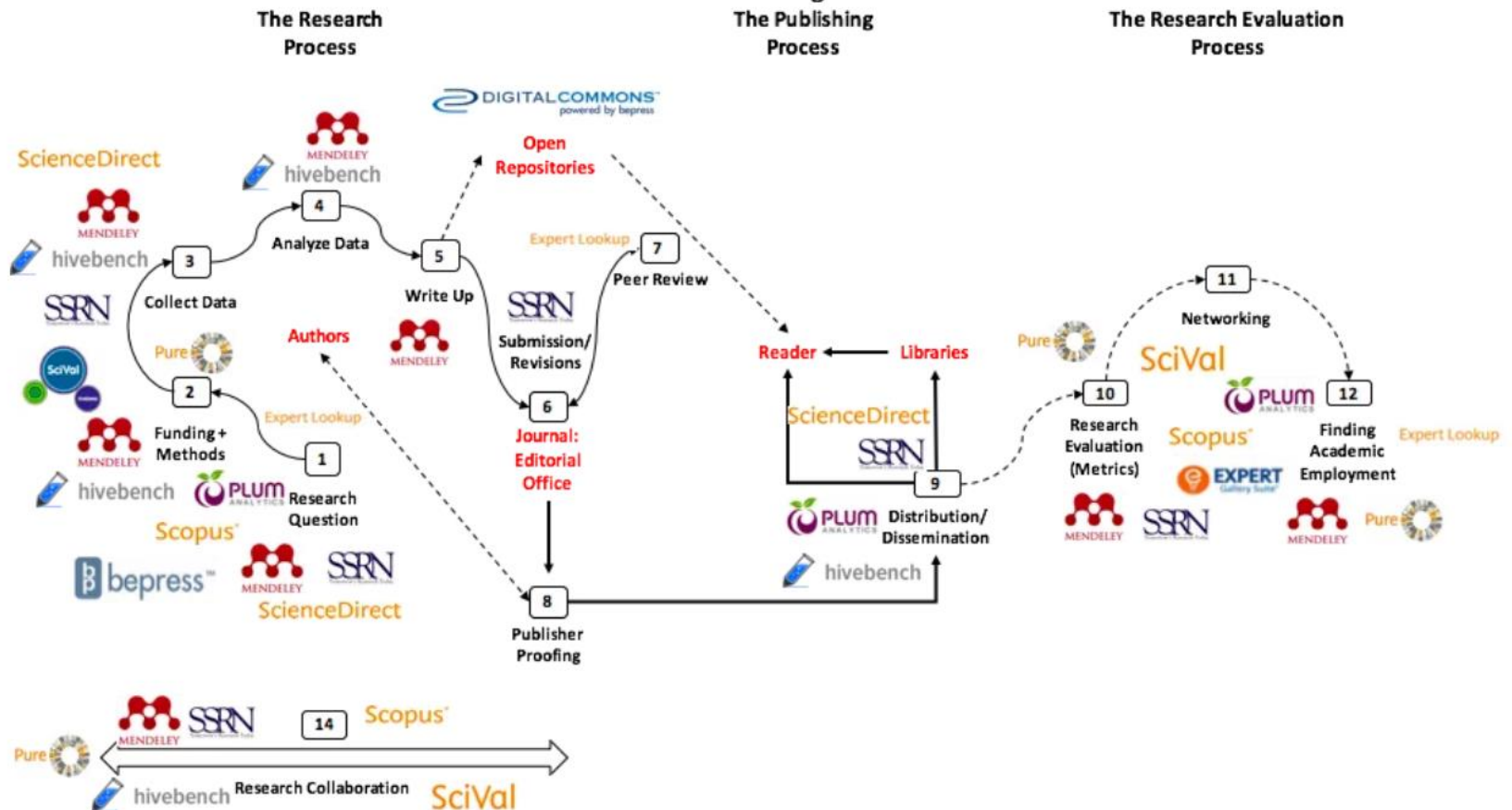
Written by: Alejandro Posada and George Chen, University of Toronto Scarborough

Published on September 20th 2017

2017



## The Academic Knowledge Production Process





...please avoid...

**Publishers before:**

**“You know that article you gave me? let me sell it to you”**

**Publishers now:**

**“You know that data you gave me? let me sell it to you”**

**Publishers in future:**

**“You know that data you gave me? let me sell it to others”**



...to avoid it...



# Stop Tracking Science

Stop tracking science

The major academic publishers have made collection and trading of data about the research interests of individuals, groups and research institutions their new business model. Data about your scientific activities are collected in real time across the research workflow. The publishers take notes and sell the knowledge about you to third parties. This business model is in direct opposition to academic freedom. We have to stand up against these corporations!

**Stop Tracking Science!**



# The market

## Executive Summary

2 mins read

Academic publishing is undergoing a major transition. Some of its leaders are moving from a content-provision to a data analytics business. This shift is still in its early days. There are actions and strategies that institutions can consider adopting to limit the potential harms, and leverage potential benefits.

FROM CONTENT  
PROVIDERS TO DATA  
ANALYTICS

SPARC\*

## LANDSCAPE ANALYSIS

The Changing Academic  
Publishing Industry –  
Implications for Academic  
Institutions

March 28, 2019

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2020

This report was commissioned in response to the growing trend of commercial acquisition of critical infrastructure in our institutions. It is intended to provide a comprehensive look at the current players in this arena, their strategies and potential actions, and the implications of these on the operations of our libraries and home institutions. It also outlines suggestions for an initial set of strategic responses for the community to evaluate in order to ensure it controls both this infrastructure and the data generated by/resident on it.





...BUT: is scholarly communication  
a market?

Principles of the Self-Journal of  
Science: bringing ethics and  
freedom to scientific publishing

VERSION 1 Released on 24 January 2015 under Creative Commons Attribution 4.0 International License

2017

Michaël Bon<sup>1</sup>

Authors' affiliations

1. SJS - The Self Journal of Science

## Inappropriateness

The dissemination of Science is organized as a free market, where publishers compete for reputation and scientists compete for limited number of slots in journals. The rationale of the free market economy is to have efficient exchanges of rare and substitutable goods (apples, mobile phones, money...) between those who own them and those who want them. Yet scientific knowledge, unlike money, is something its owners want to share. It is not a substitutable good. Scientists do want to be paid, but in a different currency – one that involves recognition and credit – whose amount on Earth is not limited. Therefore, the current system is deeply inappropriate to disseminate Science: it creates an artificial rarity that overrides the exchanges naturally underlying Science.



# Access?

## Who needs access? You need access!

Public access to scientific research makes all our lives better

[Home](#)[About](#)[FAQ](#)[Contribute](#)[Bibliography](#)[Newest Stories](#)

<https://whoneedsaccess.org/>



**Joanne Kamens** ✓

@JKamens

Segui

In risposta a @jasonpriem e @unpaywall

and btw the "everyone who needs it has access" is completely wrong. I have worked in small biotechs for the last 10 years and hit frustrating paywalls EVERY DAY trying to do good science.

Traduci dalla lingua originale: inglese

15:14 - 4 gen 2018

### There is a problem

...spend billions on funding research. But **most people don't have access to it**...  
...xpayers who ultimately funded the research.

...unded by government money or charities, do the research. They write up their  
...ormat the manuscripts, prepare figures, and send them to publishers. Other

Search

### Recent Posts

- Martin Eve, humanities researcher, open access innovator and cerebral

permesso di accesso



**Niccolò** [redacted] gmail.com>

a me ▾

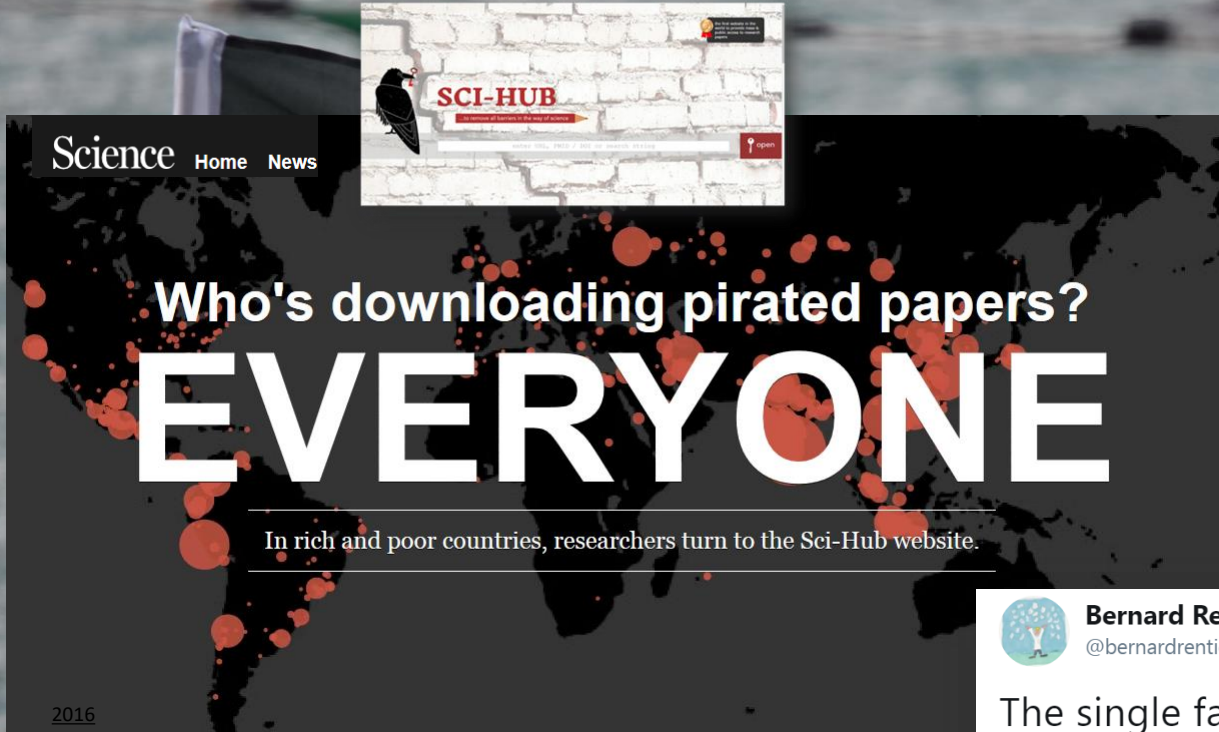
Buongiorno,  
sono uno studenti UNIMI e sto preparando la tesi, spesso nelle mie  
ricerche per il materiale, mi imbatto nel vostro sito IRIS ma non  
posso accedere all'articolo a cui sono interessato. Come posso  
ottenere il permesso?

