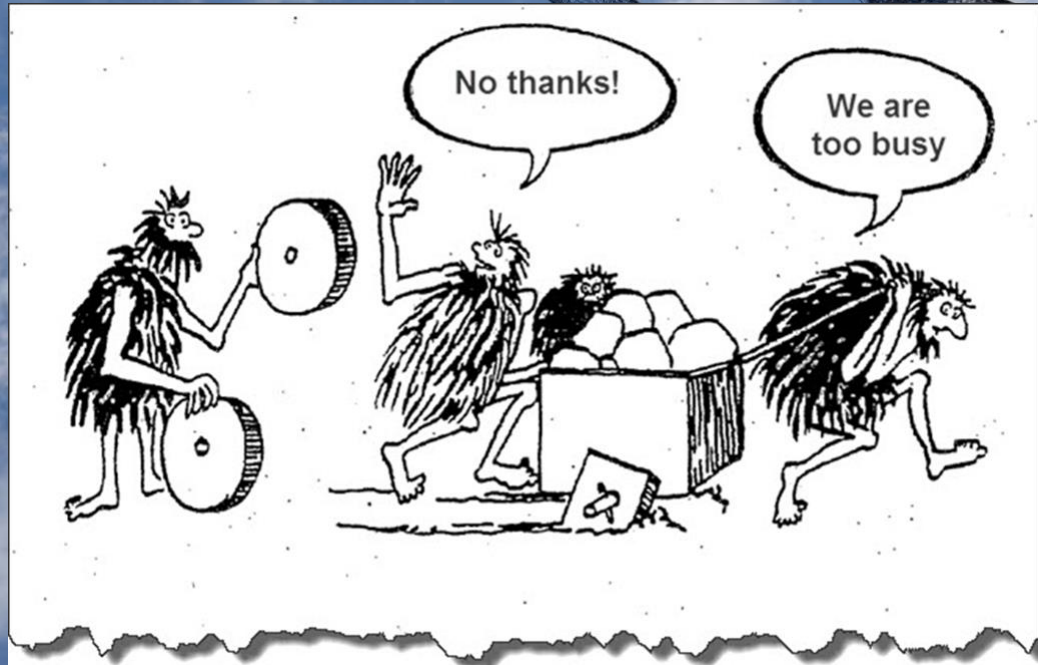


Elena Giglia
Torino, 7 novembre 2018



Perché serve la Open Science



This work is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/). Photos are mine, available for reuse on Flickr, <https://www.flickr.com/photos/eg65/albums/>



...il migliore esempio di Open Science?





Qualcosa da portare via

...se non si capisce il **valore trasformativo** della Open Science, la si vede solo come **ennesimo obbligo burocratico**

Open Access/Open Science è un'**opportunità**, non una minaccia



Jon Tennant
@Protohedhog

Following

My first talk of the year! Message is going to be that the opposite of 'open science' isn't 'closed science' - it's bad science.

...il contrario di Open Science è «**Bad Science**», non «Closed Science»

Open Science e **Open Innovation** hanno un legame stretto

... **SI PUÒ FARE** anche insieme a VQR, ASN...

Three golden retriever puppies are sitting on a red brick floor. The puppy on the left is looking directly at the camera. The puppy in the center is looking slightly to the right. The puppy on the right is looking towards the camera. All three puppies have light-colored fur and dark eyes.

...occhi nuovi

...proviamo per oggi a vedere la ricerca e la comunicazione scientifica in modo diverso...

...e a cercare di cogliere le vere opportunità della Open Science, che NON è un ennesimo fardello amministrativo...

Due domande



PERCHÉ FATE RICERCA?

Comunicazione scientifica è ...

Accesso

CONSERVAZIONE

GESTIONE DEI
DIRITTI
(autori, lettori,
editori)

Produzione

Economia
(e profitti)

Costi
(reali e di mercato – «anelastico»)

Tecnologia

Nuovi modelli
(e loro sostenibilità)

Canali
(monografie, riviste...)

VALUTAZIONE
DELLA RICERCA

Il meccanismo nelle riviste



Submission

Peer review

Acceptance/
rejection

Publication

non c'è compenso
economico

...ritorno
atteso:
reputazione,
citazioni

Comunicazione scientifica oggi, ovvero...



... paghiamo gli editori commerciali perché mettano sotto chiave il nostro contenuto...

...i costi

Il paradosso

2.100.000

1. stipendio

Buranyi, June 2017

The long read

Is the staggeringly profitable business of scientific publishing bad for science?

It is an industry like no other, with profit margins to rival Google - and it was created by one of Britain's most notorious tycoons: Robert Maxwell. By Stephen Buranyi

tagli ai budget=
minore possibilità
di leggere
di essere letti

... nell'era del web in cui
tutto è disponibile...



Richard Menke

@mnkrchrd

Sept. 21, 2018

Segui

„The 2019 serials marketplace continues to see steady annual publisher price increases with no indicators this will change.”

EBSCO @EBSCO

EBSCO has released the Serials Price Projection Report for 2019: bit.ly/SS92018
#libraries #academics #journals

Profit	Company	Industry
		A. Holcombe, Aug. 2018
10%	BMW	automobiles
23%	Rio Tinto	mining
25%	Google	search
29%	Apple	premium computing
35%	Springer	scholarly publishing
37%	Elsevier	scholarly publishing

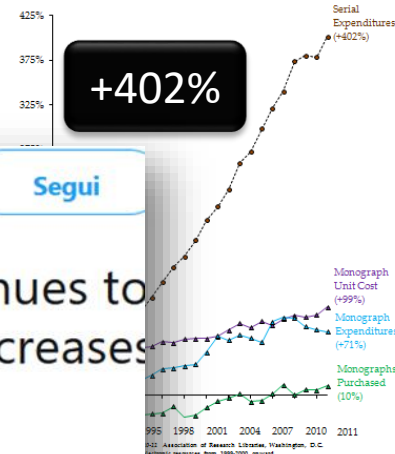
It has,
currer
subm

**The
Economist**

ood bash. The
ther people's work,
thing by third parties
in a process called peer review, has been immensely
profitable. Elsevier, a Dutch firm that is the world's biggest
journal publisher, had a margin last year of 38% on revenues
(\$3.2 billion). Springer, a German firm that is the
ggest journal publisher, made 36% on sales of
1 billion) in 2011 (the most recent year for which
available). Such firms are

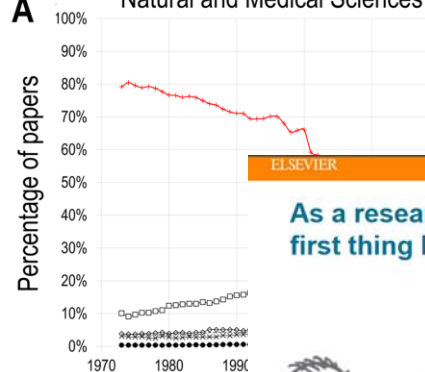
Elsevier: +38%

Graph 2
Monograph and Serial Costs
in ARL Libraries, 1986-2011*



Free for all, 4 may 2013

A Natural and Medical Sciences



Social Sciences and Humanities



The Oligopoly of Academic Publishers in the Digital Era

Vincent Larivière, Stefanie Haustein, Philippe Mongeon

Published: June 10, 2015 • <https://doi.org/10.1371/journal.pone.0127502>

As a researcher, when I wake up in the morning the first thing I think of is

A) "I just love to write more papers about my research"

B) "I just thought of a new way to filter my data that might actually lead to a result that makes more sense"

