# Visibile colleges?

## Science, the Internet and the anonymous use of reason.

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# Abstract

In the age of the printing press, it was easy, however inaccurate, to depict science as a set of true beliefs. In fact, we could only see articles and books, but the process of their discussion and selection was concealed from our eyes. It was, therefore, easy to separate them from their context, and to understand them as products instead of as parts of an ongoing, unfinished conversation. In spite of the digital revolution, the current 'industrialized science" emphasized such a trend, by adopting bibliometrics and "publish or perish" as research evaluation standards. This too close connection between (commercial) publishing and academic career is determining a crisis in science, which is affecting the very institution of anonymous peer review and of its accountability. Is there a way out? We shall explore a challenging proposal from India: moving the anonymity from the field of discussion to the field of "truth", by anonymizing authors and de-anonymizing reviewers.

# The ring of Gyges

[Zhou, 2010]

That mythical ring gave its owner the power of invisibility, and Plato observed that even a habitually just man who possessed such a ring would become a thief, knowing that he couldn't be caught. **Morality**, Plato argues, comes **from full disclosure**; without **accountability** for our actions we would all behave unjustly.

# An applied political philosopher

"I manage the design team responsible for how you share on Facebook and how you stay informed about the friends, public figures, and topics you care the most about."

Julie Zhou VP, product design at Facebook.

# Plato's challenge, more accurately

**Republic, 2.367a**

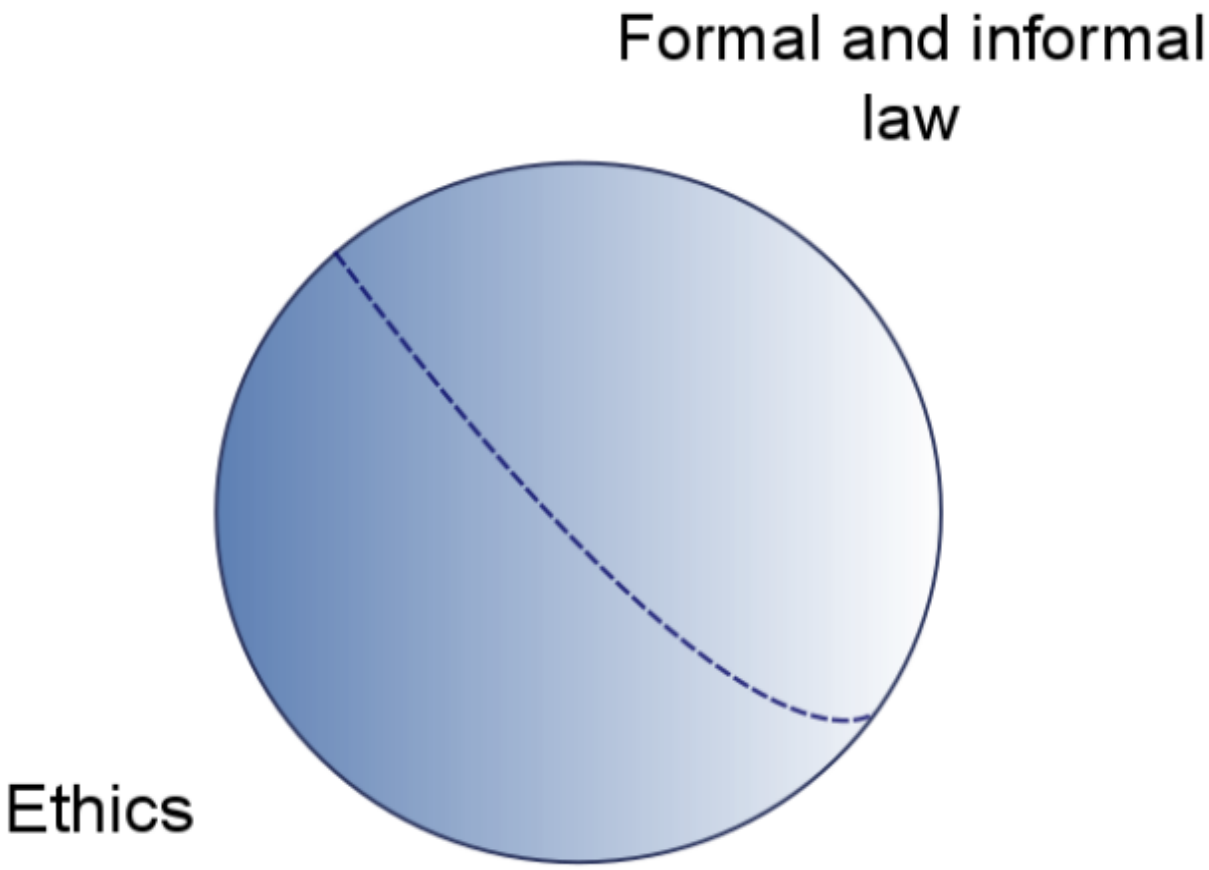
How to find a way to make each of us his own best guardian **instead of guarding against one another's injustice**?