SMEs, START-UPS, PRACTITIONERS,  
STUDENTS ONCE GRADUATED...

**NOBODY CAN READ THE OUTPUTS OF RESEARCH  
(WHICH IS FUNDED BY PUBLIC MONEY)**



... if not, Sci-Hub would not exist



**Bernard Rentier**  
@bernardrentier

Following

The single fact that providing free information on universal Science is illegal tells us a lot about how absurd it has become, in the Internet era, to rely on the old research publication model. [#FreeOpenAccessNow](#)

**Jon Tennant**  @Protohedgehog

Oh wow. Looks like anyone can now create their own @sci\_hub mirror [github.com/bsidio/sci-hub](https://github.com/bsidio/sci-hub) You can use this to help accelerate research and society by providing free access to millions of research articles. But it's probably illegal, so don't do it.

 Traduci il Tweet

08:37 - 10 mag 2018

March 10, 2018



# [alternative ways to get a pdf]

## HOW TO GET THE PDF?

Alternatives to the publisher version of full-text journal articles

updated: February 20, 2018

### 1 UNPAYWALL

Get full-text of research papers as you browse, using Unpaywall's index of 10 million legal, open access articles. For CHROME | Firefox  
<http://unpaywall.org/>



### 2 GOOGLE SCHOLAR BUTTON

Easy access to Google Scholar from any web page. Find full-text on the web or in your university library. Select the title of the paper on the page you're reading, and click the Scholar button to find it. for CHROME | Firefox  
<https://addons.mozilla.org/en-US/firefox/addon/google-scholar-button/>



### 3 KOPERNIO

Get instant notifications of available versions from your library or otherwise. Promising features like a personal Locker, saved articles and more.  
<https://kopernio.com/>



### 4 OPEN ACCESS BUTTON

Free, legal research articles and data delivered instantly or automatically requested from authors. You can do this from the website, or install a browser extension/API.  
<https://openaccessbutton.com/>



### 5 HASHTAG #ICANHAZPDF

Use the hashtag #icanhazpdf together with a link to the requested publication; if somebody has access, they can send you the PDF.  
<https://twitter.com/search?q=%23icanhazpdf>



## HOW TO GET THE PDF?

Alternatives to the publisher version of full-text journal articles

### 8 NARCIS

NARCIS provides access to scientific information, including open access publications from the repositories of all the Dutch universities, KNAW, NWO and a number of research institutes, datasets from some data archives as well as descriptions of research projects, researchers and research institutes.  
<https://www.narcis.nl/>

### 9 OSF PREPRINTS

OSF offers access to over 2 million open access preprints.  
<https://osf.io/>

### 10 DIRECTORY OF OPEN ACCESS JOURNALS

DOAJ offers access to over 10,000 open access journals.  
<https://doaj.org/>

### 11 SCIENCE OPEN

Science Open contains over 37 million articles, a large part in open access.  
<http://www.scienceopen.com/>



### 12 SCI-HUB

If all else fails, you may be tempted to use Sci-Hub. Do realize, however, that in many countries, including The Netherlands, the use of Sci-Hub is considered as an illegal act, as it involves content protected by copyright laws and licensing contracts.

open access.nl

News and events

What is open access? In the Netherlands You

## Alternative ways to access journal articles

Feb. 27, 2018

unpaywall

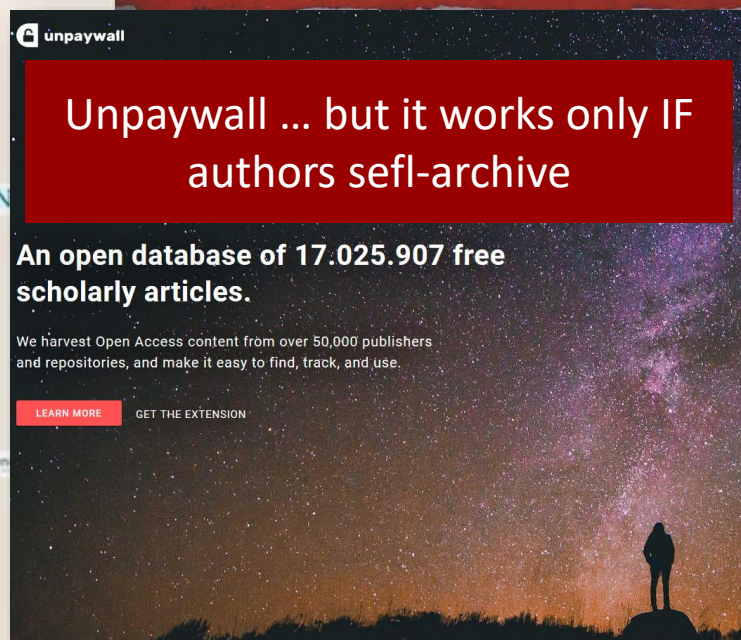
Unpaywall ... but it works only IF authors self-archive

An open database of 17.025.907 free scholarly articles.

We harvest Open Access content from over 50,000 publishers and repositories, and make it easy to find, track, and use.

LEARN MORE

GET THE EXTENSION







BREAK?



# Scholarly communication: does it work?

SOME MORE FIGURES... GUESS AGAIN WHAT THEY REPRESENT

9-18 MONTHS

179%

70%

43%



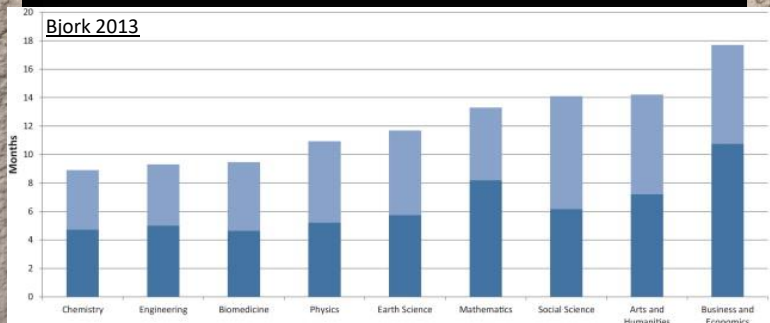
# Scholarly communication: does it work?

9-18 MONTHS



DURING A PANDEMIC?

## AVERAGE PUBLICATION TIME



Paola Masuzzo  
@pcmasuzzo

Today I witnessed the celebration of a research article published in a (famous & glam) journal after 2 and a half years of revisions. I do feel happy for the authors, of course, but I cannot help wondering what's there to celebrate in such a slow scientific dissemination process.

