

Scholarly communication and research evaluation: the Open Science Revolution

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Summary

"No proper publication"

Science and knowledge communities

Open science: a modern "revolution"

Modern science as a club good
An age of Enlightenment

Research evaluation: the placeholders of science

Plato's fear redux: irresistible proxies
An example: MMR vaccine and autism

Knowledge communities

Humboldt's Reform : university as an institutional community of knowledge

Open science: a philosophical ideal or a research management model?

Open science in Italy

Can an administrative research assessment be compatible with the open science ideal?

AISA proposal to grant authors the right to make their work available to the public for free, after being published

Micro-bibliography

A competitive researcher

"Come valutare le università? Meno algoritmi e più peso alla qualità" tempi bui si preannunciano per la valutazione della qualità dell'Università. Un qualche cosa che non è mai andata giù a quei mediocri che non hanno uno straccio di pubblicazione decente



Come valutare le università? Meno algoritmi e più peso alla qualità

Il «restyling» del sistema di valutazione degli atenei prevede di ridurre il peso attribuito agli algoritmi e di concentrarsi sulla qualità delle pubblicazioni dei «val...

Proper (public?)ation

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Publication?

Education ▶ Schools Teachers Universities Students

Academics Anonymous Universities

Academics are being hoodwinked into writing books nobody can buy

An editor called me up to ask me if I'd like to write a book. I smelled a rat, but I played along...

Anonymous Academic

Fri 4 Sep 2015 15:59 BST

Seventy-five books, £80 each, selling on average 300 copies. That's £1.8m. And he's just one of their commissioning editors. What's more, these publishers are not known for hiring talented illustrators to come up with nice covers – and you rarely see their books advertised in magazines.

"If you don't mind my asking," I said as our conversation drew to a close, "how did you find me?"

A moment of awkward silence, and then: "Um, well, I found your name on your university website."

Universities focus too much on measuring activity, not quality

[Read more](#)

At the time, there was no information about me on the university website. No publication list, no information about my research interest, not even a photograph.

So I'd been asked to write a book about whatever I wanted, and this editor didn't even know whether I'd written anything before. It didn't matter. It would sell its 300 copies regardless. Not to people with an interest in reading the book, but to librarians who would put it on a shelf and then, a few years later, probably bury it in a storeroom.