STM : 50%

SS: 70%

HUM: 20%

B

Percentage of journals

19

C

Percentage of citations

19

19

19

19

19

What c

W. Haak, I

□ Reed-Elsevier ◇ Wiley-Blackwell ✕ Ame
-- Springer ● Taylor & Francis △ Sagi

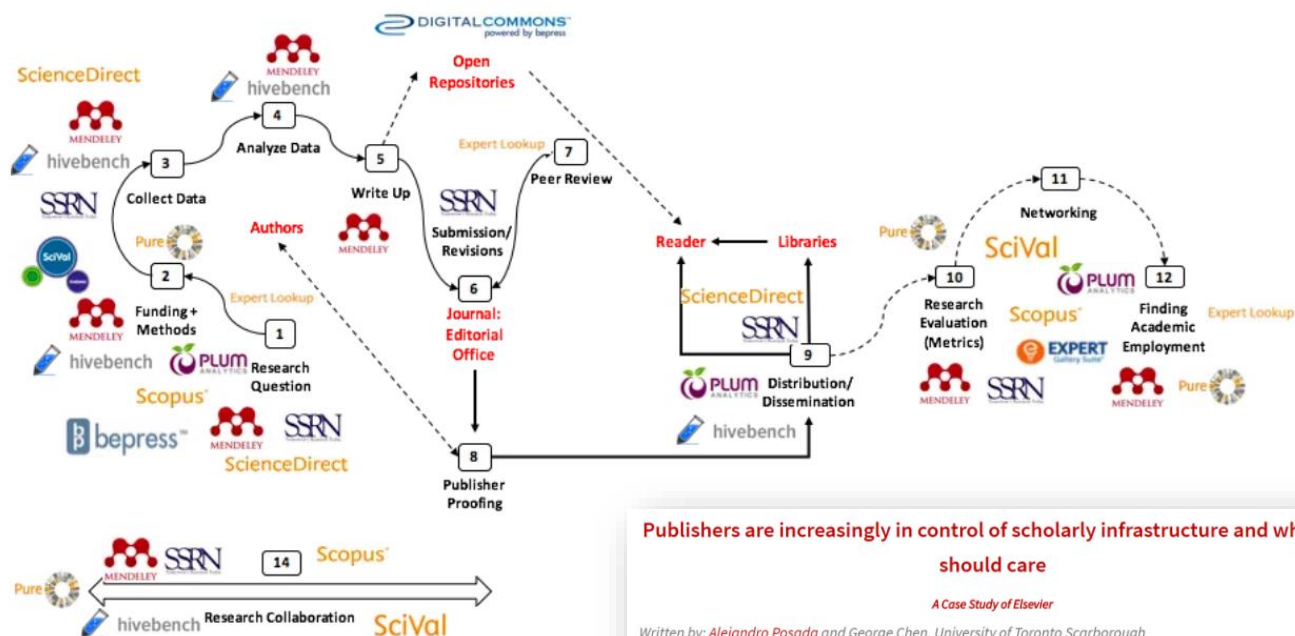
OR

The Research Process

The Academic Knowledge Production Process

The Publishing Process

The Research Evaluation Process



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

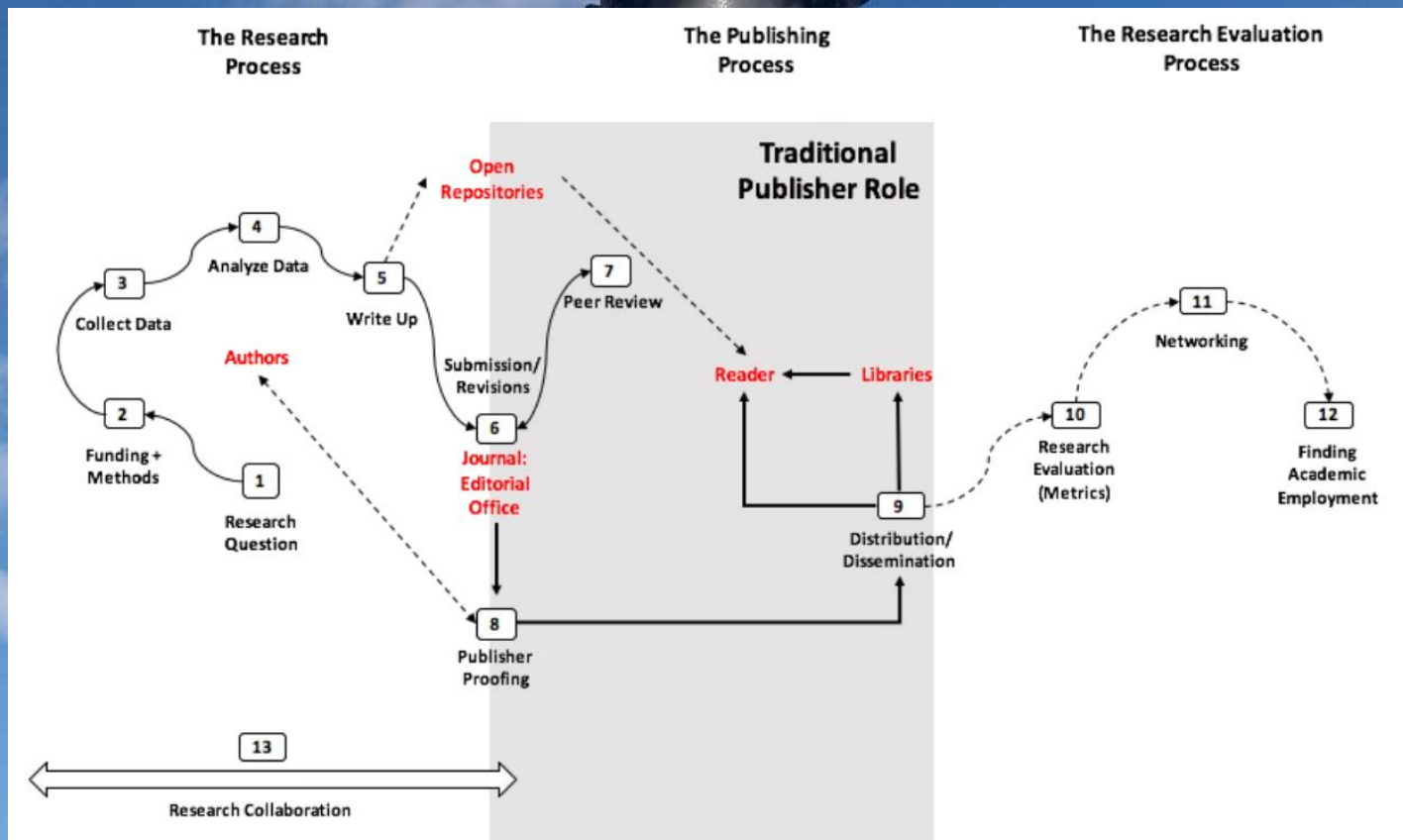
A Case Study of Elsevier

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

Published on September 20th 2017

Sept. 2017

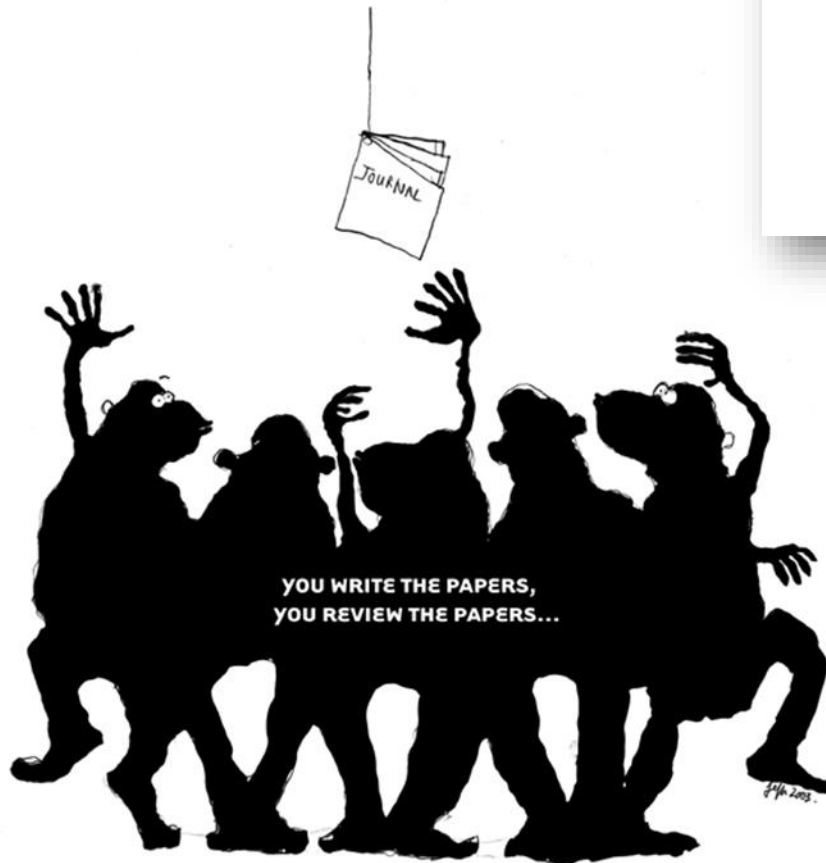
...una parentesi su Elsevier



... efficacia?

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.
Jon Tennant, Open Science: just science done right, Sept. 2018



WHY SHOULD YOU PAY TO READ THEM ?





... comunicazione scientifica,
oggi...



Peter Suber
@petersuber

May 13, 2018

Following

The Taylor & Francis journal _Medical Teacher_ just published a 5-paragraph (1-page) comment on another article.

doi.org/10.1080/014215...

For 24 hrs of access to the comment, T&F charges \$54. For 30 days of access to the issue in which the comment appears, it charges \$526.

Traduci il Tweet

Respon



Jon Tennant
@Protohedgehog

Following

Researchers. Do you want your work to be read by other people? Do you honestly think that sticking a \$40 paywall in front of each paper is the best way to achieve this? There are dozens of choices available to you that don't cost money or your career. Learn them. Use them.

Traduci il Tweet

17:03 - 15 apr 2018 da Sukawati, Indonesia

<https://twitter.com/Protohedgehog/status/98553413358034534>

44 Retweet 96 Mi piace

We spend 1/3 of the total global research budget (~£59/175bn) on communicating results that people cannot access.



...ers for young researchers, 7 Sept 201

China & SE Asia

RoW

The Oligopoly of Academic Publishers in the Digital Era

Vincent Larivière, Stefanie Haustein, Philippe Mongeon

Published: June 10, 2015 • <https://doi.org/10.1371/journal.pone.0127502>

Article

Authors

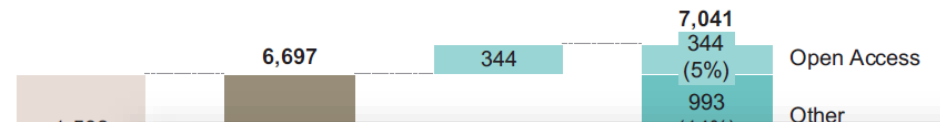
Metrics

Comments

Related Co

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0127502>

the global spending on academic and scientific content in 2016 by region and



Jon Tennant
@Protohedgehog

Following

The smartest business model ever. Have all of your products and services performed for free by researchers, and then sell it back to them with an unholy markup. Try describing the model to a non-researcher, and they mock us for falling for it.

<https://twitter.com/Protohedgehog/status/9854393188974>

Steven Salzberg @StevenSalzberg1

Nature and other Springer journals make all of their money from free labor provided by scientists, who write all the papers and do all of the peer review. And now they are cashing in: "Springer Nature aims to raise 1.2 billion euros in new money in IPO" reut.rs/2qqhp93

... paghiamo gli editori commerciali perché mettano sotto chiave il nostro contenuto...

... se no, non esisterebbe Sci-Hub



Science Home News

Who's downloading pirated papers?

EVERYONE

In rich and poor countries, researchers turn to the Sci-Hub website.

<http://www.sciencemag.org/news/2016/04/whos-downloading-p>

Scientific publishing is a rip-off. We fund the research - it should be free

George Monbiot



outrageous legacy. In the meantime, as a matter of principle, do not pay a penny to read an academic article. The ethical choice is to read the stolen material published by Sci-Hub.

Higher Education Network

Scientists should be solving problems, not struggling to access journals

It takes an average of 15 clicks for a researcher to find and access a journal article. This time could be much better spent

Benjamin Kaube

Mon 21 May 2018 07:30 BST

May 21, 2018



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 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

[come ottenere il pdf se non avete abbonamento]

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://chrome.google.com/webstore/detail/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.org/>



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, NWO, NWO and a number of research institutes, datasets from some data archives as well as descriptions of research projects, researchers and research institutes.
<https://nl.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 ovviamente funziona SOLO se l'autore ha depositato

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

...funziona?

...tempi di pubblicazione? 9-18 mesi

nature International weekly journal of science

Home | News & Comment | Research | Careers & Jobs | Current Issue | Archive | Author Centre

Bjork 2013

NATURE | NEWS FEATURE

1,500 scientists lift the lid on reproducibility

Survey sheds light

Monya Baker

25 May 2016 | Cor

...crisi della
riproducibilità

← Tweet

 **Jelte Wicherts**
@JelteWicherts

March 2018

Gaming the system: When in 2010 Italian universities incorporated citations in promotion decisions, self-citation rates among social scientists went up by 81-179%
sciencedirect.com/science/article...

...autocitazioni
+179%

ARTICLE INFO

Keywords:
Self-citation
Post-publication
Peer review
Science
Research
Academy of science
Frequency of science

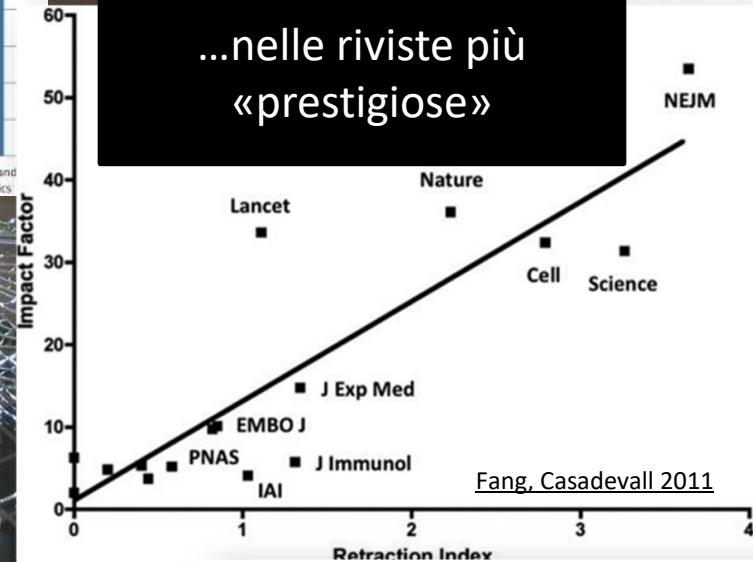
ABSTRACT

There is limited knowledge on the extent to which questionable practices, namely practices that affect factors that affect their likelihood. This article a citation, i.e. citations of one's own work to boost exploring the factors driving scientists' behaviour in self-citations. We test the hypothesis in the literature that self-citation is regulated by a rational habituation process. The sample includes 880 scientists

The Retraction Watch Leaderboard

...crescente numero di ritrattazioni
per dati falsificati o fabbricati

...nelle riviste più
«prestigiose»



Does scientific misconduct do any harm? The case of Boldt

Harvard chiede il
ritiro di 31
pubblicazioni del
noto cardiologo
Piero Anversa

Oct. 16, 2018



Foto: Brigham and Women's Hospital. Piero Anversa, M.D.