Traduci il Tweet

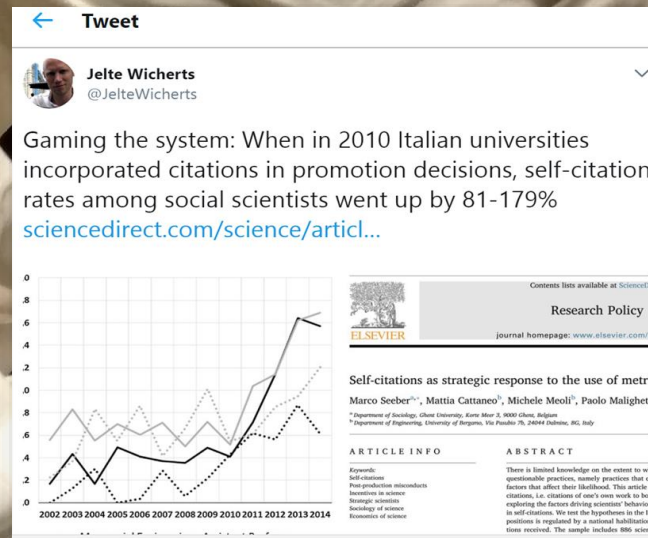
6:58 PM · 9 mag 2019 · Twitter for Android

P.Masuzzo, Sept. 2019



# Scholarly communication: does it work?

March 2018



SELF-CITATION INCREASE IN  
ITALY

179%

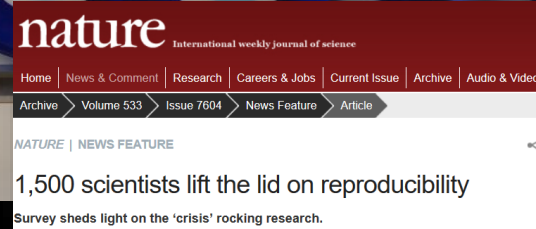




# Scholarly communication: does it work?

70%

## REPRODUCIBILITY FAILURE



The  
Alan Turing  
Institute

Home + Research + Research projects

## 'The Turing Way' - A handbook for reproducible data science

Developing a handbook for best practice in academic data science

### The Turing Way

1. Introduction
2. Reproducibility
3. Open Research
4. Version Control
5. Collaborating on GitHub/GitLab
6. Credit for reproducible research
7. Research Data Management
8. Reproducible Environments
9. Testing
10. Reviewing
11. Continuous Integration
12. Reproducible Research with Make
13. Risk Assessment

### Welcome to the Turing Way The Turing way

The Turing Way is a lightly opinionated guide to reproducible data science.

Our goal is to provide all the information that researchers need at the start of their projects to ensure that they are easy to reproduce at the end.

This also means making sure PhD students, postdocs, PIs, and funding teams know which parts of the "responsibility of reproducibility" they can affect, and what they should do to nudge data science to being more efficient, effective, and understandable.

#### A bit more background

Reproducible research is necessary to ensure that scientific work can be trusted. Funders and publishers are beginning to require that publications include access to the underlying data and the analysis code. The goal is to ensure that all results can be independently verified and built upon in future work. This is sometimes easier said than done. Sharing these research outputs means understanding data management, library sciences, software development, and continuous integration techniques: skills that are not widely taught or expected of academic researchers and data scientists.

The Turing Way is a handbook to support students, their supervisors, funders, and journal editors in ensuring that reproducible data science is "too easy not to do". It will include training material on version control, analysis testing, open and transparent communication with future users, and build on Turing Institute case studies and workshops. This project is openly developed and any and all questions, comments and recommendations are welcome at our GitHub repository: <https://github.com/alan-turing-institute/the-turing-way>.



# Scholarly community work?

<https://retractionwatch.com/>

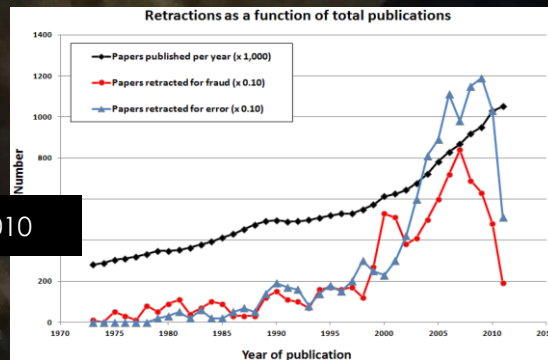
## Retraction Watch

Tracking retractions as a window into the scientific process

## The Retraction Watch Leaderboard

Who has the most retractions? Here's our unofficial list (see notes on methodology), which we'll update as more information comes to light:

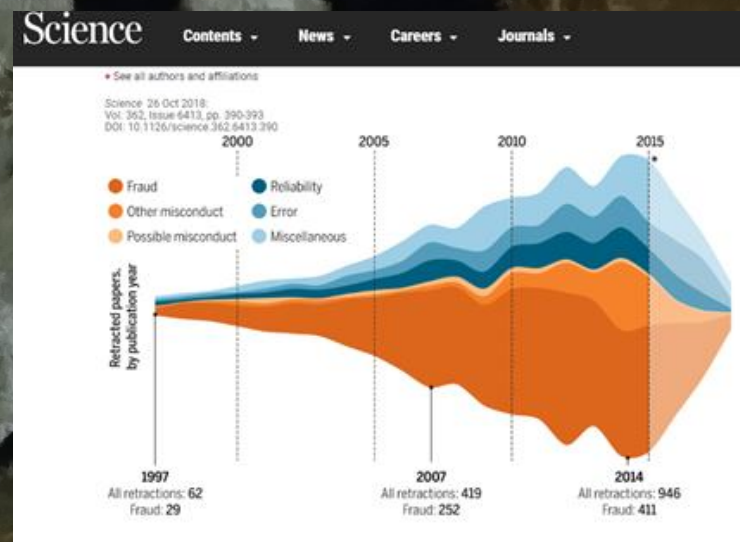
1. Yoshitaka Fujii (total retractions: 183) See also: [Final report of investigating committee](#), [our reporting](#), [additional coverage](#)
2. Joachim Boldt (136) See also: [Editors-in-chief statement](#), [our coverage](#)
3. Yoshihiro Sato (102) See also: [our coverage](#)
4. Jun Iwamoto (78) See also: [our coverage](#)
5. Ali Nazari (62) See also: [our coverage](#)
6. Diederik Stapel (58) See also: [our coverage](#)
7. Yuhji Saitoh (53) See also: [our coverage](#)
8. Adrian Maxim (48) See also: [our coverage](#)



1975-2010

RETRACTIONS FOR FRAUD

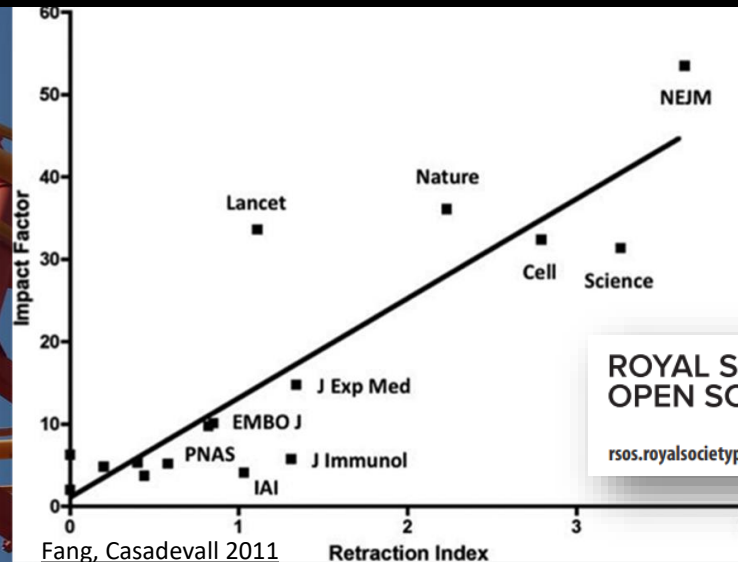
43%





# [Houston, we have a problem]

DIRECT CORRELATION  
#RETRACTIONS/IMPACT FACTOR



ROYAL SOCIETY  
OPEN SCIENCE

[rsos.royalsocietypublishing.org](https://rsos.royalsocietypublishing.org)


The natural selection  
of bad science

P. Smaldino, 2016

## REVIEW ARTICLE

Front. Hum. Neurosci., 20 February 2018 | <https://doi.org/10.3389/fnhum.2018.00037>

## Prestigious Science Journals Struggle to Reach Even Average Reliability

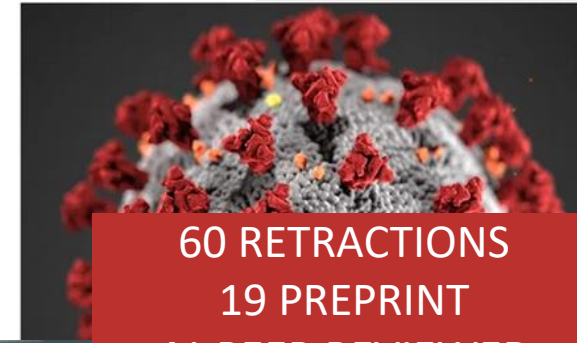
 Björn Brembs\*

Institute of Zoology—Neurogenetics, Universität Regensburg, Regensburg, Germany

Feb. 20 2018



Retracted coronavirus  
(COVID-19) papers  
Retraction watch





60 RETRACTIONS  
19 PREPRINT  
41 PEER REVIEWED  
PAPERS

THE LANCET

ew: does it wor

Retraction—Hydroxychloroquine or chloroquine with or without  
macrolide for treatment of COVID-19: a multinational registry a

Mandeep R Mehra  • Frank Ruschitzka • Amit N Patel

Published: June 05, 2020 • DOI: [https://doi.org/10.1016/S0140-6736\(20\)31324-6](https://doi.org/10.1016/S0140-6736(20)31324-6) •  Check for updates

After publication of our *Lancet* Article,<sup>1</sup> several concerns were raised  
with respect to the veracity of the data and analyses conducted by  
Surgisphere Corporation and its founder and our co-author, Sapan  
publication. We launched an independent third-party  
of Surgisphere with the consent of Sapan Desai to



The NEW ENGLAND  
JOURNAL of MEDICINE

Retraction: Cardiovascular Disease, Drug Therapy, and Mortality in Covid-19. N  
Engl J Med. DOI: 10.1056/NEJMoa2007621.