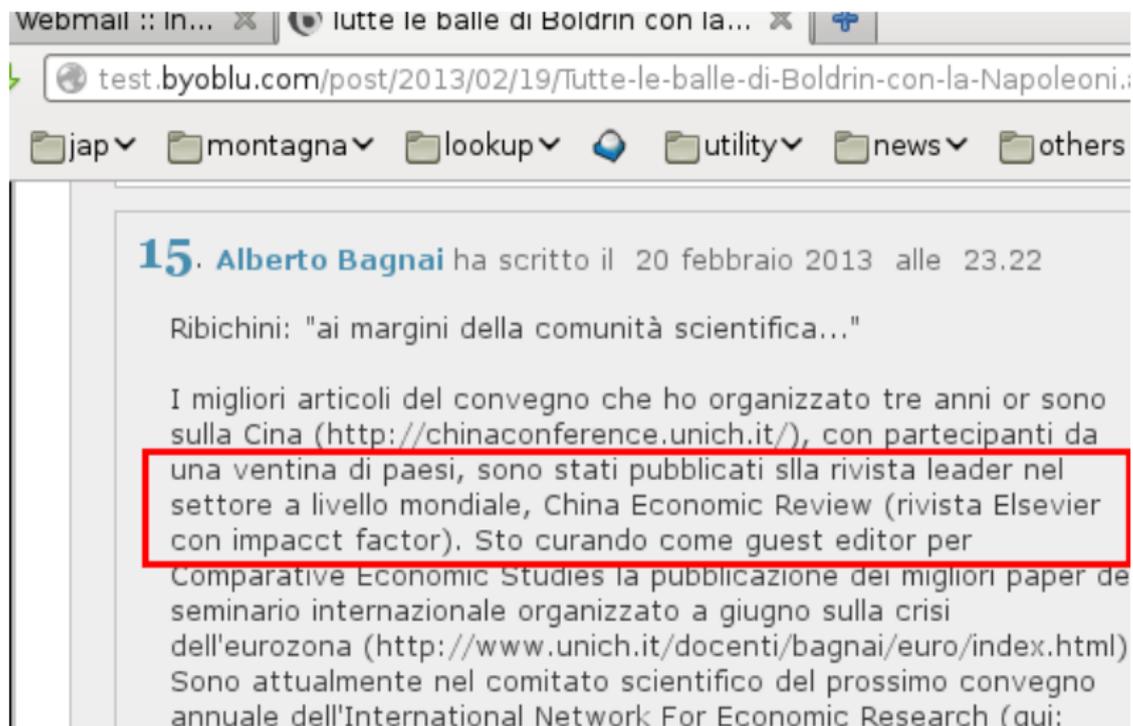
arch ▾ International edition ▾

The Guardian

More ▾



Proper?



Webmail :: In... x | tutte le balle di Boldrin con la... x

test.byoblu.com/post/2013/02/19/Tutte-le-balle-di-Boldrin-con-la-Napoleoni...

jap ▾ montagna ▾ lookup ▾ utility ▾ news ▾ others

15. Alberto Bagnai ha scritto il 20 febbraio 2013 alle 23.22

Ribichini: "ai margini della comunità scientifica..."

I migliori articoli del convegno che ho organizzato tre anni or sono sulla Cina (<http://chinaconference.unich.it/>), con partecipanti da una ventina di paesi, sono stati pubblicati sulla rivista leader nel settore a livello mondiale, China Economic Review (rivista Elsevier con impacct factor). Sto curando come guest editor per Comparative Economic Studies la pubblicazione dei migliori paper de seminario internazionale organizzato a giugno sulla crisi dell'eurozona (<http://www.unich.it/docenti/bagnai/euro/index.html>) Sono attualmente nel comitato scientifico del prossimo convegno annuale dell'International Network For Economic Research (qui:

Writing is an enemy of science

Plato, *Phaedrus* 275a-b: Il mito di Teuth

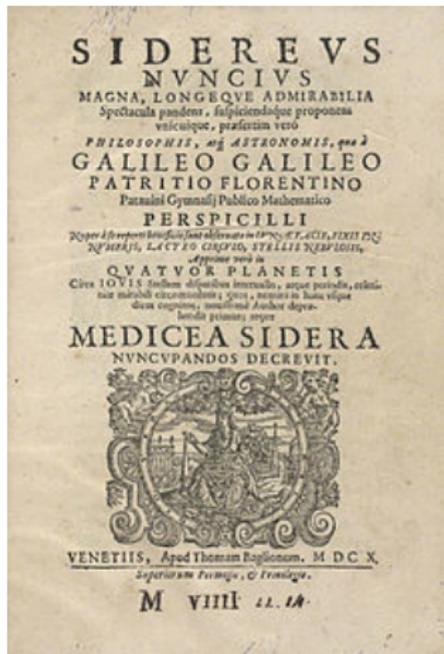
For this invention will produce forgetfulness in the minds of those who learn to use it, because they will not practice their memory. Their trust in writing, produced by **alien signs** (*allogrioi typoi*) which are no part of themselves, will discourage the use of their own memory within them. You have invented an elixir (*pharmakon*) not of memory, but of reminding; and you offer your pupils the appearance (*doxa*) of wisdom, not true wisdom, for they will read many things without instruction and will therefore seem to know many things, when they are for the most part ignorant and hard to get along with (*syneinai*), since they are not wise, but only appear wise (***doxosophoi***).

Printing is an enemy of science

Lutero, Warning to the Printers (1545)

... others are instantly reprinting (our translation) and are thus depriving us of our work and expenses to their profit, which is a downright public robbery and will surely be punished by God / and which is unworthy of any honest Christian. It is not for my own sake, though, that I am concerned since it was freely that I received and freely that I gave it, and I ask for nothing in return: Christ my Lord has repaid me for it many hundred thousand times over. But this I must lament about avarice, that these greedy and rapacious reprinters are handling our work carelessly. For, seeking only their own profit, they don't care much about the accuracy of what they are reprinting, and it has often happened to me when reading their reprinted text that I found it so full of errors that in many places I couldn't recognize my own work and had to correct it from scratch.