Contengono dati falsificati e/o inventati, come riferiscono la Harvard Medical School e il Brigham and Women's Hospital di Boston. Gli studi sotto accusa riguardano la possibilità – dimostrata falsa – di utilizzare le staminali per rigenerare il cuore

the real-life effects
note that some of the
tiny obscure
roads. But a new meta-
AMA today suggests



...una parentesi sulle ritrattazioni?

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

If you wanted to minimize the real-life effects of misconduct, you might note that some of the retractions we cover are in tiny obscure journals hardly anyone reads. But a meta-analysis and editorial in JAMA today



NCBI Resources How To

PubMed.gov PubMed

RETRACTED ARTICLE

See: [Retraction Notice](#)

Anesth Analg. 1996 Aug;83(2):254-61.

The effects of albumin versus hydroxyethyl starch solution on cardiorespiratory and circulatory variables in critically ill patients.

Boldt J¹, Heesen M, Müller M, Pabsdorf M, Hempelmann G.

2013

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).

In other words, there was an increased risk of circulatory failure among those given HES:

The report by Zarychanski et al highlights the important and adverse effect of scientific misconduct

97 ritrattazioni.
Se si escludono questi studi, la revisione sistematica mostra un aumentato rischio di morte e problemi ai reni

No academic post for fraudster Diederik Stapel, after all

Recently, we reported that social psychologist and renowned data faker Diederik Stapel had found himself a [new gig supporting research at](#)

Scoperto da un PhD che ha chiesto i dati originali



De Telegraaf: [Continue reading](#) →

... e la valutazione? «Osessione»

“Not only are we failing to provide the right incentives, we are actually providing perverse ones.”

As long as journal impact factors retain some role in the career development, journals should publish the distribution of their citations. The participants strongly supported the adoption of the San Francisco Declaration on Research Assessment (DORA) by public

There was a call having to rely on



ROARS

Return On Academic Research

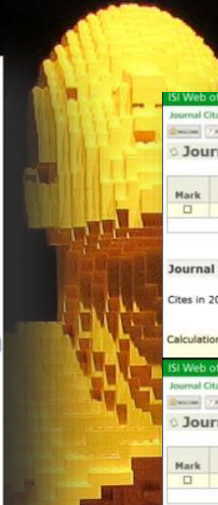
ROARS 28 marzo 2018

Impact or perish. L'ossessione per l'impatto delle pubblicazioni scientifiche genera frodi e condotte abusive

Goodhart's Law: “when a measure becomes a target, it ceases to be a good measure.”

Metrics are subject to manipulation, so we should look carefully not only at the number

is that number purports to measure “People game the system at every level and this risks the loss of valuable research in favour of fashionable research.”



ISI Web of Knowledge™
Journal Citation Reports™
Journal: CURRENT BIOLOGY

Mark	Journal Title	ISSN	Total Cites	Impact Factor	Immediacy Index	Citable Items	Cited Half-life	Citing Half-life
<input type="checkbox"/>	CURR BIOL	0960-9822	20020	7.007	2.713	341	3.5	3.7

Journal Impact Factor

Cites in 2002 to items published in: 2001 = 3314
2000 = 3917
Sum: 7231

Number of items published in: 2001 = 528
2000 = 504
Sum: 1032

Calculation: Cites to recent items / Number of recent items = 7.007

ISI Web of Knowledge™
Journal Citation Reports™
Journal: CURRENT BIOLOGY

Mark	Journal Title	ISSN	Total Cites	Impact Factor	Immediacy Index	Citable Items	Cited Half-life	Citing Half-life
<input type="checkbox"/>	CURR BIOL	0960-9822	22589	11.910	2.682	331	3.8	4.9

Journal Impact Factor

Cites in 2003 to items published in: 2001 = 3314
2000 = 3917
Sum: 7231

Number of items published in: 2001 = 528
2000 = 504
Sum: 1032

Calculation: Cites to recent items / Number of recent items = 11.910

Times Chosen in Survey

Shared Widely

Citations (2013)

Times Chosen in Survey

Most Significant

Citations (2013)

Times Chosen in Survey

Most Cited

Citations (2013)

Times Chosen in Survey

h-index

Citations (2013)

Times Chosen in Survey

Shared: Chemists

Citations (2013)

May 14, 2018



Jean-Sebastien Caux

@jscaux

Following

The prospectus for the IPO of Springer Nature

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 mag 2018

22 Retweet 28 Mi piace



<https://twitter.com/jscaux/status/992>

decidete vo
perché è un

TION

Prospectus dated April 25, 2018

SPRINGER NATURE

Prospectus

for the public offering

rch, with a High-Quality Brand Portfolio, Global Scale
ong Growth in the Open Access Publishing Market.

tant, as market participants increasingly differentiate in
to a journal's impact factor. Our open access portfolio
uch as Nature Communications, Scientific Reports and
positioning us well to command premium APCs from

Springer Prospectus Apr. 25

THE WORLD
UNIVERSITY
RANKINGS

PROFESSIONAL JOBS SUMMITS RANKINGS

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

10.2.5 Increasing Share in Revenues from

Springer Nature was one of the
by open access, which provides us addi

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.

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
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

[siamo sulla strada sbagliata]

cord injury. First, there is increasing methodology. These range from neurological diseases, the lack of contamination of neural cell lines, poor reliability of published research (participant numbers are low). published research findings are commonly low in the biomedical literature. Surprisingly then, the rate of publication is slow and problematic [3]. Second, the number of papers retracted from the peer-reviewed literature is also increasing [4]. Third, there is an over-reliance on a scientist's publication metrics (numbers, journal impact factors, citation numbers) for progression, promotion, prizes, and research grants. Indeed, gaming the metrics of science is an occupational requirement for scientists, journal staff and university administrators. Publications now contain more spin (reliance on findings which are not justified by the statistics) and more liberal use of words such as 'novel' [5]. These trends are driven by an unhealthy culture in which it can be more important to publish a result than publish a correct result [6, 7]. The trends also expose deep flaws in the current systems of peer review.

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

- metodologia non solida
- risultati falsi, peer review debole
- enfasi sulla pretesa «novità»
- metriche onnipotenti, per cui truffarle è obbligo
- «PUBBLICARE UN RISULTATO»
INVECE DI UN «RISULTATO
CORRETTO»

...un abbraccio mortale



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



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





... cambiare panorama?

...un po' di ispirazione...



The best thing about **Internet** is that it's **open**. In every field **it let us share and innovate**.

In science, **OPENNESS IS ESSENTIAL**.

Open science doesn't mean ignoring economic reality.

Of course **we need business models to be sustainable**. But that **doesn't mean we have to carry on doing things the way they have always been done**.

So, wherever you sit in the value chain, whether you're a researcher or an investor or a policy maker, my message is clear:

let's invest in collaborative tools that let us progress...

Let's tear down the walls that keep learning sealed off.

And let's make science open.



Open Science

Open Definition

"Open data and content can be freely used, modified, and shared by anyone for any purpose"

<http://opendefinition.org/>



Jeff Rouder

@JeffRouder

What is Open Science? It is endeavoring to preserve the rights of others to reach independent conclusions about your data and work.

Traduci il Tweet

21:47 - 5 dic

Open Science Depends on Open Minds



Neelie Kroes ✓

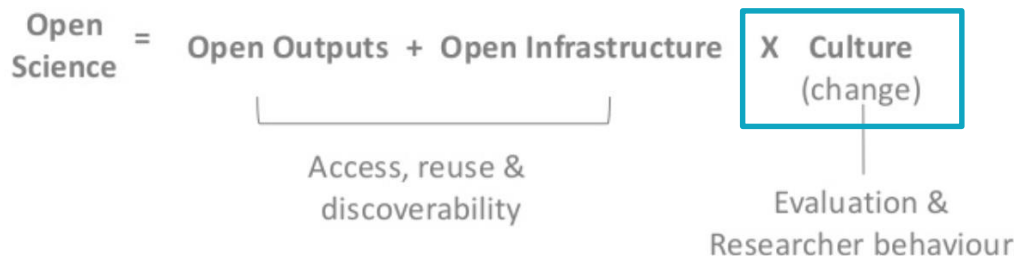


Iscriviti

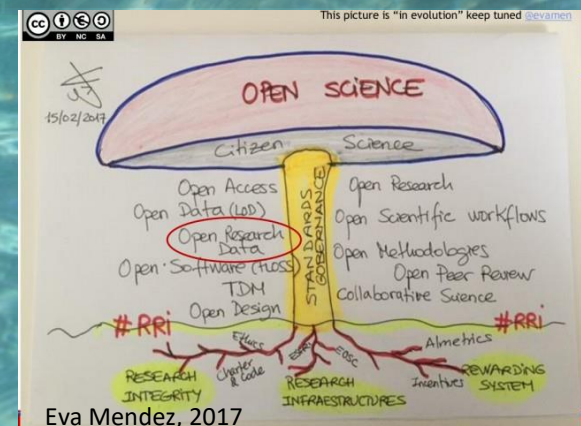
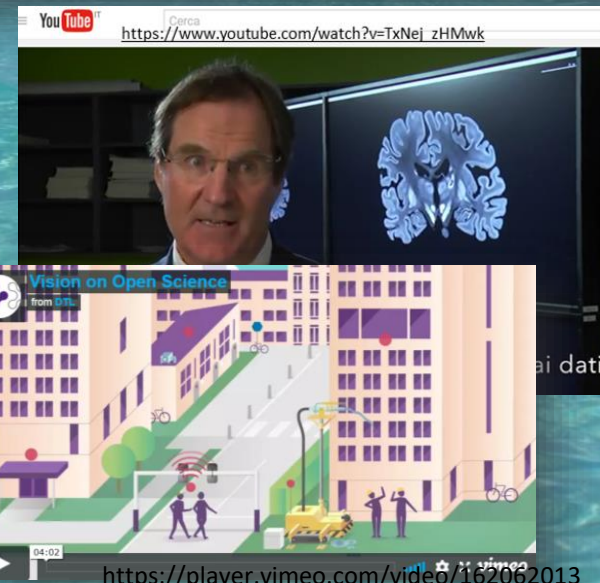
851

Open Science @openscience-son
"Being open and transparent is an ongoing practice and not a check box at the end." - @biocrusoe #openscience

13 8

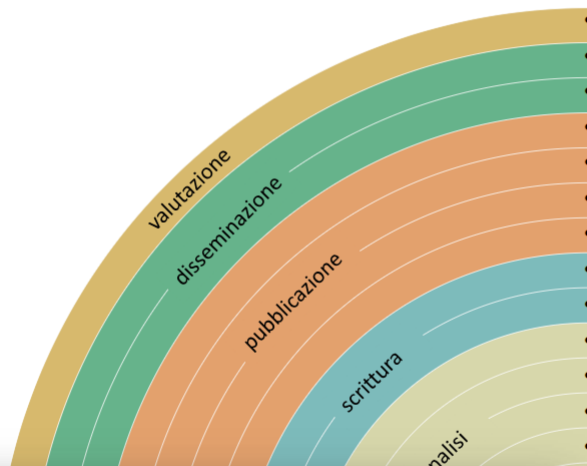


C. Mac Callum, UKSG, April 2018



Open science un passo per volta...

Come puoi rendere Open ogni passo della ricerca...