June 25, 2020

RETRACTED AFTER READERS EXPRESSED  
CONCERN

THESE ARTICLES HAVE UNDERGONE PEER REVIEW

Because all the authors were not granted access to the raw data and the raw data could not be  
made available to a third-party auditor, we are unable to validate the primary data sources  
underlying our article, "Cardiovascular Disease, Drug Therapy, and Mortality in Covid-19."<sup>1</sup> We  
therefore request that the article be retracted. We apologize to the editors and to readers of the  
*Journal* for the difficulties that this has caused.

Related Articles

ORIGINAL ARTICLE JUN 18, 2020

Cardiovascular Disease, Drug Therapy, and



# Snow

Retraction watch				Total cites (journals indexed by Web of Science)
Article	Year of retracti on	Citing Articles before retraction	Citing Articles after retraction	
1. <u>Primary Prevention of Cardiovascular Disease with a Mediterranean Diet</u> . N ENGL J MED; APR 2013.	<u>2018</u>	1910	627	2537
2. <u>Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children</u> LANCET; FEB 28 1998.	<u>2010</u>	642	780	1422
3. <u>Visfatin: A protein secreted by visceral fat that mimics the effects of insulin</u> SCIENCE; JAN 2005	<u>2007</u>	232	1146	1378
4. <u>An enhanced transient expression system in plants based on suppression of gene silencing by the p19 protein of tomato bushy stunt virus</u> PLANT J; MAR 2003.	<u>2015</u>	895	331	1226
5. <u>Lysyl oxidase is essential for hypoxia-induced metastasis</u> NATURE; APR 2006.	<u>2020</u>	970	36	1006
6. <u>TREEFINDER: a powerful graphical analysis environment for molecular phylogenetics</u> BMC EVOL BIOL; JUN 2004.	<u>2015</u>	836	154	990
7. <u>Cardiac stem cells in patients with ischaemic cardiomyopathy (SCIPIO): initial results of a randomised phase 1 trial</u> LANCET, NOV 2011.	<u>2019</u>	907	55	962
8. <u>Purification and ex vivo expansion of postnatal human marrow mesodermal progenitor cells</u> BLOOD; NOV 2001.	<u>2009</u>	596	303	899
9. <u>Viral pathogenicity determinants are suppressors of transgene silencing in Nicotiana benthamiana</u> EMBO J; NOV 1998.	<u>2015</u>	784	65	849
10. <u>Spontaneous human adult stem cell</u>				



Dec. 2020

# Elsevier looking into “very serious concerns” after student calls out journal for fleet of Star Trek articles, other issues

An undergraduate student in the United Kingdom has taken to task the editors of a purportedly scholarly journal for having

Grech is a pediatric cardiologist, and, evidently a huge Star Trek fan. He’s also a prolific author, and seems to have turned *EHD* into something of a personal fanzine. As Gaddy notes in his letter, Grech has written at least 113 papers in *EHD*, an Elsevier title, 57 as sole author:

19 of these 113 ar

Star Trek. 1

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Many of t

category of

it work?

## Early Human Development

An international journal concerned with the continuity of fetal and postnatal life

Editor-in-Chief: [E. F. Maalouf](#)

[View Editorial Board](#)

[CiteScore: 3.1](#) [Impact Factor: 1.969](#)

Established as an authoritative, highly cited voice on early human development, *Early Human Development* provides a unique opportunity for researchers and clinicians to bridge the communication gap between disciplines. Creating a forum for the productive exchange of ideas concerning early human growth...

EARLY HUMAN  
DEVELOPMENT  
PUBLISHED BY  
ELSEVIER  
«AUTHORITATIVE,  
HIGHLY CITED»



Feb. 2, 2021

## Researcher to overtake Diederik Stapel on the Retraction Watch Leaderboard, with 61

*Nazari's publications include falsification of results, plagiarism (including self-plagiarism), and manipulation of authorship. A series of 13 recent retractions by Springer also noted "evidence of peer review manipulation." To date, these issues have resulted in 48 retractions. I have recently compiled a report, summarized by Retraction Watch, which documents how Nazari's works appear to be part of an international research fraud ring.*

## No academic post for fraudster Diederik Stapel, after all 2016 .

Recently, we reported that social psychologist and renowned data faker Diederik Stapel had found himself a new gig supporting research at a vocational university in the Netherlands — but it appears that was short-lived.



Diederik Stapel

According to multiple news reports, NHTV Breda will not be employing Stapel, after all.

Here's our Google translate of a portion from *De Telegraaf*: Continue reading →

# The ruins of science

## Does scientific misconduct cause patient harm? The case of Joachim Boldt 2013

An internal investigation found no evidence of harm to the patients Boldt treated, and the the Cochrane review found "no change in the findings related to the inclusion or exclusion of the studies by Boldt et al.," according to the editorial. But the new meta-analysis found something different:

*After exclusion of the studies by Boldt et al, Zarychanski et al found that hydroxyethyl starch was associated with a significantly increased risk of mortality (risk ratio [RR], 1.09; 95% CI, 1.02-1.17) and renal failure (RR, 1.27; 95% CI 1.09-1.47).*

## 2018 Stem cell researchers investigated for misconduct recommended for roles at Italy's NIH

Two stem cell scientists who left Harvard University in the aftermath of a messy misconduct investigation may have found new roles in Italy's National Institute of Health.

According to a document on the institute's website, which we had translated, Piero Anversa and Annarosa Leri have been approved to start work at the Istituto Superiore di Sanità (ISS) by the institute's board of directors. However, the president of the organization told us that the



Piero Anversa

## 2018 Swedish review board finds misconduct by Macchiarini, calls for six retractions

An ethical review board in Sweden is asking journals to retract six papers co-authored by former star surgeon Paolo Macchiarini, after concluding that he and his co-authors committed misconduct.



Paolo Macchiarini

One of the papers is the seminal 2011 article in The Lancet, which described the first case of a transplant using an artificial trachea seeded with the patient's own stem cells, and now bears an expression of concern from The Lancet editors. Over time, multiple authors have asked to be removed from the paper.

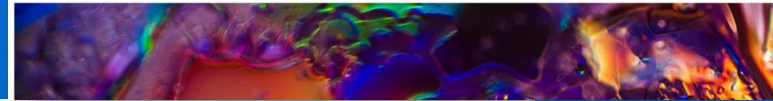
The Expert Group on Scientific Misconduct at the Central Ethical Review Board has determined that concerns over that paper — and five others co-authored by Macchiarini, once based at the Karolinska Institutet (KI) — were justified. In a press release, it says:



# Science?

## Science needs a radical overhaul

The lure of the illusion of discovery



Indeed, after 10 years as a journal editor, seeing how things work behind the scenes, I'm convinced that journals and the people who run them (editors, publishers, societies) are a bigger culprit for the spread of bad science than are individual researchers. Journals compete to be the most prestigious, but the race for prestige is not determined by who provides the best quality control. Instead, journals compete to publish the most attention-grabbing papers – the papers that are going to get the most clicks, media attention, and citations. In other words, journals are rewarding scientists for being flashy, for producing big, bold findings, and they are looking the other way when it comes to questions about whether those findings are reliable and whether the methods were rigorous. This reality is in stark contrast to the common myth about peer review – that journal-based peer review is a quality filter, and that the most prestigious journals have the most stringent filter. But the myth persists.

This misplaced faith in prestigious journals' peer review system is doing serious damage to science. Scientists continue to chase the reward of getting published in prestigious journals (because their livelihoods often depend on it,



[what about Impact Factor?]



00:59 - 7 set 2017

**10** Retweet **16** Mi piace

Q

↺ 10

16



In risposta a [@jaca99](#)



A cartoon illustration of Bart Simpson standing in front of a chalkboard. He is holding a piece of chalk and has just written the word 'ate.' on the board. The word 'ate.' is written five times in a vertical column. Bart is wearing his signature red shirt, blue shorts, and blue sneakers with white socks. He has a mischievous expression on his face.