A revolutionary way of communicating



Publishing = making research public

1610: Galileo Galilei has his *Sidereus Nuncius* put into print by a small publisher in Venice, in order to share his discoveries with the public, so that everyone might see and recognize their truth.

From Renaissance magic to modern science

From secrecy to publicity [?]

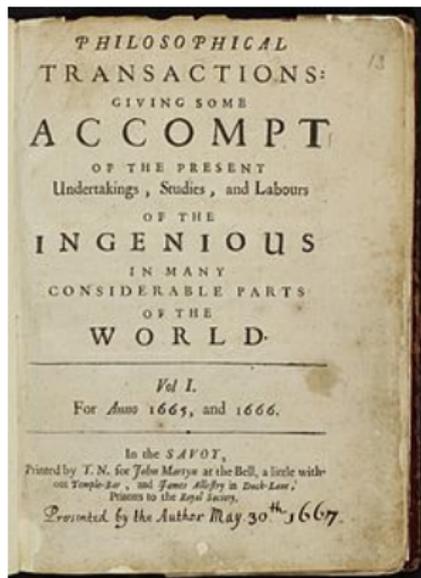
Dissimulating, refraining from making one's opinions public, only means cheating and deceiving. . . . Secrecy, according to science and within it, has become a *negative value*.

Nullius in verba

Academies redux, to host free debates, without any political or religious interference [?]

Academics should be critical of anyone's views, because **"truth does not depend on the authority of the person asserting it, but only on the evidence of experiments and on the strength of demonstrations."**

Phil. Trans.: a "social registry of scientific innovation"



- ▶ presentation
- ▶ perusal
- ▶ (registration)
- ▶ publication

[?, 61]

Open peer review

Science as a process, rather than as a product [?, 69]

"The point of the Royal Society's reading regime was never to *eliminate* disputes like those through which Newton prospered. On the contrary, it was meant to generate them. **The intent was to produce fertile engagements between people** who thought differently and who might otherwise have had no common ground on which to meet. The Society's civility served first to bring this about, and then to limit and manage the resulting disagreements."

Open science as a club good

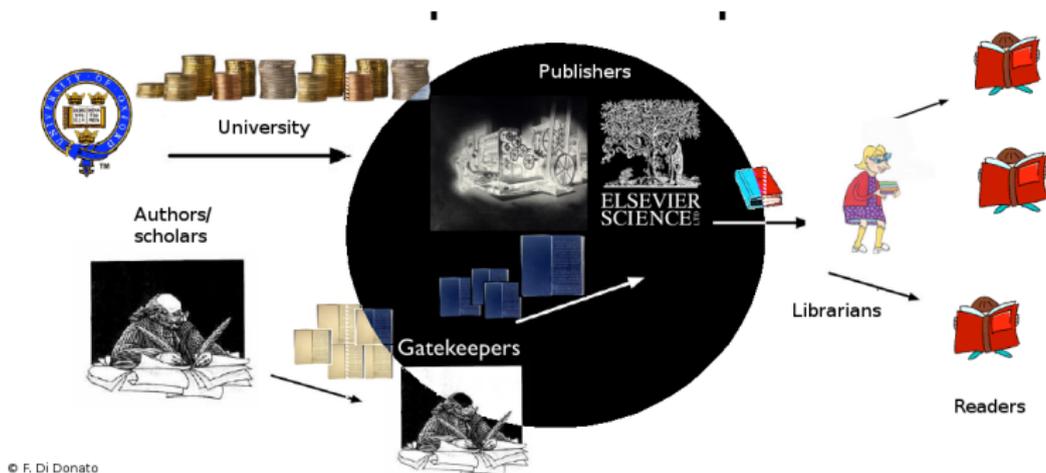
The most beautiful gift of aristocracy to capitalism [?]

- ▶ (academic) research was (relatively) free and open, for the benefit of many
- ▶ it was funded by patrons
- ▶ who were guided by the academic debates
- ▶ and whose goal was enhancing their reputation by funding arts and science
- ▶ regardless of their possible profitability

The public use of reason [?]