- aggiungendo misure di impatto alternative, es. altmetrics
- comunicando sui social media, es. Twitter
- condividendo poster e presentazioni, es. su FigShare
- utilizzando licenze aperte, es. Creative Commons BY
- depositando in archivi o pubblicando su riviste Open
- provando la open peer review, es. PubPeer o F1000
- condividendo preprints, es. su OSF, arXiv o bioRxiv
- con formati leggibili dalle macchine, es. Jupyter o CoCalc
- con la scrittura collaborativa, es. Overleaf o Authorea
- condividendo protocolli e workflow, es. su Protocols.io
- condividendo note di laboratorio, es. OpenNotebookScience
- condividendo software, es. su GitHub con licenza GNU/MIT
- condividendo i dati, es. su Dryad, Zenodo o Dataverse
- pre-registando esperimenti, es. su OSF o AsPredicted
- commentando pagine web, es. su Hypothes.is o Pund.it
- usando bibliografie condivise, es. su Zotero
- condividendo progetti di ricerca, es. su RIO Journal



Jon Tennant ✓
@Protohedgehog

Following

To support 'open science' you don't have to agree with or practice the whole messy bulk of it. Share your papers openly; version your code; cite data sets; use open source software; blog. **Small steps can make a big difference.**

Traduci dalla lingua originale: inglese

18:09 - 27 feb 2018 da Praga, Repubblica Ceca

[DOI: 10.5281/zenodo.1147025](https://doi.org/10.5281/zenodo.1147025)

Traduzione: Elena Giglia



[DOI: 10.5281/zenodo.1195648](https://doi.org/10.5281/zenodo.1195648)

Open Science

Open Science principles

Socio-cultural

- Inclusivity
- Equality
- Accountability
- Freedom
- Fairness



Technical

- Rigour
- Transparency
- Reproducibility
- FAIR
- TOP



Jon Tennant ✓
@Protohedgehog

Following

What is the difference between open science and good science? If research papers are inaccessible, with no code or data, cherry picked results, inability to even attempt to reproduce, is that really even science? Science without openness is more anecdote and faith than science.

Tennant Sept.2018

**OPEN SCIENCE:
JUST
SCIENCE
DONE RIGHT**

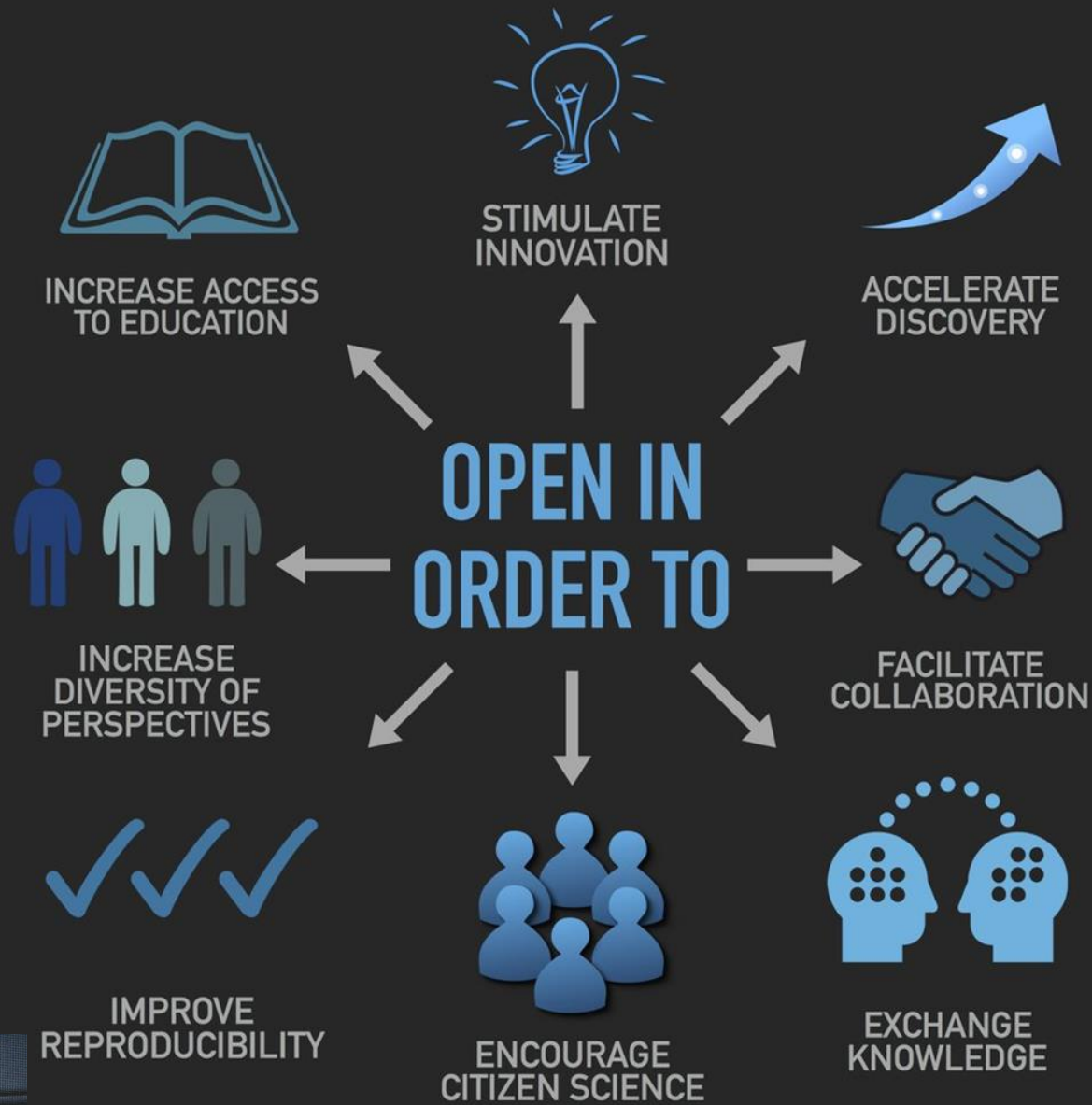


Jon Tennant ✓
@Protohedgehog

Following

My first talk of the year! Message is going to be that the opposite of 'open science' isn't 'closed science' - it's bad science.

[una chiamata



whyopenresearch.org

#OAweek

... «core strategy»...

HORIZON 2020

Open Science (Open A



Carlos Moedas ✓
@Moedas

Segui

2/4 "Open as possible, as closed as necessary" is the new principle for all **#data** from publicly funded **#research** in Europe **#openaccess**

RETWEET

76

MI PIACE

32



Iryna Kuchma @irynakuchma · 18 nov 2015

#Openscience is about making sure that science serves innovation & growth –
Günther Oettinger & Carlos Moedas



Wilma van Wezenbeek
@wvanwezenbeek

Following

#osc2018 @BurgelmanJean "2018 is the year of no return in **#openscience**"

Traduci il Tweet

10:32 - 13 mar 2018

Newsroom

... shift towards making research findings available free of charge
... so-called 'Open access', has been **a core strategy** in the
... Commission to improve knowledge circulation and thus
... It is illustrated in particular by the general principle for open
... scientific publications in Horizon 2020 and the pilot for research



RESEARCH & INNOVATION
Open Science

European Commission > Research & Innovation > Open Science

Home

Open Access

European Open Science Cloud

Open Science Policy Platform

Groups

Open Science

European Commission Open Research Publishing Platform

The Commission proposes to fund a European Commission Open Research Publishing

TESTI E DATI OPEN
BY DEFAULT
(come fare)



The EU Framework Programme
for Research and Innovation

HORIZON 2020

Open Science in Europa

- Rewards and Incentives
- Research Indicators and Next-Generation Metrics
- Future of Scholarly Communication
- European Open Science Cloud
- FAIR Data
- Research Integrity
- Skills and Education
- Citizen Science

Open Access
entro 2020

Integrated advice of the Open Science Policy Platform on
8 prioritised Open Science ambitions May 29, 2018



Providing researchers with the
skills and competencies they
need to practise Open Science

Open Science Skills Working Group Report

Report, Sept. 2017

Evaluation of Research
Careers fully acknowledging
Open Science Practices

Rewards, incentives and/or recognition for researchers
practicing Open Science

Report on OS and careers, July 2017

Removing barriers to open science

1. Change assessment, evaluation and reward systems in science 2
2. Facilitate text and data mining of content 1
3. Improve insight into IPR and issues such as privacy 0
4. Create transparency on the costs and conditions of academic communication 6

Developing research infrastructures

5. Introduce FAIR and secure data principles 16
6. Set up common e-infrastructures 18

Fostering and creating incentives for open science

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8. Stimulate new publishing models for knowledge transfer 23
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Mainstreaming and further promoting open science policies

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Stimulating and embedding open science in science and society

11. Involve researchers and new users in open science 32
12. Encourage stakeholders to share expertise and information on open science 34

Amsterdam Call for Action
on Open Science

Politiche nazionali e
di ogni ateneo su
Open Access e Open
Data

COMMISSION RECOMMENDATION

of 25.4.2017

on access to and preservation of

PlanS - cOAlitionS

cOAlitionS
Making
Open Access
a reality
by 2020

A DECLARATION OF COMMITMENT
BY PUBLIC RESEARCH FUNDERS

<http://scieur.org/coalition-s>

Plan S Sept. 4, 2018

**Accelerating the transition to
full and immediate Open Access to
scientific publications**



Open access to scientific publications
must become a reality by 2020 –
Robert-Jan Smits
March 23, 2018

IN ADDITION:

The key principle is as follows:

"After 1 January 2020 scientific publication
by national and European research coun-
Access Journals or on compliant Open Acc

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In case such high quality Open Access journals or platforms do not yet exist, the Funders will, in a coordinated way, provide incentives to establish and support them when appropriate; support will also be provided for Open Access infrastructures where necessary;

Where applicable, Open Access publication fees are covered by the Funders or universities, not by individual researchers; it is acknowledged that all scientists should be able to publish their work Open Access even if their institutions have limited means;

- When Open Access publication fees are applied, their funding is standardised and capped (across Europe);
- The Funders will ask universities, research organisations, and libraries to align their policies and strategies, notably to ensure transparency;
- The above principles shall apply to all types of scholarly publications, but it is understood that the timeline to achieve Open Access for monographs and books may be longer than 1 January 2020;
- The importance of open archives and repositories for hosting research outputs is acknowledged because of their long-term archiving function and their potential for editorial innovation;
- The 'hybrid' model of publishing is not compliant with the above principles;
- The Funders will monitor compliance and sanction non-compliance;