J.Tennant 2017



► is imposed by a very small number of highly cited papers

Source Data

**CONTACT INFORMATION**



100

100

n:2001 = 528

$$2000 \equiv 504$$

Sum: 1032

2003 ICR Science Edition

Cited Journal   Citing Journal   Source Data   Journal Self Cites

Cites in 2003 to items published in: 2002 = 3628

2001 = 3923

Sum: 7551

Calculation:  $\frac{\text{Cites to recent items}}{\text{Number of recent items}} = \frac{7551}{634} = 11.91$

Number of Percent Items 5.24

Number of items published in: 2002 = 334

2001 = 300

Sum: 634

0

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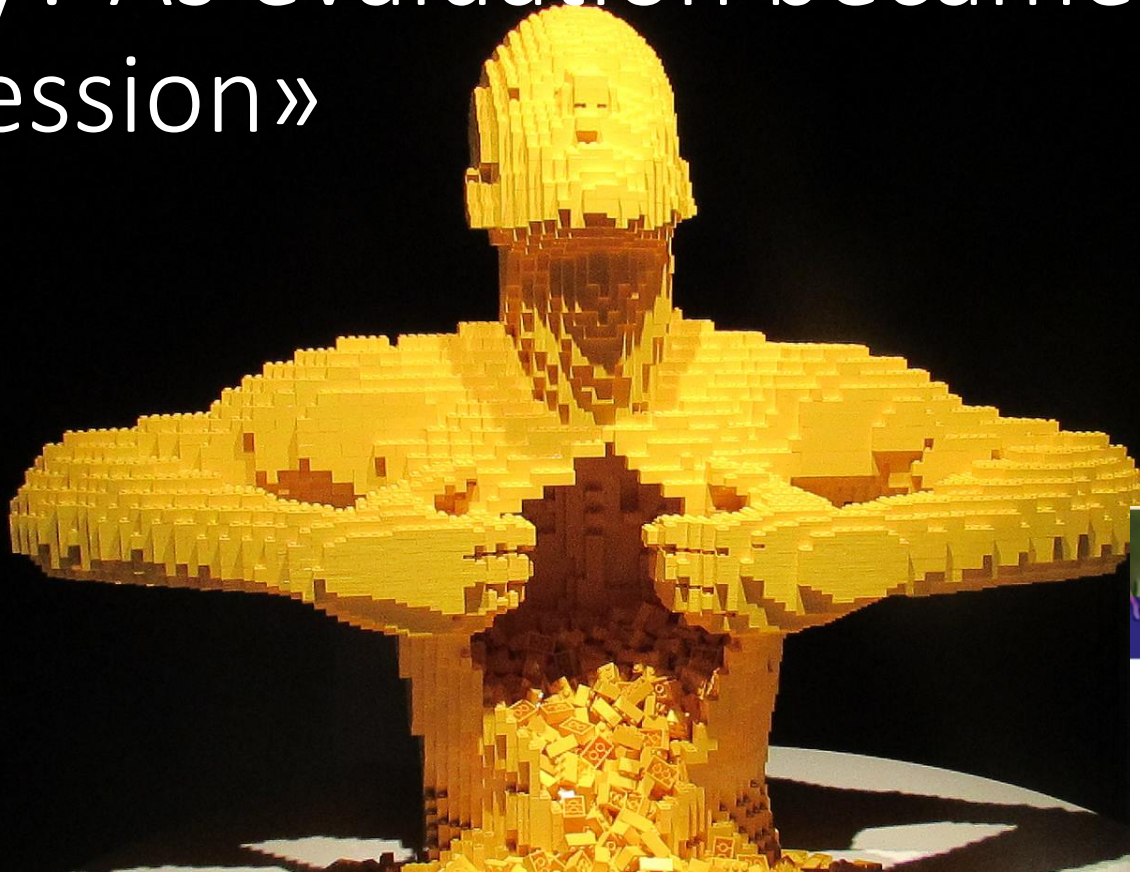
published in X-1 X-2

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published in X-1 X-2



# ... why? As evaluation became an «Obsession»



THE  
ROYAL  
SOCIETY  
The future of  
scholarly scientific  
communication  
2015  
Conference 2015

## EVALUATION BECAME AN OBSESSION

- «not only are we failing to provide the right incentives, we are providing perverse ones»
- Goodhart's law: «when a measure becomes a target, it ceases to be a good measure»
- «people game the system at every level»



# Obsession

WORLD VIEW • 06 FEBRUARY 2019

2019

## We need to talk about systematic fraud



Software that uncovers suspicious papers will do little for a community that does not confront organized research fraud, says Jennifer Byrne.

let alone talk about it. It is even more uncomfortable to think about organized fraud that is so frequently associated with one country. This becomes a vicious cycle: because fraud is not discussed, people don't learn about it, so they don't consider it, or they think it's so rare that it's unlikely to affect them, and so papers are less likely to come under scrutiny. Thinking and talking about systematic fraud is essential to solving this problem. Raising awareness and the risk of detection may well prompt new ways to identify papers produced by systematic fraud.

I was told impact metrics could make or break careers. Instead, they broke my faith in scientific research

2018



Performance-driven culture is ruining scientific research

**The Guardian** Opinions

COBRA EFFECT: WHEN INDIANS WERE PAID FOR EVERY DEAD COBRA THEY HANDED, THEY STARTED BREEDING COBRAS

## Causes for the Persistence of Impact Factor Mania

2013

Arturo Casadevall<sup>a</sup> and Ferric C. Fang<sup>b</sup>

► Author information ► Copyright and License information ► Disclaimer

This article has been corrected. See [mBio. 2014 June 3; 5\(3\): e01342-14.](#)

This article has been cited by other articles in PMC.

### ABSTRACT

Go to:

Numerous essays have addressed the misuse of the journal impact factor for judging the value of science, but the practice continues, primarily as a result of the actions of scientists themselves. This seemingly irrational behavior is referred to as "impact factor mania." Although the literature on the impact factor is extensive, little has been written on the underlying causes of impact factor mania. In this perspective, we consider the reasons for the persistence of impact factor mania and its pernicious effects on science. We conclude that impact factor mania persists because it confers significant benefits to individual scientists and journals. Impact factor mania is a variation of the economic theory known as the "tragedy of the commons," in which scientists act rationally in their own self-interests despite the detrimental consequences of their actions on the overall scientific enterprise. Various measures to reduce the influence of the impact factor are considered.

PHYS ORG

## INDICES DON'T MEASURE QUALITY

FEBRUARY 17, 2020

### Scientists call for reform on rankings and indices of science journals

by University of Oslo



"Our message is quite clear: Academics should stop worrying too much about indices. Instead, we should work more on the scholarship and the quality of research," says Professor Colin Chapman from the Department of Anthropology at the George Washington University in Washington.

"The exaggerated reliance on indices is taking attention away from the quality of the science. The system works just fine for experienced researchers like Colin Chapman and myself, but younger researchers and their careers are suffering

because of the way indices are used today," adds Professor Nils Chr. Stenseth at the University of Oslo.

[Indices don't measure quality](#)

PRS, 2020



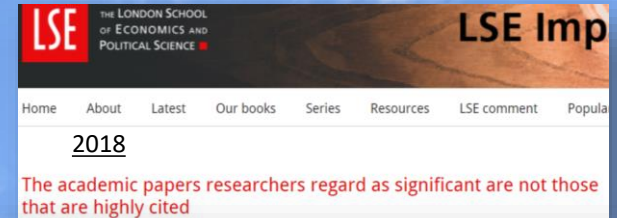
Spinal Cord  
Editorial Published: 07 September 2018  
Guest Editorial  
**Publication pressure and scientific misconduct: why we need more open governance**  
Sept. 7, 2018

This research culture can lead to cost- and corner-cutting, with hasty publication of irreproducible results and poor-quality work—it's an era in which scientists can fall prey to the temptation to do whatever they can get away with in order to publish. This leads to scientific misconduct, commonly defined as 'fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results'. A well-known recent case is Professor

- PUBLISHING «A RESULT» HAS BECOME MORE IMPORTANT THAN PUBLISHING A CORRECT RESULT
- GAMING METRICS IS AN OCCUPATIONAL REQUIREMENTS FOR SCIENTISTS



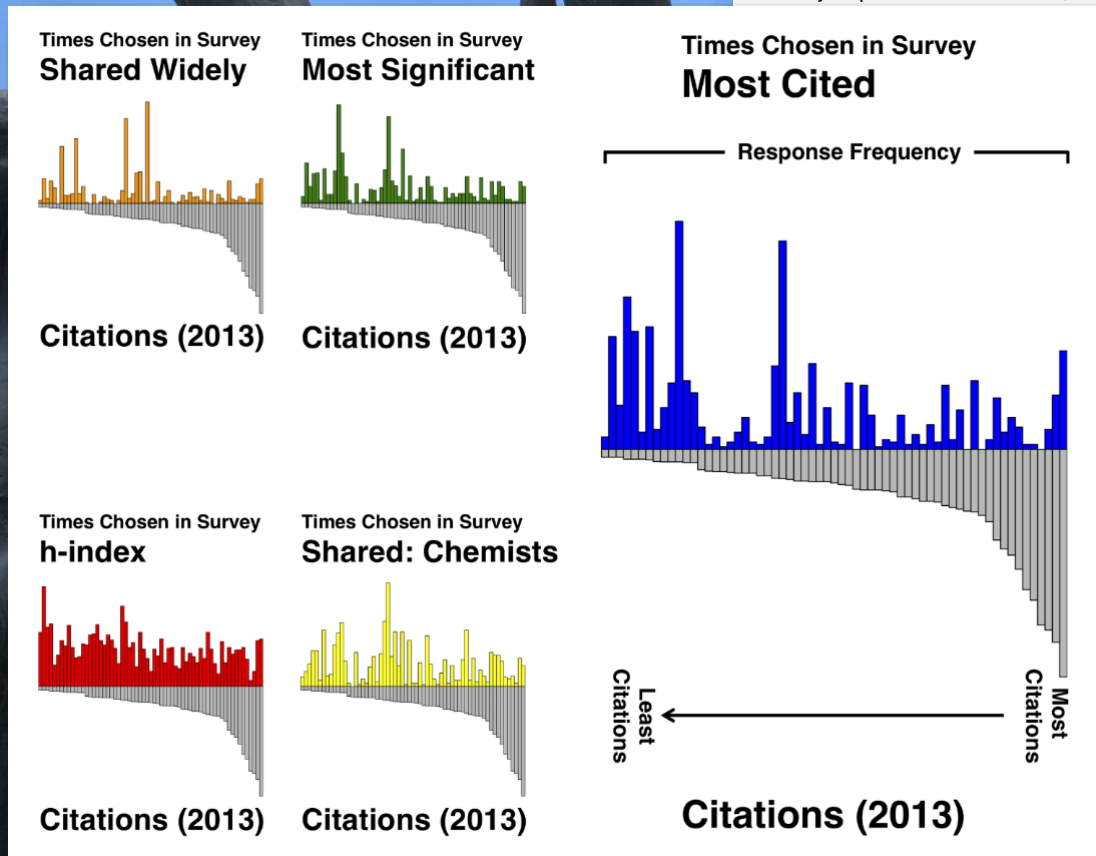
# ...citations?