- ▶ Speaking as scholars before the *entire* public of the world of readers means speaking to the society of the citizens of the world, rather than to some academic club (*Weltbürgergesellschaft*)
- ▶ Scholarly free speech helps everybody to become aware of their call to think for themselves
- ▶ Scholarly texts belong to the public domain at least *de facto* and sometimes also *de iure* (*Nachdruck* and *droit de recopie*)

Publications (and later citations) as proxies for scientific value



Doxosophy as textual fetishism

Plato, *Phaedrus* 275a-b: Il mito di Teuth

For this invention will produce forgetfulness in the minds of those who learn to use it, because they will not practice their memory. Their trust in writing, produced by **alien signs** (*allogrioi typoi*) which are no part of themselves, will discourage the use of their own memory within them. You have invented an elixir (*pharmakon*) not of memory, but of reminding; and you offer your pupils the appearance (*doxa*) of wisdom, not true wisdom, for they will read many things without instruction and will therefore seem to know many things, when they are for the most part ignorant and hard to get along with (*syneinai*), since they are not wise, but only appear wise (***doxosophoi***).

Irresistible proxies

When writing freezes discussions into seemingly freestanding textual units we are exposed to the temptation to believe that

- ▶ it is possible evaluating science on the basis of without discussing
- ▶ it is possible evaluating science without knowing it
- ▶ on the basis of its documents and the relations among them

It was published in a high impact scientific journal: therefore, it should be scientifically sound. Really?

Format: Abstract ▾

Send to ▾

! RETRACTED ARTICLESee: [Retraction Notice](#)

[Lancet](#), 1998 Feb 28;351(9103):637-41.

Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children.

[Wakefield AJ](#)¹, [Murch SH](#), [Anthony A](#), [Linnell J](#), [Casson DM](#), [Malik M](#), [Berelowitz M](#), [Dhillon AP](#), [Thomson MA](#), [Harvey P](#), [Valentine A](#), [Davies SE](#), [Walker-Smith JA](#).

⊕ **Author information****Erratum in**

Retraction of an interpretation. [Lancet. 2004]

Retraction in

Retraction—Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children. [Lancet. 2010]

Expression of concern in

The significance of ileo-colonic lymphoid nodular hyperplasia in children with autistic spectrum disorder: expression of concern. [Eur J Gastroenterol Hepatol. 2011]

Is there a correlation between MPR vaccine and autism? [?]

Wakefield's paper was:

- ▶ a case report about only 12 children
- ▶ without control group
- ▶ with manipulated data
- ▶ and under a financial conflict of interests

However, it took twelve years to have it retracted!

Wakefield's paper (1998) was retracted only in 2010. [?]

Just an anecdotal evidence?

- ▶ Authors “cheat” for the sake of their career
- ▶ Closed, anonymous peer reviews might fail
- ▶ The reputation of the publishing venue helps to spread wrong opinions
- ▶ ...with the support of the “generalist” media channels
- ▶ The very slowness of the retraction process fuels uncertainty and doubts

Iipse scripsit?

Can a container actually determine the quality of its content?

“A scientific work is a contribution generally published in a
“well-respected”/scholarly journal, i.e. a peer reviewed scientific journal”

Richard Horton - editor of "The Lancet"

Richard Horton, "much of the scientific literature, perhaps half, may simply be untrue" *The Lancet*, 2015

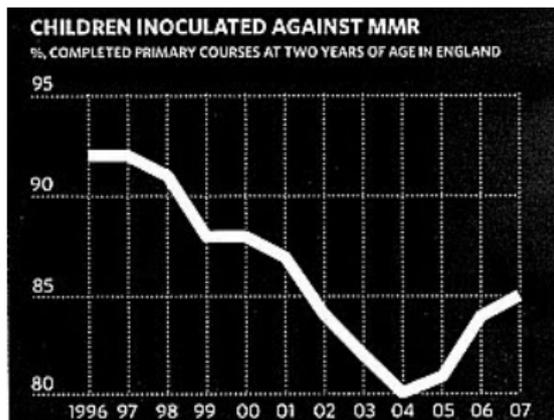
The apparent endemicity of bad research behaviour is alarming. **In their quest for telling a compelling story, scientists too often sculpt data to fit their preferred theory of the world.** Or they retrofit hypotheses to fit their data. Journal editors deserve their fair share of criticism too. We aid and abet the worst behaviours. Our acquiescence to the impact factor fuels an unhealthy competition to win a place in a select few journals. Our love of "significance" pollutes the literature with many a statistical fairy-tale. We reject important confirmations. Journals are not the only miscreants. Universities are in a perpetual struggle for money and talent, endpoints that foster reductive metrics, such as high-impact publication. **National assessment procedures, such as the Research Excellence Framework, incentivise bad practices.** And individual scientists, including their most senior leaders, do little to alter a research culture that occasionally veers close to misconduct.