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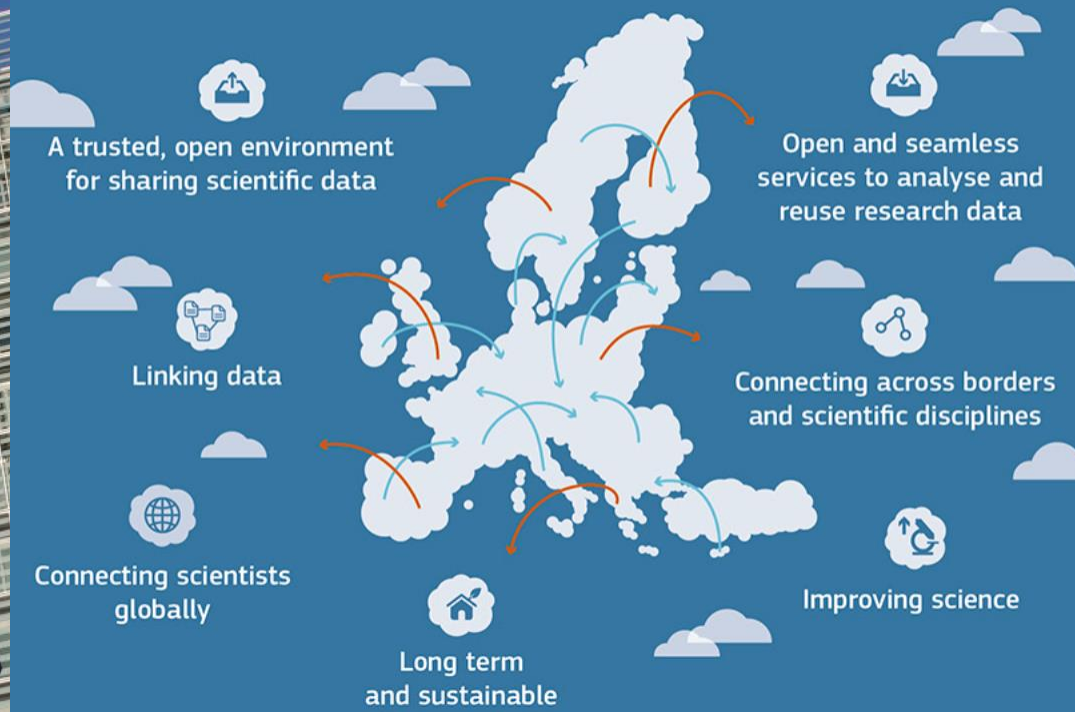
- REAZIONI
- DIBATTITO

EOSC – European Open Science

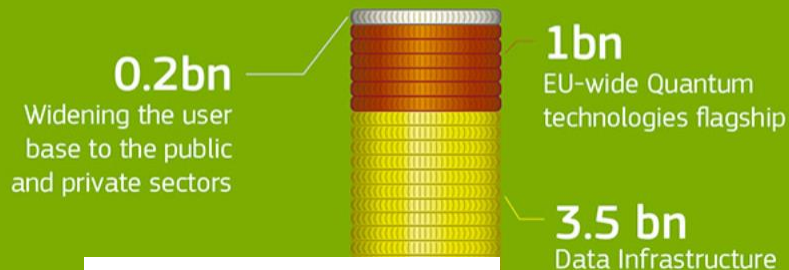


- necessario cambiamento culturale e formazione
- NESSUNA DISCIPLINA, NESSUNA ISTITUZIONE E NESSUN PAESE DEVE ESSERE LASCIATO INDIETRO
- 500.000 data stewards

BRINGING TOGETHER CURRENT AND FUTURE DATA INFRASTRUCTURES



THE EUROPEAN DATA INFRASTRUCTURE.



23 novembre 2018, Vienna

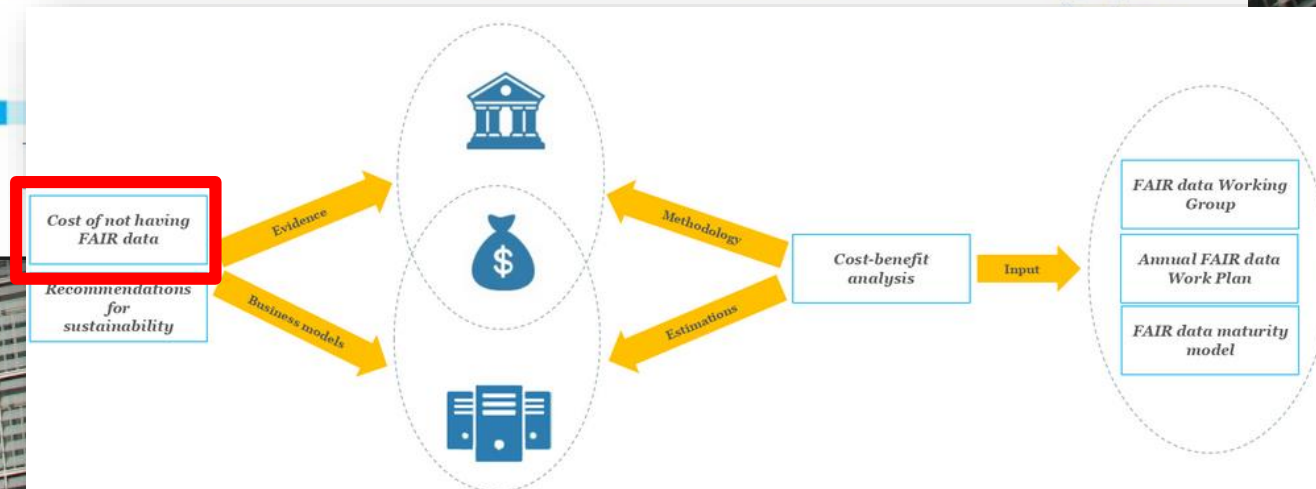
EOSC state of play

EOSC – European Open Science Cloud

EC proposal for FAIR building blocks



Slide courtesy of Jean Claude Burgelman





...servono testi... quindi Open Access



SI PUBBLICA IN UNA RIVISTA OPEN ACCESS
[senza abbonamento, 26% chiede spese pubblicazione]

Berlin Declaration

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Apply News About For Publishers API

<https://doaj.org/>



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modern art on the Rembrandtplein square

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Long-term preservation	Yes	No	No
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and Notaries

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Dr. Gerd Thoenen, M.
f, notary
y, inheritance law
H, LL.M.
ten-Kieffer
en
ert
m, LL.M.
Ho - EU-Attorney
ber-Stadt

ResearchGate GmbH

To
Dr
Ho
An
Ja
Inv
Be



ResearchGate vs. publishers

ResearchGate vs. Publishers: The Saga Continues...

Last updated May 8, 2018

May 2018

NEWS

ResearchGate bows to pressure from publishers on copyrighted material



BY REBECCA TRAGER | 15 NOVEMBER 2017

Networking site has moved 1.7 million journal articles from five major publishers so they are no longer accessible to the public [Nov. 15, 2017](#)

<http://osc.universityofcalifornia.edu/2015/12/a-social-networking-site-is-not-an-open-access-repository/>

Green road - deposito

il 70% degli editori internazionali lo consente
(Elsevier, Wiley, Springer...), elenco:



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[=mesi in cui articolo pur depositato non è visibile]

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<http://www.oa.unito.it/new/leggere-bene-le-indicazioni-di-sherpa-romeo/>

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l'editore ha voce in capitolo
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Arsenate toxicity on the apices of *Pisum sativum* L. seedling roots: Effects on mitotic activity, chromatin integrity and microtubules

Stefania Dho, Wanda Camusso, Marco Mucciarelli, Anna Fusconi

Abstract

Arsenic (As) is one of the most toxic plant growth. Despite the growing this element on meristem activity study, short-term experiments with whether plant growth impairment was studied by evaluating apical fragmentation and microtubule organization that arsenate, at the lowest concentrations parameters, whilst the other concentrations mitotic and labelling index (after bromo-deoxyuridine administration) (through immunofluorescence). The metaphases increased, as did the mitotic spindles, which closely resemble those induced by colchicine. Chromosome breaks and anaphase bridges were virtually absent. These data point to a poor clastogenic activity of As and implicate that microtubules are one of the main targets of As.

Keywords

Pea; Arsenic; Apical meristems; Aberrations; Immunofluorescence; TUNEL test

1. Introduction

Arsenic (As) is a toxic element, frequently found in soils and water. A main natural source of As is the erosion of mother rock, even though a consistent part of As environmental pollution comes from human activities (Meharg and Hartley-Whitaker, 2002 and Patra et al., 2004). The As in unpolluted fresh water is usually in the range 1–10 µg/L. According to EPA and WHO, the maximum permissible As concentration in drinking water is 50 µg/L (Mandal and Suzuki, 2002).

Arsenic is a well-established human carcinogen (Qin et al., 2008a) and has been shown to be genotoxic in a variety of *in vitro* studies (Hughes, 2002). In plants, it severely affects growth and development, and its toxicity is strongly dependent on the concentration, exposure time and physiological state of the plant (Singh et al., 2007). However, plants vary in their sensitivity to As, and a wide range of species have been identified in As-contaminated soils (Meharg and Hartley-Whitaker, 2002). Besides, hyperaccumulators such as *Pteris vittata*, which tolerate high internal As content, may also use this As to defence themselves against herbivore attack (Mathews et al., 2009).

Higher plants take up As mainly as arsenate (V), the dominant form of phytoavailable As in aerobic soils. According to Meharg and Hartley-Whitaker (2002), As competes with phosphate for plant phosphate transporters. Upon absorption, most arsenate is rapidly reduced to arsenite (III), due to an arsenate reductase activity (Xu et al., 2007), hence, the arsenate cytoplasmic concentration is generally not high enough to exert toxicity (Meharg and Hartley-Whitaker, 2002). Both As species interfere with various metabolic pathways: arsenate, as an analogous chemical to phosphate, may replace phosphate in the ATP and in various



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Arsenate toxicity on the apices of *Pisum sativum* L. seedling roots: Effects on mitotic activity, chromatin integrity and microtubules

Stefania Dho^a, Wanda Camusso^a, Marco Mucciarelli^b, Anna Fusconi^{a,*}

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Immunofluorescence
TUNEL test

ABSTRACT

Arsenic (As) is one of the most toxic pollutants in the environment, where it severely affects both animal and plant growth. Despite the growing literature data on As effects on plant development, alterations induced by this element on meristem activity of the root have not been explored to any great extent. In the present study, short-term experiments with arsenate have been conducted on *Pisum sativum* L. seedlings to assess whether plant growth impairment is due to DNA/chromosome or mitotic microtubule damages. Root growth was studied by evaluating apical meristem activity and cell elongation. Mitotic aberrations, DNA fragmentation and microtubule organization of the apical cells were also analyzed. The results have shown that arsenate, at the lowest concentration (0.25 µM), slightly increases root growth and some related parameters, whilst the other concentrations have a dose-dependent negative effect on root growth, on the mitotic and labelling index (after bromo-deoxyuridine administration), and on the mitotic arrays of microtubule (through immunofluorescence). The main effects on mitosis occurred for 25 µM As. The percentage of metaphases increased, as did the irregular metaphases and c-mitoses. This was related to alterations in the mitotic spindles, which closely resemble those induced by colchicine. Chromosome breaks and anaphase bridges were virtually absent, whilst DNA fragmentation only increased from 25 µM arsenate onwards. These data point to a poor clastogenic activity of As and implicate that microtubules are one of the main targets of As.

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1. Introduction

Arsenic (As) is a toxic element, frequently found in soils and water. A main natural source of As is the erosion of mother rock, even though a consistent part of As environmental pollution comes from human activities (Meharg and Hartley-Whitaker, 2002; Patra et al., 2004). The As in unpolluted fresh water is usually in the range 1–10 µg/L. According to EPA and WHO, the maximum permissible As concentration in drinking water is 50 µg/L (Mandal and Suzuki, 2002).

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Exposure to high concentrations of As induces the production of reactive oxygen species (ROS) (Singh et al., 2007; Wang et al., 2007; Lin et al., 2008; Shri et al., 2009) and the conversion of arsenate to arsenite is regarded as one of the causes of ROS generation (Wang et al., 2007). Oxidative stress induced by As can damage cells, mainly through lipid peroxidation of membranes (Singh et al., 2007) and DNA fragmentation, as has been demonstrated in leaves and roots

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E-mail address: anna.fusconi@unito.it (A. Fusconi).

In cosa le riviste Open Access sono diverse?

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... e non solo articoli...