# Zhou vs. Plato

| | Zhou | Plato |
|---|---|---|
| *Autonomy* | Anonymity ⇒ unaccountability | Anonymity ⇒ moral responsibility |
| *Heteronomy* | Disclosure ⇒ accountability | Disclosure ⇒ social control |

Morality: just a question of social control?

# Plato's challenge: reducing law, expanding ethics



# Why starting with Plato?

The Republic (abridged) is a book about an autonomous scientific community

- it (also) deals with the constitution of a scientific community
- and with the social means to give the society at large a set of checked beliefs

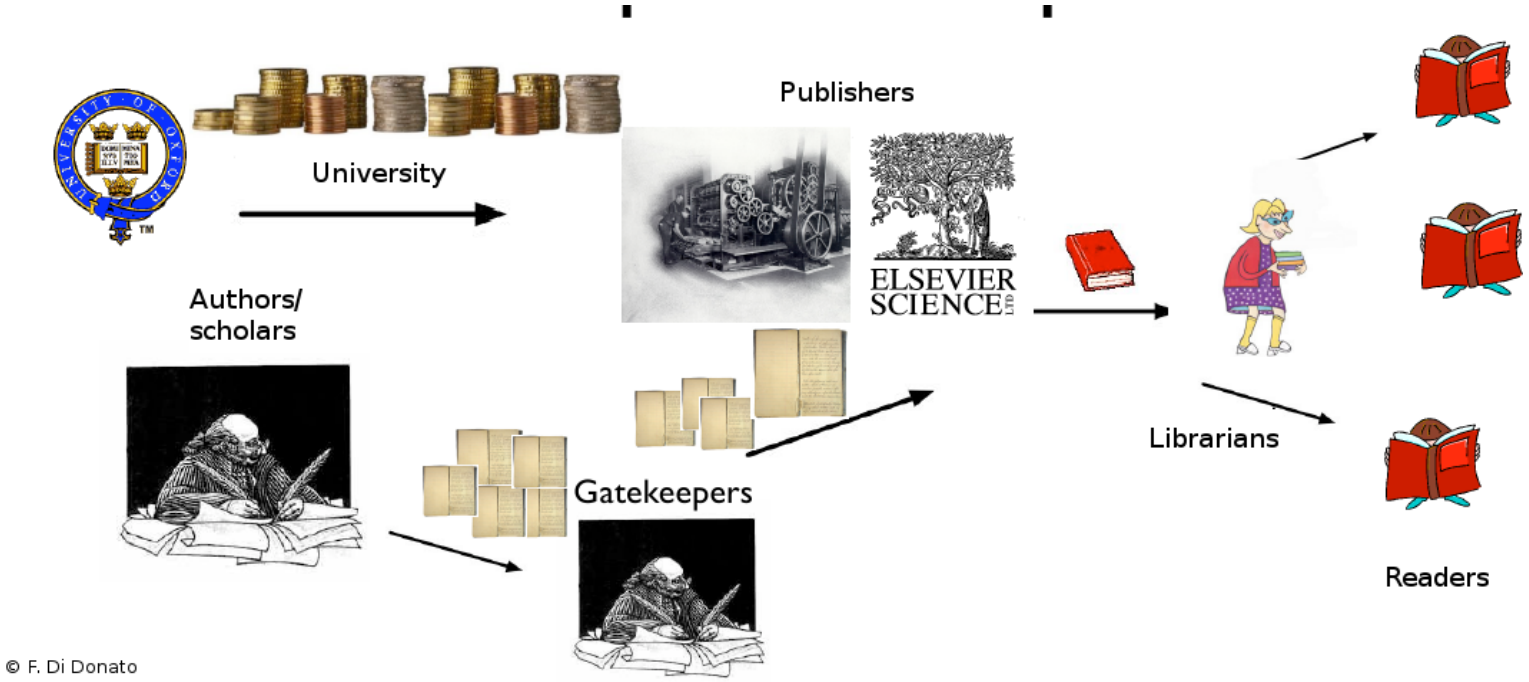
# A crucial question: who - or what - is wearing the ring of Gyges?