So what now? We think this work clearly highlights a major issue with metrics – they aren't measuring what everyone commonly assumes we are measuring, or at least, are not accurately representing the more abstract perceptions of impact and importance that we measured in our survey.

As hinted earlier, we think our research shows that impact goes beyond citation count, and beyond scholarly impact. Recent articles, such as that in *PLoS Biology* and *Nature*, also call out current

what can we done to change current practice?





# Doping?



•Sept. 11, 2019

PUBLISH ABOUT

OPEN ACCESS PEER-REVIEWED

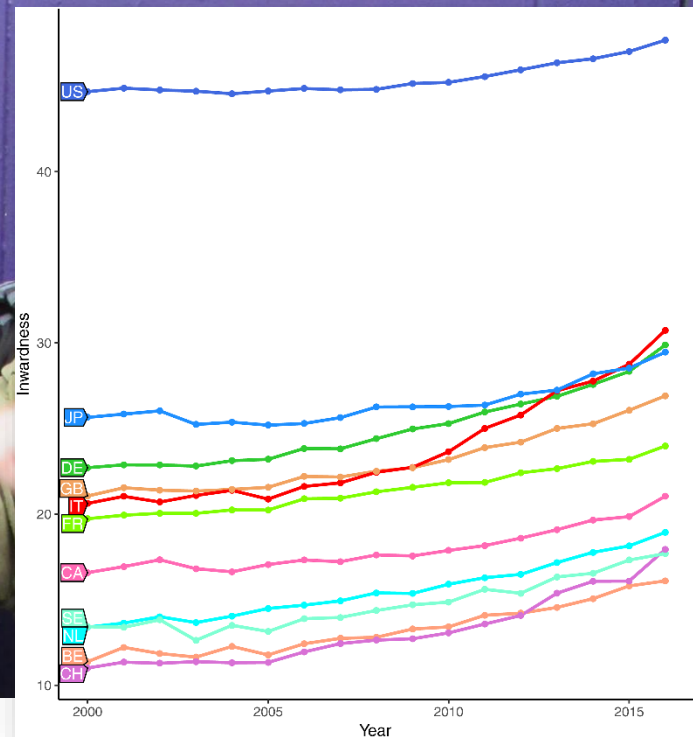
RESEARCH ARTICLE

## Citation gaming induced by bibliometric evaluation: A country-level comparative analysis

Alberto Baccini, Giuseppe De Nicolao, Eugenio Petrovich

### Abstract

It is several years since national research evaluation systems around the globe started making use of quantitative indicators to measure the performance of researchers. Nevertheless, the effects on these systems on the behavior of the evaluated researchers are still largely unknown. For investigating this topic, we propose a new inwardness indicator able to gauge the degree of scientific self-referentiality of a country. Inwardness is defined as the proportion of citations coming from the country over the total number of citations gathered by the country. A comparative analysis of the trends for the G10 countries in the years 2000-2016 reveals a net increase of the Italian inwardness. Italy became, both globally and for a large majority of the research fields, the country with the highest inwardness and the lowest rate of international collaborations. The change in the Italian trend occurs in the years following the introduction in 2011 of national regulations in which key passages of professional careers are governed by bibliometric indicators. A most likely explanation of the peculiar Italian trend is a generalized strategic use of citations in the Italian scientific community, both in the form of strategic author self-citations and of citation clubs. We argue that the Italian case offers crucial insights on the constitutive effects of evaluation systems. As such, it could become a paradigmatic case in the debate about the use of indicators in science-policy contexts.





# Communication or competition?

PERVERSE INCENTIVES +  
HYPERCOMPETITION =  
SCIENTIFIC MISCONDUCT / FAKE DATA

RISK OF LOOSING PUBLIC TRUST



ENVIRONMENTAL ENGINEERING SCIENCE

Mary Ann Liebert, Inc. publishers

Journals

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Alerts

*Environ Eng Sci* 2017 Jan 1; 34(1): 51–61.

Published online 2017 Jan 1. doi: [10.1089/ees.2016.0223](https://doi.org/10.1089/ees.2016.0223)

PMCID: PMC5206685

## Academic Research in the 21st Century: Maintaining Scientific Integrity in a Climate of Perverse Incentives and Hypercompetition

Marc A. Edwards<sup>\*,†</sup> and Siddhartha Roy<sup>†</sup>

### Abstract

Go to: ☒

Over the last 50 years, we argue that incentives for academic scientists have become increasingly perverse in terms of competition for research funding, development of quantitative metrics to measure performance, and a changing business model for higher education itself. Furthermore, decreased discretionary funding at the federal and state level is creating a hypercompetitive environment between government agencies (e.g., EPA, NIH, CDC), for scientists in these agencies, and for academics seeking funding from all sources—the combination of perverse incentives and decreased funding increases pressures that can lead to unethical behavior. If a critical mass of scientists become untrustworthy, a tipping point is possible in which the scientific enterprise itself becomes inherently corrupt and public trust is lost, risking a new dark age with devastating consequences to humanity. Academia and federal agencies should better support science as a public good, and incentivize altruistic and ethical outcomes, while de-emphasizing output.



# Evaluation is the key / 1

We recognise that researchers need to be given a maximum of freedom to choose the proper venue for publishing their results and that in some jurisdictions this freedom may be covered by a legal or constitutional protection. However, our collective duty of care is for the science system as a whole, and researchers must realise that they are doing a gross disservice to the institution of science if they continue to report their outcomes in publications that will be locked behind paywalls.

We also understand that researchers may be driven to do so by a misdirected reward system which puts emphasis on the wrong indicators (e.g. journal impact factor). We therefore commit to fundamentally revise the incentive and reward system of science, using the San Francisco Declaration on Research Assessment (DORA)<sup>4</sup> as a starting point.

PlanS Preamble

- PAYWALLS ARE A DISSERVICE TO SCIENCE
- RESEARCHERS MIGHT BE DRIVEN BY A MISDIRECTED REWARD SYSTEM



# ... evaluation is the key / 2

## EVALUATION

- AFFECTS THE BEHAVIOUR
- PROMOTES COMPETITION OVER COLLABORATION
- MAINTAINS HIGH JOURNALS PRICES BASED ON PRESTIGE
- FAILS TO RECOGNIZE RESEARCH OUTPUTS LIKE DATA, CODE, BLOGS...

**International  
Science Council**

metrics designed to assess the importance and impact of research as an aid to evaluation, with publication outputs in traditional scientific journals being the major focus. These metrics in turn affect the behaviour of researchers, such as their choice of journals, as they seek to maximize their performance as measured by the metrics used. They can contribute to the maintenance of high journal prices, promote intense competition rather than openness and sharing, and fail to recognize research contributions such as the production of datasets, software, code, blogs, wikis and forums.

ICSU 2014



# ...evaluation is the key / 3

- ARCHAIC SYSTEM
- THE PITFALL LIES IN THE WAY RESEARCHERS ARE EVALUATED
- EVALUATION URGES SCIENTISTS TO FOCUS ON WRITING AS A GOAL IN ITSELF
- WITH PERVERSE EFFECTS

The scientific communication system has hardly been modernised in recent decades and has even become archaic in view of the modern developments in communication. Delays between submission and publication of articles and monographs are excessively long : by the time they appear, some research is already out of date. In addition, publication costs are far too high in relation to the real cost of electronic dissemination.