PREPRINT E OPEN NOTEBOOK

PLOS COMPUTATIONAL BIOLOGY May 2017 Browse Publish About Search

OPEN ACCESS EDITORIAL

Ten simple rules to consider regarding preprint submission

Philip E. Bourne, Jessica K. Polka, Ronald D. Vale, Robert Kilow

Published: May 4, 2017 • <https://doi.org/10.1371/journal.pcbi>

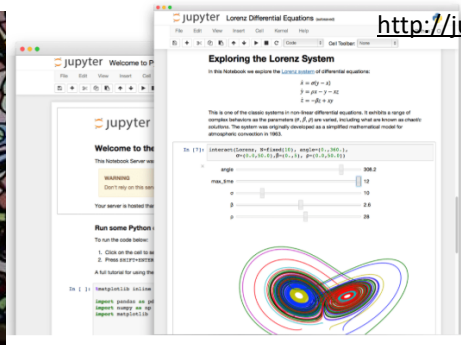
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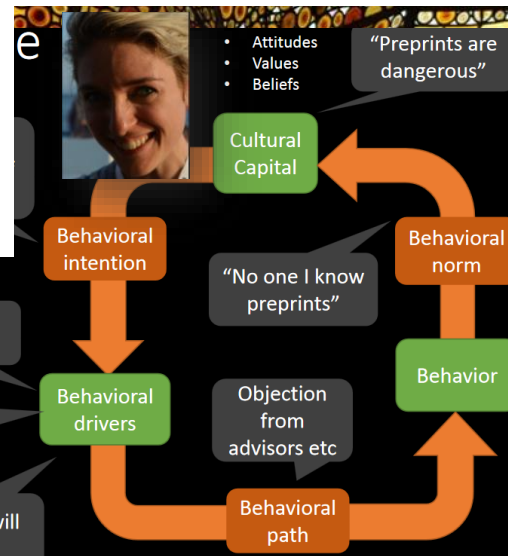
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- priorità scientifica
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post submission



J. Polka,

, June 2017

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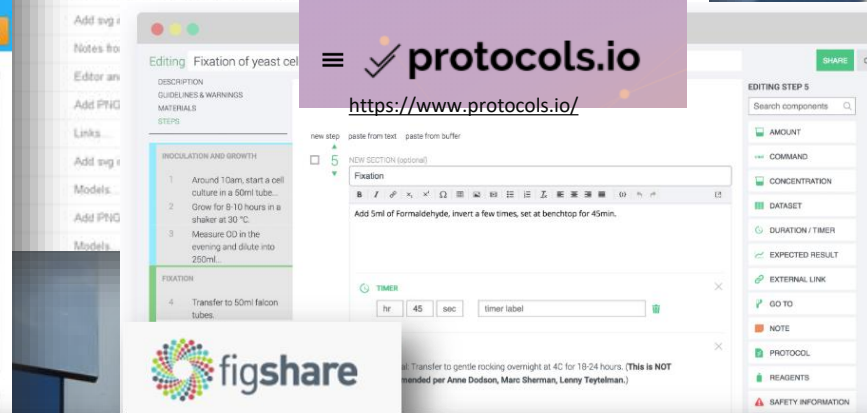
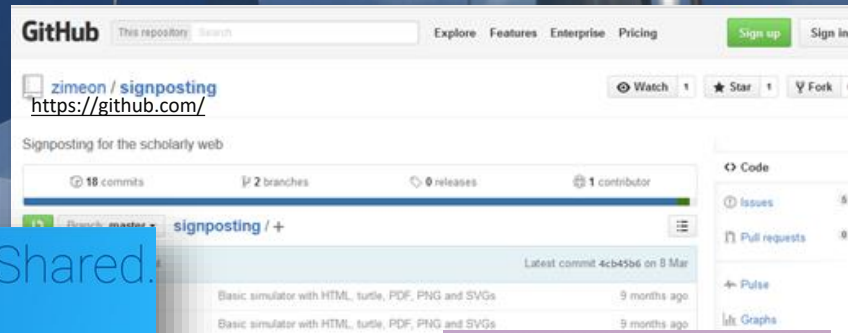
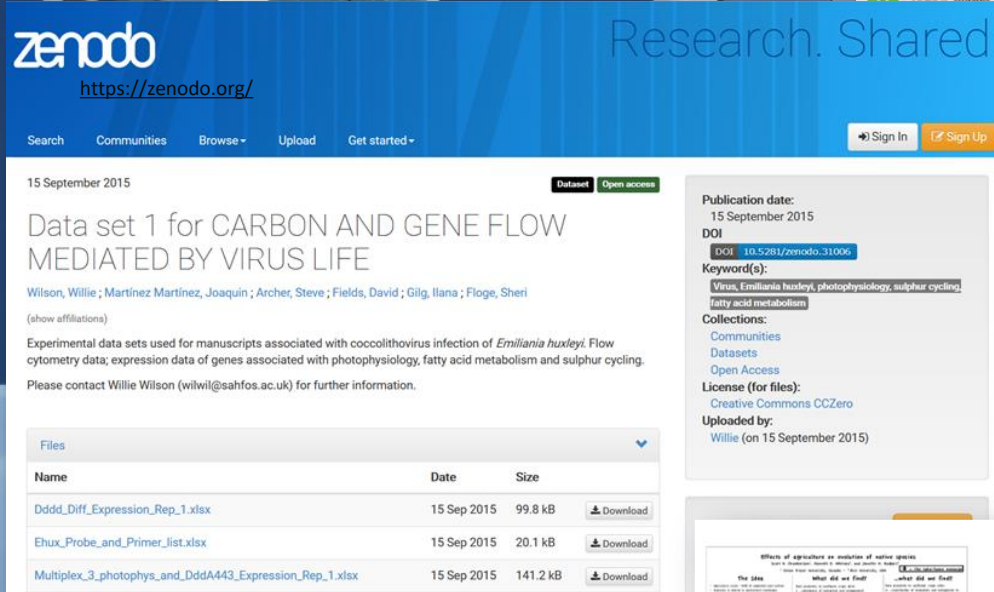
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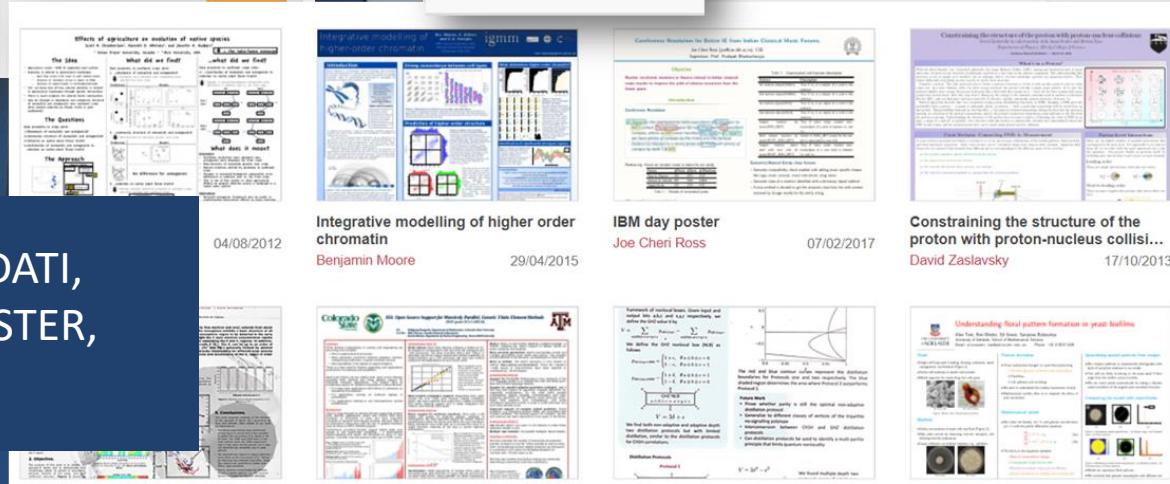
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Rule 10: Preprints—one shoe does not fit all

...e non solo testi...



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INTERI PROTOCOLLI



...servono i dati

DATA AB INITIO

GETTING RESEARCH DATA RIGHT, FROM THE START

K.Birney, 2015

and think, "surely I've covered this one my blog" up when I wrote [December's Exit Strategy post](#).

and, as you don't want to be stuck with it. Promissory, out-of-date, little-used formats



Il debito pubblico deprime la crescita? Il clamoroso errore di Carmen Reinhart e Kenneth Rogoff

2013

Publicato da keynesblog il 18 aprile 2013 in consigliati, Economia, ibt, Teoria economica



1. l'esclusione selettiva di alcune osservazioni nei dati;
2. uno schema di bilanciamento dei dati non convenzionale;
3. un errore di codice nel foglio di calcolo originale utilizzato per selezionare i dati.

Does High Public Debt Consistently Stifle Economic Growth? A Critique of Reinhart and Rogoff

Thomas Herndon*

Michael Ash

Robert Pollin

April 15, 2013

Herndon, 2013

JEL CODES: E60, E62, E65

Abstract

We replicate Reinhart and Rogoff (2010a and 2010b) and find that coding errors, selective exclusion of available data, and unconventional weighting of summary statistics lead to serious errors that inaccurately represent the relationship between public debt and GDP growth among 20 advanced economies in the post-war period. Our finding is that when properly calculated, the average real GDP growth rate for countries carrying a public-debt-to-GDP ratio of over 90 percent is actually 2.2 percent, not -0.1 percent as published in Reinhart and Rogoff. That is, contrary to RR, average GDP growth at public debt/GDP ratios over 90 percent is not dramatically different than when debt/GDP ratios are lower.

We also show how the relationship between public debt and GDP growth varies significantly by time period and country. Overall, the evidence we review contradicts Reinhart and Rogoff's claim to have identified an important stylized fact, that public debt loads greater than 90 percent of GDP consistently reduce GDP growth.

...il backup è quella cosa che andava fatta prima...

... i dati sono fragili

Scientists losing data at a rapid rate

Decline can mean 80% of data are unavailable after 20 years.

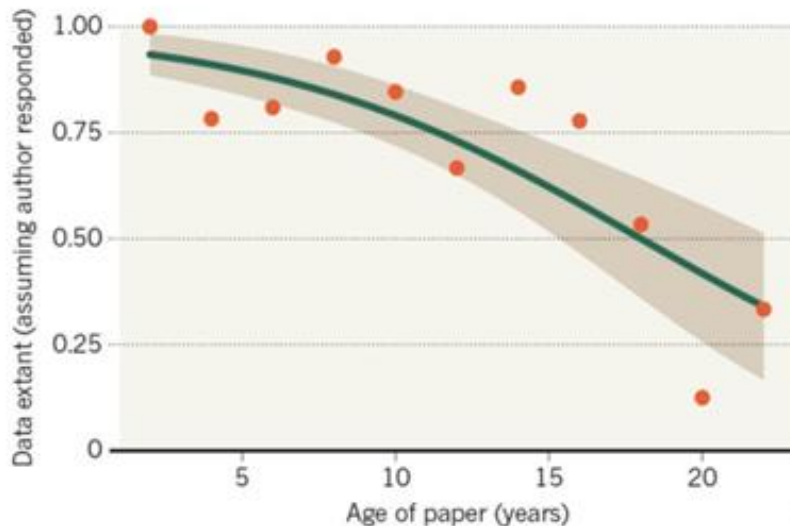
Elizabeth Gibney & Richard Van Noorden

19 December 2013

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MISSING DATA

As research articles age, the odds of their raw data being extant drop dramatically.



<http://www.nature.com/news/scientists-losing-data-at-a-rapid-rate-1.14416>

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for returning my lost backpack



• Black [AK] Burton Rucksack
• Lost on Friday 15. July at 8 pm in the Panton Arms pub 43, Panton St. Cambridge
• Containing a laptop (white MacBook), a black external hard drive and scientific research documents

The external hard drive is VERY important to me as it contains 5 years of research data which are crucial for my PhD thesis!!!