Even social sciences have their uncertainty principle

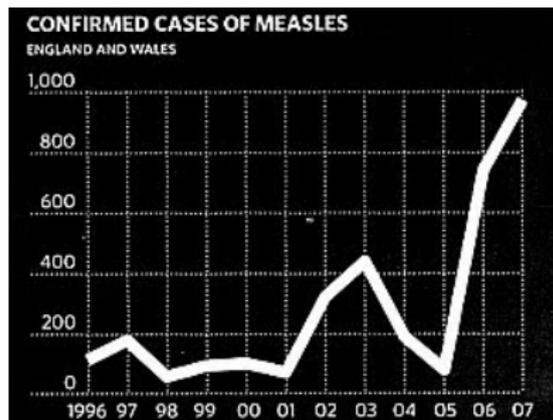
Mario Biagioli, “Watch Out for Cheats in Citation Game”
Nature, 2016

All metrics of scientific evaluation are bound to be abused. Goodhart’s law (named after the British economist who may have been the first to announce it) states that when a feature of the economy is picked as an indicator of the economy, then it inexorably ceases to function as that indicator because people start to game it.

Scientific theories are mutually irreplaceable unique piece



Drop in measles vaccinations after 1998



Increase in number of measles cases

Plato's ancient solution

A combined strategy to keep proxies under control:

- ▶ freedom of texts
- ▶ promotion of knowledge communities

A growing unbalance

Communication has gained an industrial-scale power and computability; research remains craft-based [?, XI].

Communication

1. Writing
2. Printing
3. ICT

Research

Knowledge community

XIX century: open science enters university

Science is the belief in the ignorance of experts. [?]

“It is a peculiarity of the higher scientific institutions that they always treat **science as a problem that has still not been fully resolved** and therefore remain constantly engaged in research, whereas the school deals with and teaches only finished and agreed-upon bits of knowledge” [?]

Autonomy of science

solitariness independence from corporate and political powers

freedom self-determination of research interests and topics

cooperation commitment to a common goal, within a common space of experience and debate

A precarious separation of powers

The government guarantees and respects the openness of research, provided that it remains socially and politically circumscribed.

Scientific autonomy Universities evaluate research (by awarding some researchers the *venia legendi*).

Administrative eteronomy the government appoints the tenured professors.

Humboldt, upside-down: XX century research bureaucratization

Research industrialization - researchers proletarianization

The large institutes of medicine or natural science are 'state capitalist' enterprises, which cannot be managed without very considerable funds. Here we encounter the same condition that is found wherever capitalist enterprise comes into operation: **the 'separation of the worker from his means of production.'** The worker, that is, the assistant, is dependent upon the implements that the state puts at his disposal; hence he is just as dependent upon the head of the institute as is the employee in a factory upon the management. For, subjectively and in good faith, the director believes that this institute is 'his,' and he manages its affairs. Thus the assistant's position is often **as precarious as is that of any 'quasi-proletarian' existence** and just as precarious as the position of the assistant in the American university [?]

Two meanings of Open Science

1. a **management model** that might also be aimed to the exploitation of open research texts and data for the sake of the market
2. a **philosophical ideal of human emancipation** through the opening of scholarly conversation among people

Open science in Italy: the burden of a centralized research assessment system

- ▶ Legge 112 7/10/2013: a theoretical obligations on research institutions and universities about the opening of articles based on publicly funded research, with an unjustifiably long embargo period (18 and 24 months from the publication date)
- ▶ A centralized administrative research assessment relying on proprietary databases like Scopus and Clarivate Analytics and on the journals indexed in them and on “dark” archives
- ▶ The raw bibliometric data on which ANVUR evaluations and rankings are based are neither open nor accessible
- ▶ A collective five years contract granting Elsevier both subscription fee and APCs (*double dipping*)
- ▶ Open science has been presented (and quickly retracted!) as a prerequisite for all the papers submitted to the next evaluation exercise (<https://www.roars.it/online/vqr-2015-2019-decifriamo-i-misteri-del-bando/>)