The pitfall also lies in the way researchers are evaluated. Based on the number of their publications and the prestige of the journals that publish them, assessment urges scientists to focus on writing articles as if it were a goal in itself. This type of evaluation does not do justice to the merits of the researcher and its effects on science are perverse: a plethora of publications and a decline in their quality (1). In the

07  
samedi  
Nov 2020

*The need for Open Science, in times of pandemic and far beyond*

POSTED BY BERNARDRENTIER01 IN CORONAVIRUS/COVID,

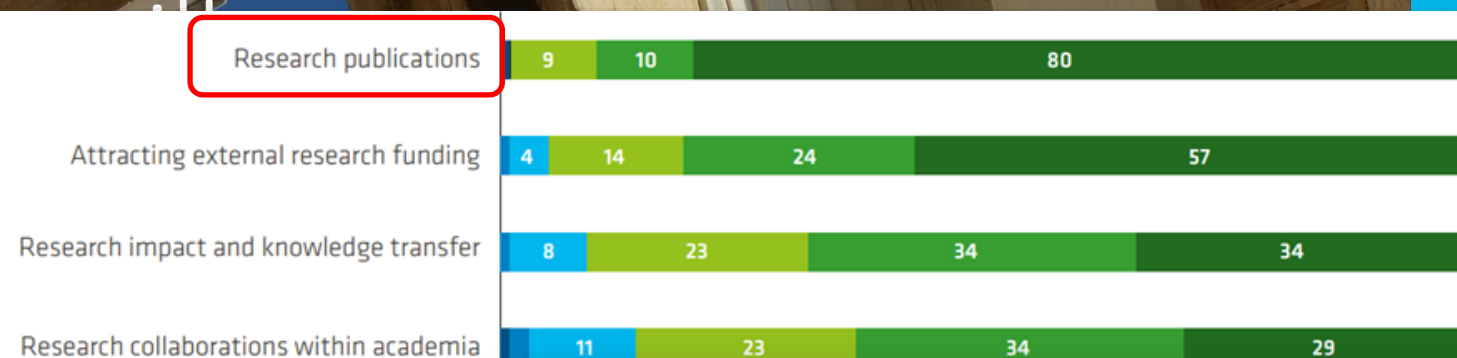
≈ 1



# ...but still... publications are t

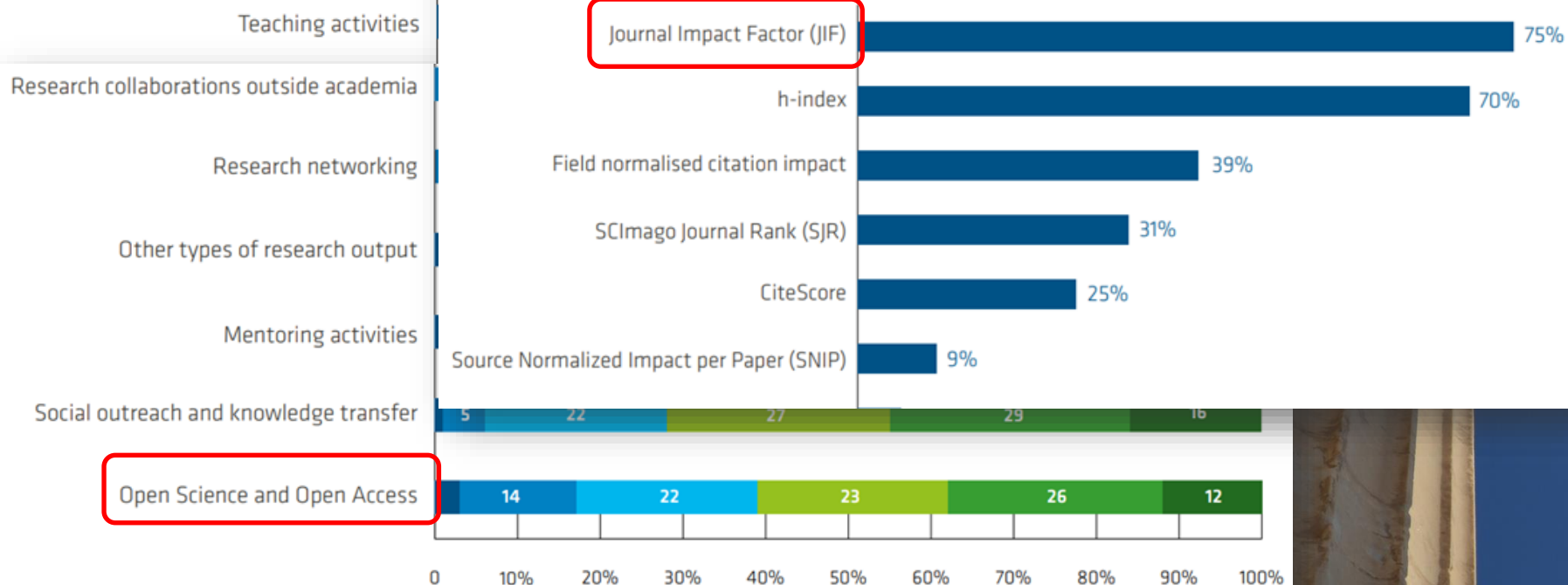
## Research Assessment in the Transition to Open Science

UA Open Science and Access  
Results



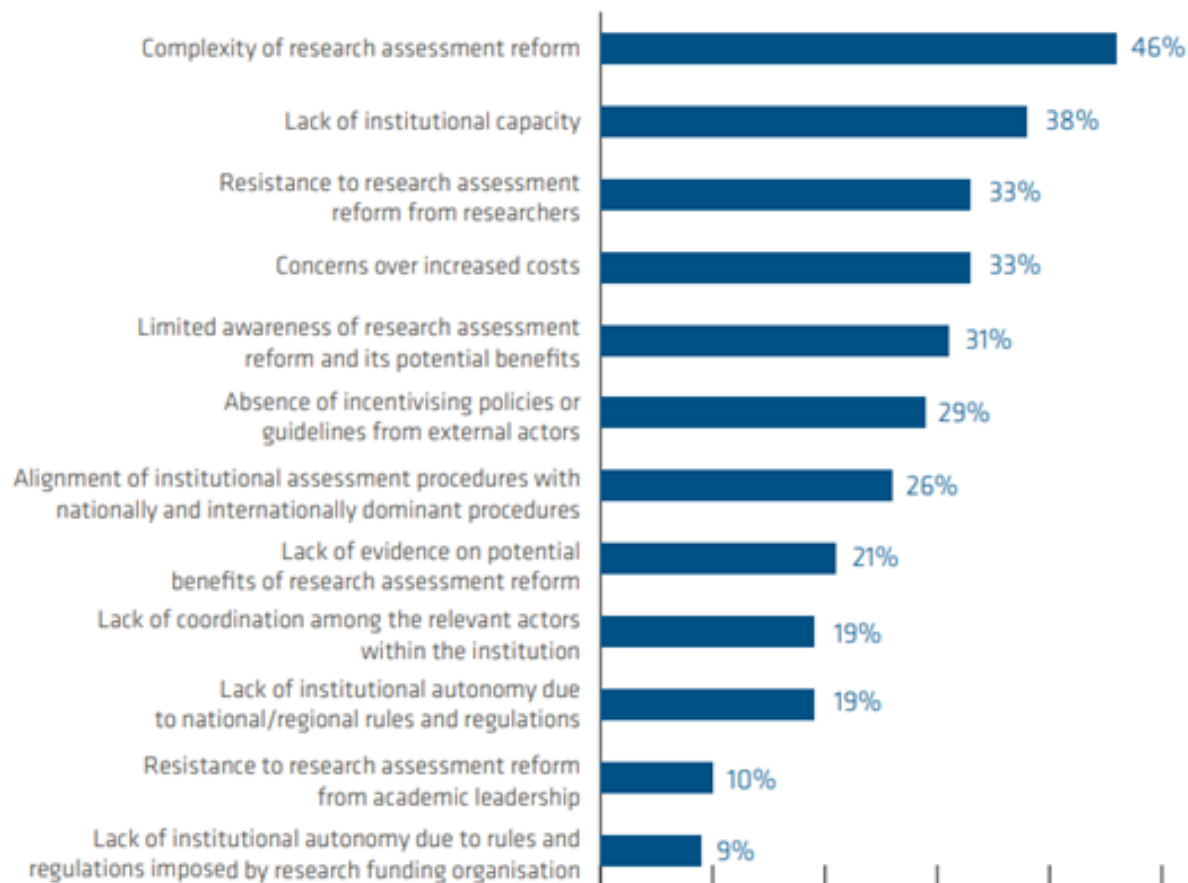
**Figure 11** – Publication metrics used for research careers

Based on survey question 8a, multiple-choice (cf. Annex 1). Number of respondents: 185/186





# ...and the reasons not to change



2019

eua  
EUROPEAN  
UNIVERSITY  
ASSOCIATION

## Research Assessment in the Transition to Open Science

2019 EUA Open Science and Access  
Survey Results

Brecht Saenen, Rita Morais,  
Vinciane Galliard and Lidia Bonetti Damico



# The system is broken

## RESEARCH CULTURE IS BROKEN, OPEN SCIENCE CAN FIX IT

YouTube IT

June 2019



Research Culture is Broken; Open Science can Fix It | Rachael A.