If you found it, I would be extremely grateful if you could return it to the Panton Arms or contact me on: 07804430054 (ar456@cam.ac.uk)

Thank you!!

PMRblog, 2011

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DATA MANAGEMENT PLAN.
NON È SOLO L'ENNESIMA NOIA
BUROCRATICA

...servono dati FAIR...

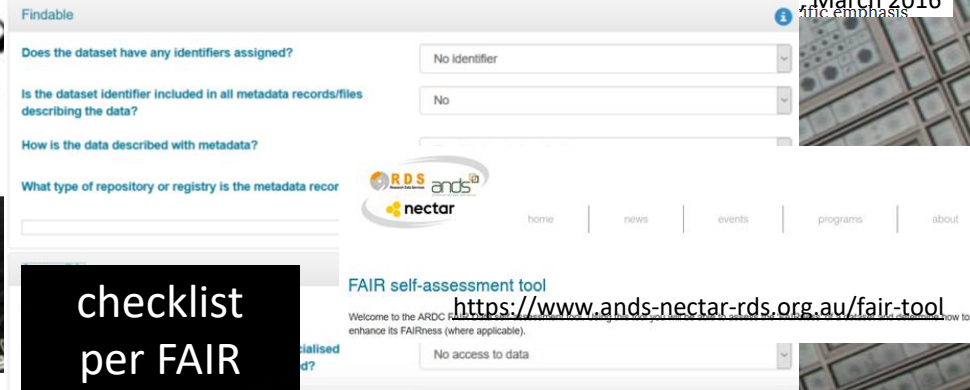
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The FAIR Guiding Principles for scientific data management and stewardship

Barend Mons

improve the infrastructure supporting the diverse set of stakeholders—representing agencies, and scholarly publishers—have jointly endorse a concise and measurable set of as the FAIR Data Principles. The intent is to provide a guideline for those wishing to enhance the FAIRness of their data.

March 2016



F=METADATI, IDENTIFICATIVI
PERSISTENTI...

A= CONSERVAZIONE SUL LUNGO
PERIODO

I=FORMATI APERTI, INTEROPERABILI

R=DOCUMENTAZIONE E LICENZE

We are hiring (again!) – Data Steward position at TU Delft

WE ARE HIRING

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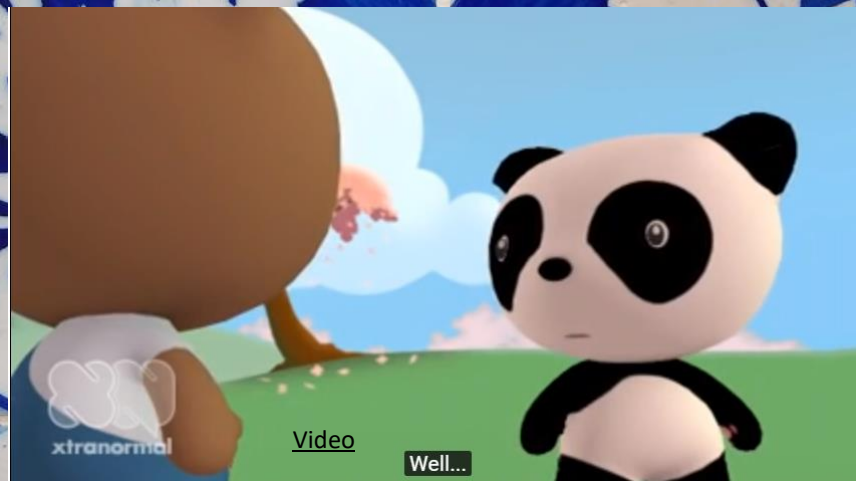
- Closing date: 15 March 2018
- Salary: up to € 4084/month
- We are looking for individuals enthusiastic about data management and who have a PhD degree in the relevant subject area (or equivalent experience).

[ricordandosi che ci sono 3 passi]

Open

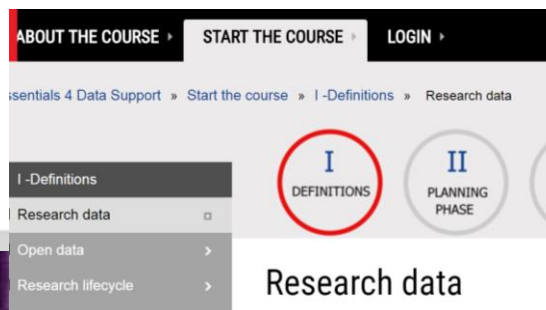
FAIR

Gestione/Cura



[...imparare a gestire i dati]

Research data is the material underpinning a research assertion. ⁽⁴⁾



Essentials4data

Managing and Sharing Research Data

In this course, you'll focus on which data you can share and how you can go about doing this most effectively.

Introduction

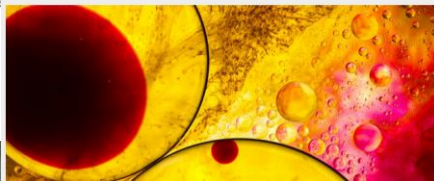
Data-driven research is becoming increasingly common in a wide range of academic disciplines, including Zoology, and spanning Arts and Science subject areas alike. To support good research, we have access to good data. Upon completing this course, you will:

- understand the differences between open, closed, and shared data
- be able to make decisions about which data you can share
- know what a data management plan is
- be aware of the FAIR principles
- know how to put this into practice

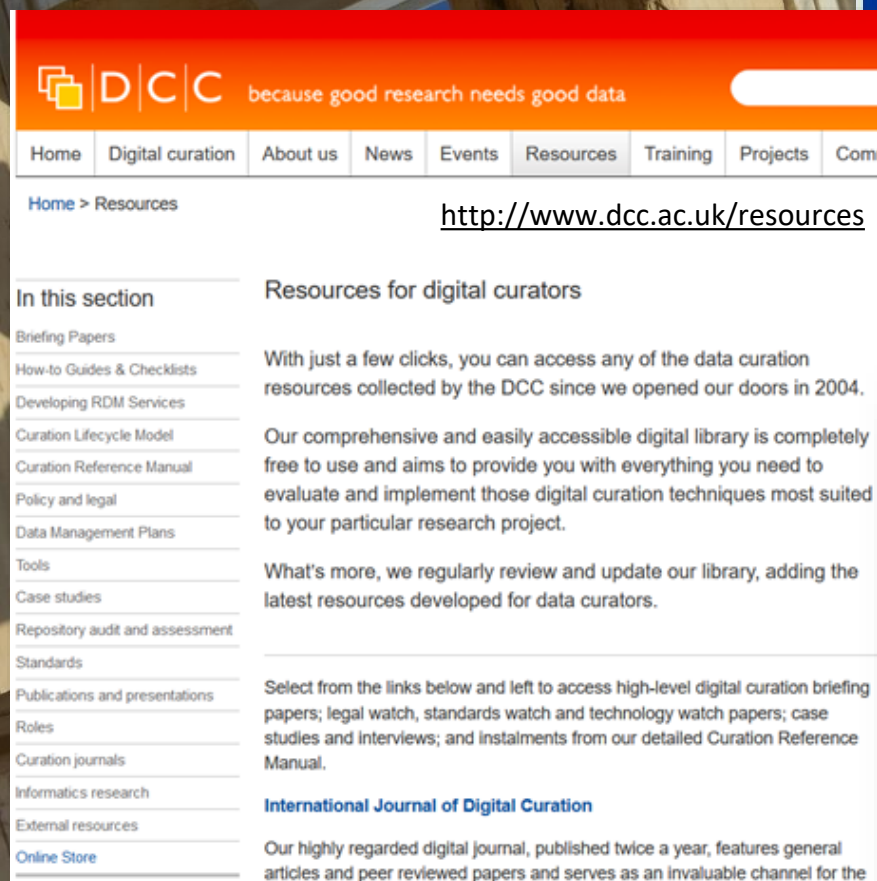
<https://www.fosteropenscience.eu/toolkit>

Managing and Sharing Research Data

In this course, you'll focus on which data you can share and how you can go about doing this most effectively.



[...imparare: due pilastri, anzi tre]



DCC because good research needs good data

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In this section

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- How-to Guides & Checklists
- Developing RDM Services
- Curation Lifecycle Model
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- Policy and legal
- Data Management Plans
- Tools
- Case studies
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With just a few clicks, you can access any of the data curation resources collected by the DCC since we opened our doors in 2004.

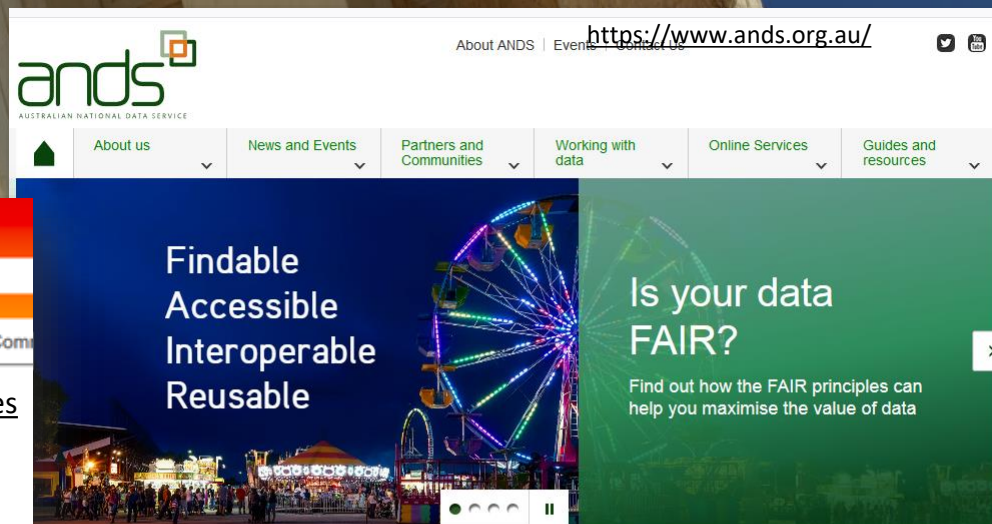
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Our highly regarded digital journal, published twice a year, features general articles and peer reviewed papers and serves as an invaluable channel for the



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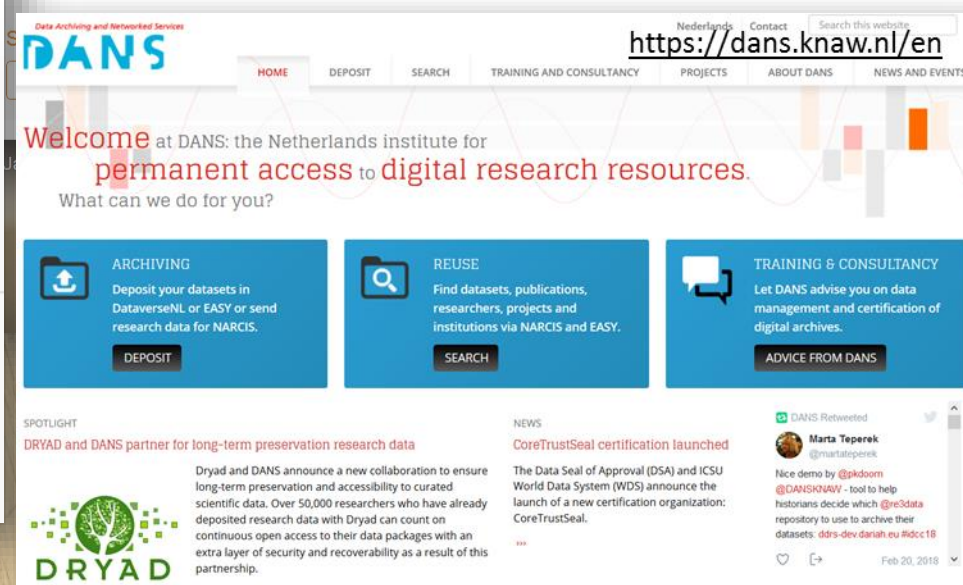
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Is your data FAIR?