For the sake of the argument

let's pretend that the Italian centralized assessment of research could mirror it in a perfectly faithful way, because

1. it relies on open bibliometric data
2. citations are the currency of science
3. bibliometric can actually take a very accurate picture of the state of each disciplinary field

When a picture becomes a model



Gustave Doré, La Belle au Bois Dormant

Lucio Russo, *La cultura componibile*, 2008

Anonymous peer review + bibliometric evaluation = conformism

Chi vuole intraprendere strade non ancora accettate dalla comunità in primo luogo ha difficoltà a pubblicare, scontrandosi con un **muro omogeneo e anonimo**. Se anche, come supponiamo per comodità di argomentazione, riuscisse nell'intento di inaugurare una scuola di pensiero alternativa sarebbe ovviamente poco citato, perché sarebbero ben rari i ricercatori che sceglierebbero di entrare in un gruppo minoritario, sapendo che il meccanismo quantitativo di valutazione, basato sul numero di citazioni, attribuirebbe ai loro risultati certamente un valore minimo. Il meccanismo per sua natura evidentemente si autoalimenta, **generando automaticamente omogeneità**.

An administrative and centralized research assessment is inherently retrograde

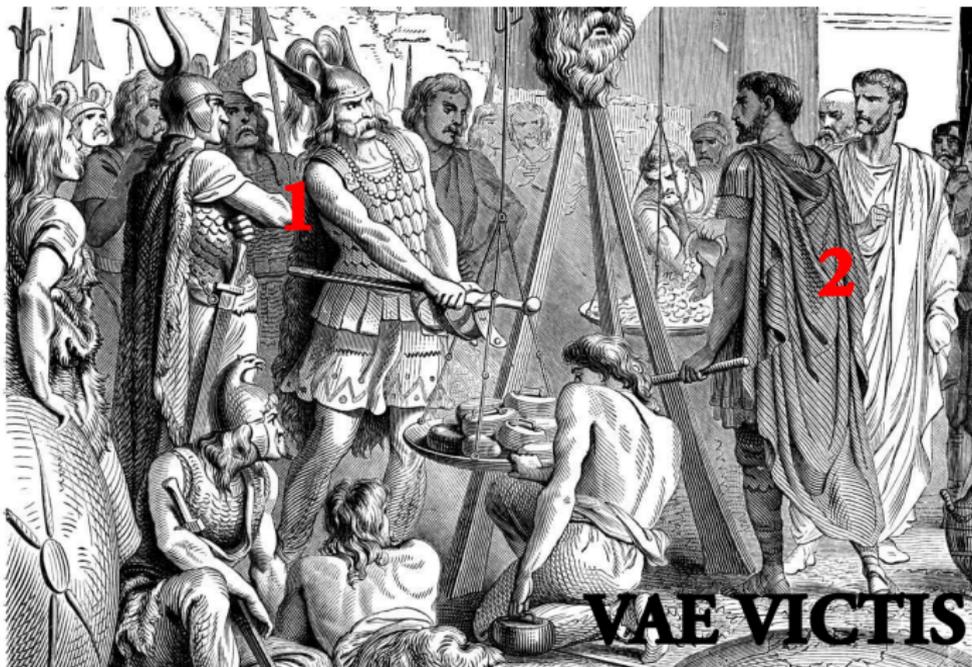
- ▶ Mainstream research paradigms become blueprints to follow
- ▶ Researchers follow - and sometimes try to game - them (Goodhart's law)
- ▶ science past systematically suffocates science future

An administrative and centralized research assessment is inherently despotic

Transforming paradigms informally shared into rigid sets of administrative laws outside the researchers' control means:

- ▶ preventing any future non-conformist paradigm choice
- ▶ cutting the root of the very legitimacy of the current mainstream paradigm, i.e. its being the conclusion of a free debate

Opening texts and data is not enough: we need to open our conversation again [?]