# Open Science Stories

Podcasts

**Open Science TV**  
223 iscritti

HOME VIDEO PLAYLIST CANALI DISCUSSIONE INFORMAZIONI

**9 circles of hell of a scientific paper publishing, or the world is ...**  
201 visualizzazioni • 1 settimana fa

What is a difference between a news paper article and a scientific article? 'Elephants on the street' versus 'There are no elephants but they should be there'. During the third part of our interview with Björn Brembs we talked about the traditional scientific publishing in commercial journals. In highly digitalized era, this process is certainly old-fashioned, as it is not scrutinised as it needs to be which can lead to a lot of mistakes

ULTERIORI INFORMAZIONI

Video caricati ▶ RIPRODUCI TUTTI

| Video Title   | Visualizzazioni      | Tempo          |
|---|----------------------|----------------|
| Cost of scientific prestige and why it is so expensive ...        | 64 visualizzazioni   | 19 ore fa      |
| 9 circles of hell of a scientific paper publishing, or the wor... | 201 visualizzazioni  | 1 settimana fa |
| L'editoria scientifica è una macchina per fare un sacco...        | 600 visualizzazioni  | 1 mese fa      |
| Open Science is a tool which creates a new infrastructure...      | 339 visualizzazioni  | 2 mesi fa      |
| What is Open Science: even a 12-year old child can...             | 1058 visualizzazioni | 3 mesi fa      |



# The system is broken

I would need to add

- That questionable **academic** practices like power abuse, sexism, racism, and gaslighting are subtle, pervasive, and impactful
- That mental health issues among doctoral candidates are real, prevalent, and preventable
- That good people, especially women and non-white men, are leaving academia because of its systemic issues

And *that*, that is definitely not sustainable.

This is not **just** the way things are.

It's how things have been built and we reproduce it with our everyday choices.

It is how things are, but not how they have to remain.

## Reflections on my PhD and building sustainable science



Chris Hartgerink  
Apr 20 · 5 min read

Following

April 20, 2020





# The system is broken



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

## The letter

The *Bullied Into Bad Science* campaign is an initiative by early career researchers (ECRs) for early career researchers who aim for a fairer, more open and ethical research and publication environment.

We are postdocs and a reader in the humanities and sciences at the University of Cambridge. **We are concerned about the desperate need for publishing reform** to increase transparency, reproducibility, timeliness, and academic rigour of the production and dissemination of scholarly outputs (see [Young et al. 2016](#), [Smaildino & McElreath 2016](#)).

We have identified actions that institutions and managers can take to better support ECRs (below). These actions are crucial for our success because we are eager to publish openly and at places that keep profits inside academia in accordance with many modern online publication venues ([Logan 2017](#)). However, **ECRs are often pressured into publishing against their ethics** through threats that we would not get a job/grant unless we publish in particular journals ([Carter et al. 2014](#), [Who is going to make change happen?](#), [Kent 2016](#); usually these journals are older and more familiar, have a print version, a high impact factor, and are not 100% open access). These out of date practices and ideas hinder ECRs rather than help us: evidence shows that publishing open access results in increased citations, media attention, and job/funding opportunities ([McKiernan et al. 2016](#)). Open dissemination of all research outputs is also a fundamental principle on which ECRs rely to fight the ongoing reproducibility crisis in science and thus improve the quality of their research.

To support ECRs in this changing publishing landscape, we encourage funders, universities, departments, and politicians to take the following actions (below) and to announce these actions in public statements. We consider these actions essential for enabling ECRs to do and disseminate our research as we intend it, in an open, modern, and rigorous way. We feel that **failure to adequately support ECRs, which are a vulnerable group, will prevent us from delivering outstanding academic outputs and becoming the academic leaders of the future**, and thus decrease our nation's reputation for world-leading research.

**If you, too, have felt pressured into taking professional actions that are against your ethics, please mark which actions you agree with and join our effort to change academic culture.**

We will send letters that include the number of ECRs who signed each action (and their names and affiliations, plus some anonymised anecdotes about ECR experiences) to relevant institutions, focusing on UK politicians, universities, and funders, and to the press to generate publicity. Our aim is to instigate institutions into taking actions that are relevant to us to improve academic culture for ECRs. You can stay updated with the progress of this effort and view the letters with the actions and signatories at [www.CorinaLogan.com](http://www.CorinaLogan.com) and [www.BulliedIntoBadScience.org](http://www.BulliedIntoBadScience.org). The actions and their signatories will be available for reference by others who wish to create change in academic culture beyond the UK.



# ...a deadly embrace



**Bernard Rentier**  
@bernardrentier

Following

The accomplices are you and me, the researchers who pay to publish, the researchers who evaluate them, the researchers who review their articles graciously for the benefit of the publishers, the researchers who pay to read. All being afflicted with prestige-dependency syndrome.

Traduci dalla lingua originale: inglese

10:13 - 18 feb 2018

## Realising the European Open Science Cloud

Final report and recommendations of the Commission High Level Expert Group on the European Open Science Cloud



<https://goo.gl/PxoYzv>

But let's not ignore the facts: the science system is in landslide transition from data-sparse to data-saturated. Meanwhile, scholarly communication, data management methodologies, reward systems and training curricula do not adapt quickly enough if at all to this revolution. **Researchers, funders and publishers (I always thought that meant making things public) keep each other hostage in a deadly embrace by continuing to conduct, publish, fund and judge science in the same way as in the past century.**

**So far, no-one seems to be able to break this deadlock.** Open Access articles are solve only a fraction of the problem. Neither 'open research data' alone will do. W





# Ssssst...is something changing?

Opinion | 21 May 2020

May 21, 2020

## Open access: how COVID-19 will change the way research findings are shared



**Robert Kiley**  
Head of Open Research  
Wellcome

During the COVID-19 pandemic, researchers and publishers have pulled together to publish their outputs at an unprecedented rate. So, how have they responded? And how will this change research culture and the way findings are disseminated in future?

Building a better research culture and improving publication practices are within our grasp. Seizing this opportunity and ensuring that all research is published open access must become one of the positive outcomes from the COVID-19 pandemic.

A lot of power lies in the hands of a few core publishing houses, but it is the choice of universities and researchers to chase the prestige that those publishers hand out, and the rankings success that follows it that maintains that power. It is the choices of governments to pay greater attention to simplistic rankings and of assessment that reinforces those choices. To build a knowledge product capable of responding to today's challenges we need alternatives to and entrenched success measures of the 20th century.

## Publisher collaboration to keep COVID research moving

Apr. 27, 2020

Researchers



A cross publisher collaboration aims to ensure research related to COVID-19 is reviewed and published as quickly as possible. An Open Letter of Intent encourages academics to sign up to a reviewer database, authors to use preprint servers and calls on other publishers to action with a focus on open data and encouraging preprints.

## Business Ethics

A EUROPEAN REVIEW

May 19, 2020

EDITORIAL | [Free Access](#)

Open Access, Open Science, and Coronavirus: Mega trends with historical proportions

Dima Jamali, Ralf Barkemeyer, Jennifer Leigh, Georges Samara

First published: 19 May 2020 | <https://doi.org/10.1111/beer.12289>

## WHY OPEN ACCESS AND OPEN SCIENCE NOW?

There have been an impressive number of immediate natural science initiatives in response to COVID-19. For example, COVID-19-related Open Access data repositories have been created (Xu et al., 2020), modeling those established for research into the human genome (Yozwiak, Schaffner, & Sabeti, 2015); real-time data visualization tools are provided by various actors (e.g., John Hopkins University, 2020; Roser, Ritchie, & Ortiz-Ospina, 2020; WHO, 2020); and Nature has established an "Open Peer Review platform" (Johansson & Saderi, 2020). Closer to (our disciplinary) home, noteworthy initiatives include the "COVID-19 Insights" series operated by a number of business sustainability networks (e.g., GRONEN, 2020) or the Academy of Management Learning & Education COVID-19 "Call for Questions" proposal (AMLE, 2020).

All of these initiatives have in common that they aim to make research more inclusive and more immediately available, and thus blend into more general developments that have been labeled as Open Access and Open Science. While Open Access refers to the free availability of research outputs, typically in digital format, Open Science goes beyond that in

## THE AUSTRALIAN

Thursday, May 7, 2020 Today's Paper Most Games

All sections

HOME THE NATION WORLD BUSINESS COMMENTARY SPORT ARTS

HOME / HIGHER EDUCATION



## The COVID-19 experience shows the value of sharing information

CAMERON NEYLON

Apr. 23, 2020



# The purpose of scholarly communication

**WONKHE** ABOUT US • EVENTS • LATEST • JOBS • SUBSCRIPTION • SUS •      
Apr. 22, 2020

**The purpose of publications  
in a pandemic and beyond**

The virus is reminding us that the purpose of scholarly communication is not to allocate credit for career advancement, and neither is it to keep publishers afloat. Scholarly communication is about, well, scholars communicating with each other, to share insights for the benefit of humanity. And whilst we've heard all this before, in a time of crisis we realise afresh that this isn't just rhetoric, this is reality.

the coffin will be closed?!" If we've created a generation of scholars who are just in it for the glory of papers in glamorous journals, and not to do good research that changes the world a little bit, then we really are in trouble.

So please UKRI, when you come to make your difficult policy decisions about open access, please put front and centre at every stage a very simple question: "Will this help scholars communicate more effectively and do better research?". Everything else is a distraction. Progress has been impeded by two butts for twenty years. It's time to focus.

No butts.

OPEN  
SCIENCE  
MIGHT HELP?



# ...do we need a change in landscape?



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