Find out how the FAIR principles can help you maximise the value of data

Data Archiving and Networked Services



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ADVICE FROM DANS

SPOTLIGHT

DRYAD and DANS partner for long-term preservation research data

Dryad and DANS announce a new collaboration to ensure long-term preservation and accessibility to curated scientific data. Over 50,000 researchers who have already deposited research data with Dryad can count on continuous open access to their data packages with an extra layer of security and recoverability as a result of this partnership.

NEWS

CoreTrustSeal certification launched

The Data Seal of Approval (DSA) and ICSU World Data System (WDS) announce the launch of a new certification organization: CoreTrustSeal.

DANS Retweeted
Marta Terepsek @martaterepsek
Nice demo by @pkidoom
@DANSKNOW - tool to help historians decide which @re3data repository to use to archive their datasets. dans-dev.dans.knaw.nl/dcc18

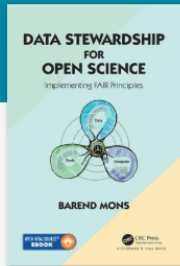
Feb 20, 2018

[...imparare: un maestro]



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Data Stewardship for Open Science Implementing FAIR Principles

the worst way imaginable to communicate the outcome of the scientific process. If science has become indeed data driven and *data is the oil of the 21st century*, we better put data centre stage and publish data as first-class research objects, obviously with supplementary narrative where needed, steward them throughout their life cycle, and make them available in easily reusable format.

Yet another recent study claimed that only about 12% of NIH funded data finds its way to a trusted and findable repository. Philip Bourne, when associate director for data science at the U.S.A. National Institutes of Health coined the term **dark data** for the 88% that is lost in amateur repositories or on laptops. When we combine the results of the general reproducibility related papers and the findability studies,

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Monsense and more... @barendmons · 2 h

Finally! Tomorrow the book goes to the printer: Data Stewardship for Open Science: Implementing FAIR Principles

Traduci dalla lingua originale: inglese



Data Stewardship for Open Science: Implementing ...
Data Stewardship for Open Science: Implementing FAIR Principles has been written with the intention of making scientists, funders, and innovators in all disciplines an...
crcpress.com



In conclusion to this paragraph, my statement in 2005: Text-mining? Why bury it first and then mine it again? [Mons, 2005] is still frighteningly relevant.

A good data steward publishes data with a supplementary article(Data(+)).

...quindi serve Data Management Plan



IOSSG

Italian Open Science Support Group

- DMP È
- UN MODO STRUTTURATO DI PENSARE AI PROPRI DATI: raccolta, conservazione, descrizione, condivisione
 - living document: va aggiornato

DATASET DESCRIPTION	Descrivere i dati esistenti o che si intendono creare, indicandone provenienza, natura e ordine di grande Motivare la creazione di nuovi dataset e relativo valore aggiunto.
Provenance of data (content)	Descrivere se i dati provengono da interviste, indagini, sono estratti da archivi disciplinari, banche dati e/o da altri progetti (in tal caso, segnalare il titolo dei progetti)
Provenance of metadata	Idem
Type of data	Descrivere se sono qualitativi, quantitativi

Data Stewardship Wizard

Data Integration

7

Data Interpretation

3

Information and insight

14

Is there any pre-existing data?

Are there any data sets available in the world that are relevant to your planned research?

Data Stewardship for Open Science: atg

☐ No

☐ Yes

Will reference data be created?

reference data set for future research (by

Data Wizard per gestire i dati

<https://app.dsw.fairdata.solutions/questionnaire>

C/C because good research needs good data

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in Resources for digital curators

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DMP ONLINE Home About Future plans Help Change language

Welcome.

DMPOnline helps you to create, review, and share data management plans that meet institutional and funder requirements. It has been jointly developed by the Digital Curation Centre (DCC) and the University of California Curation Center (UCC).

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Or sign in with your institutional credentials (UK users only)

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Screenshot on how to use DMPOnline

Create a new plan

0:00 / 4:47

...per costruire EOSC



<https://www.go-fair.org/> News Coi
GO FAIR Initiative Implementation Networks FAIR Principles Technology Training Certif

GO FAIR: a bottom-up international approach

for the practical implementation of the European Open Science Cloud (EOSC) as part of a global Internet of FAIR Data & Services

Context of GO FAIR

Watch videos



Vision

GO FAIR governance structures

Strategy

open implementation strategy for the... needed to establish the first phase of... (EOSC) as part of a broader gl... The approach is largely based o... recommendations of the High Lev...



EOSCpilot.eu @eoscpiot · 20 feb

Service Providers are the heart of #EOSC's value proposition. The European #OpenScience #Cloud can take part either as builders or providers. Learn more here: eoscpiot.eu/pilots/service... #H2020 #DigitalSingleMarket

Traduci dalla lingua originale: inglese



EOSC
The European Open Science Cloud for Research Pilot Projects
STAKEHOLDER SPOTLIGHT

SERVICE PROVIDERS

<https://twitter.com/eoscpiot/status/965983195559809024>



EOSC-hub

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Digital Innovation Hub

Digitizing Industry through the European Open Science Cloud

The EOSC Digital Innovation Hub (DIH) is a mechanism for private companies to collaborate with public sector in access technical services, research data, and human capital.

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National Institutes of Health

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Breast Cancer Res Treat. 1988 May;11(2):147-53.

Distribution of Ha-RAS-1 proto-oncogene alleles in breast cancer patients and in a control population.

Saglio G¹, Camaschella C, Giari M, Serra A, Guerrasio A, Peirone B, Gasparini P, Mazza U, Ceppellini R, Biglia N, et al.

Author information

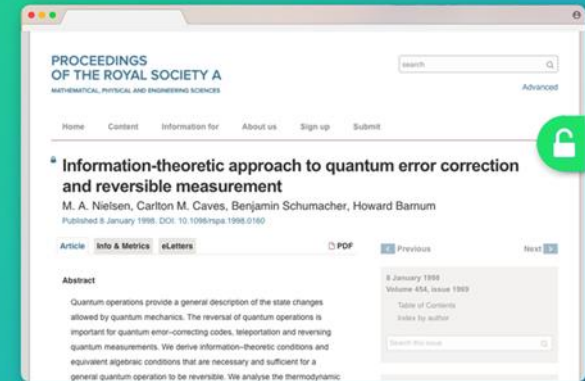
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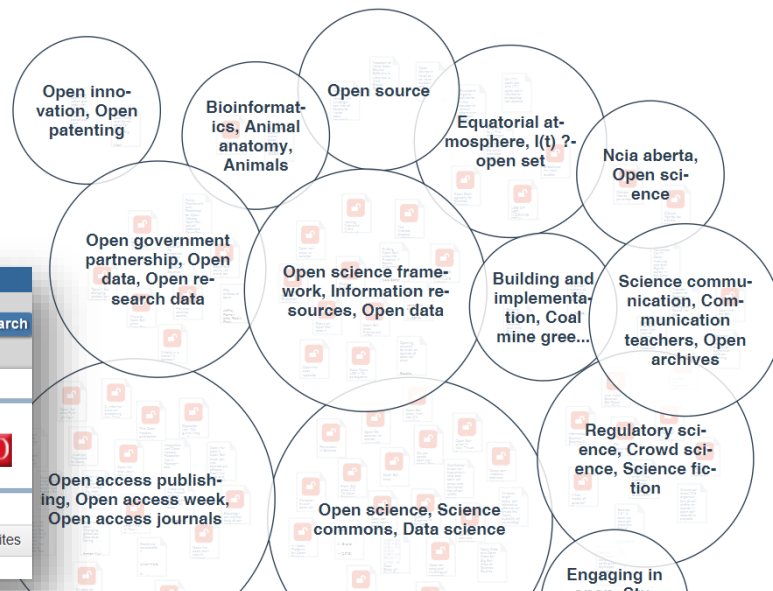


OPEN KNOWLEDGE MAPS

A visual interface to the world's scientific knowledge

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100 documents (57 open access) Source: BASE All time Document type: Journal/newspaper article



...mantenendo i diritti



ALCUNI DIRITTI RISERVATI



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TUTTI I DIRITTI RISERVATI

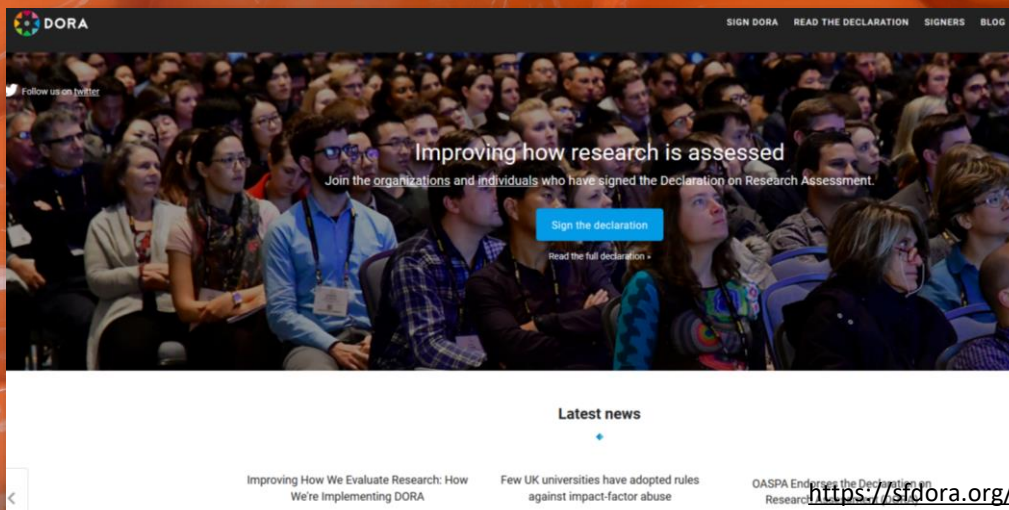
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...e separando disseminazione da valutazione...



manage visibility, authority and prestige. The question we should ask is whether the communication system and the reputational system of science and scholarship should be one and the same⁵⁶.

From all that precedes, it becomes obvious that the kind of Open Access really needed should **dissociate communication from evaluation**. And the dissociation may be easier to achieve if one



Ragioni per No

Valid reasons not to participate in open science practices

Casper J. Albers*

Abstract

The past years have seen a sharp increase in the attention for open science practices. Such practices include pre-registration and registered reports, sharing of materials, open access publishing and attention to reproducibility of research. Despite the overwhelming amount of evidence highlighting the benefits of open science, some researchers remain reluctant. In this paper, I will outline valid reasons for researchers not to participate in open science practices.

Discussion

There are no valid reasons.

*Heymans Institute for Psychological Research, Grote Kruisstraat 2/1, 9712 TS Groningen, The Netherlands. <https://twitter.com/CaAl/status/966279936028958720>

Whose side are you on?

DOVEVANO Le NUVOLE REGIA MASSIMO FERRARI

Quando soffia il VENTO del CAMBIAMENTO
c'è chi costruisce MURI
e chi MULINI A VENTO



... e voi?

...grazie!