1. Bureaucratic authority 2. Scientific authority



AISA

Associazione italiana per la promozione della scienza aperta

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Proposta di modifica alla legge italiana sul diritto d'autore

Art. 42-bis (L. 22 aprile 1941, n. 633, Protezione del diritto d'autore e di altri diritti connessi al suo esercizio)

1. L'autore di un'opera scientifica che sia il risultato di una ricerca interamente o parzialmente finanziata con fondi pubblici, come un articolo, una monografia o un capitolo di un libro, ha il diritto di riprodurre, distribuire e mettere a disposizione gratuita del pubblico la propria opera nel momento in cui l'editore l'abbia messa a disposizione gratuita del pubblico o dopo un ragionevole periodo di tempo, comunque non superiore a un anno, dalla prima pubblicazione. L'autore rimane titolare di tale diritto anche qualora abbia ceduto in via esclusiva i diritti di utilizzazione economica sulla propria opera all'editore o al curatore. L'autore nell'esercizio del diritto indica gli estremi della prima edizione, specificando il nome dell'editore.

2. Le disposizioni del primo comma sono di ordine pubblico e ogni clausola contrattuale che limiti il diritto dell'autore è nulla.

Articoli recenti

[Plan S: luci ed ombre \(Milano, 29 gennaio 2019\)](#)

[Accesso aperto ibrido in Italia: solo una questione di "nudge"?](#)

[La redazione del "Journal of Informetrics" si dimette per fondare una nuova rivista ad accesso aperto](#)

[Open APC: quanto paghiamo per l'accesso aperto?](#)

["Scienza aperta, pubblicità, democrazia": slide e video della IV conferenza AISA](#)

[Anche il Belgio riconosce il diritto di ripubblicazione in ambito scientifico](#)

[Anche l'Ungheria interrompe il negoziato con Elsevier](#)

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[Fra il dire e il fare: la XIV conferenza di Berlino](#)

[http://aisa.sp.unipi.it/attivita/
diritto-di-ripubblicazione-in-ambito-scientifico/novella/](http://aisa.sp.unipi.it/attivita/diritto-di-ripubblicazione-in-ambito-scientifico/novella/)



Paolo Rossi (2015)

La nascita della scienza moderna in Europa

<https://tinyurl.com/y7ky74yp>



Immanuel Kant (1784)

Beantwortung der Frage: Was ist Aufklärung?

https://btfp.sp.unipi.it/dida/kant_7/ar01s04.xhtml



Paul David (2007)

The historical origins of 'open science'

<https://pdfs.semanticscholar.org/2948/0da8855b61022f0e0a9fb5808444f428af08.pdf>



Timothy Gowers (2017)

Peer review: the end of an error?

<https://www.the-tls.co.uk/articles/public/the-end-of-an-error-peer-review/>



Alex Csiszar (2016)

Peer review: troubled from the start

<http://www.nature.com/news/peer-review-troubled-from-the-start-1.19763>



Richard Feynman (1966)

What Is Science?

http://www.fotuva.org/feynman/what_is_science.html



Jerome Ravetz (1971-1996)

Scientific Knowledge and Its Social Problems

<https://tinyurl.com/yd9r4gsx>



Adrian Johns (2009)

Piracy

<http://kelty.org/or/papers/bookreviews/Kelty-JohnsReview.pdf>



Wilhelm von Humboldt (1809)

Über die innere und äussere Organisation der höheren wissenschaftlichen Anstalten in Berlin

<https://edoc.hu%2Dberlin.de/handle/18452/5305>



Max Weber (1919)

Wissenschaft als Beruf

<http://www.anthropos-lab.net/wp/wp-content/uploads/2011/12/Weber-Science-as-a-Vocation.pdf>



Roberto Caso, Maria Chiara Pievatolo (2017)

Valutazione di stato e libertà della ricerca: una riflessione filosofico-giuridica

<https://btfp.sp.unipi.it/it/2017/05/libric/>



Maria Chiara Pievatolo (2018)

Agorà o museo? Una proposta di legge per l'accesso aperto

<https://btfp.sp.unipi.it/it/2018/09/agora-o-museo-una-proposta-di-legge-per-l-accesso-aperto/>



Julia Belluz (2019)

Research fraud catalyzed the anti-vaccination movement. Let's not repeat history

<https://www.vox.com/2018/2/27/17057990/andrew-wakefield-vaccines-autism-study>