**Middle ages** every researcher (research was secret)

**Modern age** the scientific community as a whole (enclosed publicity)

**Contemporary age** referees, algorithms and lords of metadata

# A technological necessity



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- Ages of print: filter, then publish $\Longrightarrow$ closed peer review
- Internet: publish, then filter $\Longrightarrow$ open peer review (through discussion and use)

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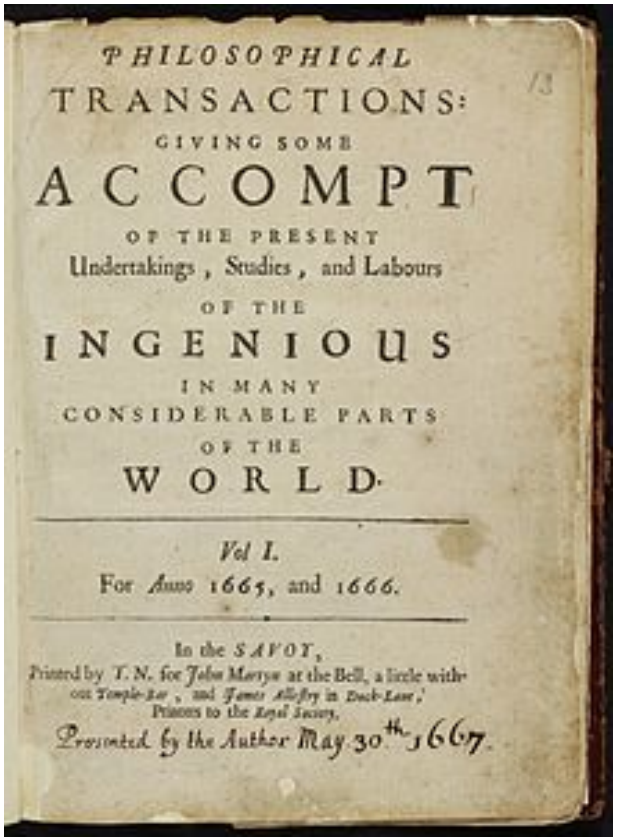
# However: the early peer review was open



PHILOSOPHICAL
TRANSACTIONS:
GIVING SOME
ACCOMPT
OF THE PRESENT
Undertakings, Studies, and Labours
OF THE
INGENIOUS
IN MANY
CONSIDERABLE PARTS
OF THE
WORLD.

Vol I.
For Anno 1665, and 1666.

In the SAVOY,
Printed by T. N. for John Martyn at the Bell, a little without Temple-Bar, and James Allestry in Duck-Lane,
Printers to the Royal Society.
Presented by the Author May 30th 1667.

- presentation
- perusal
- (registration)
- publication

[Johns, 2009], p. 61

# To foster public acknowledgment and debates

[Johns, 2009], p. 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.

# Peer review: a well-meant invention?

[Csiszar, 2016]

"In 1831, William Whewell, a Cambridge professor and philosopher of science, proposed a scheme to the Royal Society of London. He suggested that it commission reports on all papers sent for publication in the semi-annual Philosophical Transactions. Written by teams of eminent scholars, these reports might, he argued, be "often more interesting than the memoirs themselves" and thus a **great source of publicity for science**".

# The ring of Gyges: in the hands of the few - for the sake of the many?

[Csiszar, 2016]

In the 1960s, refereeing emerged as a symbol of objective judgment and consensus in science. The referee was, in the words of the physicist and science writer John Ziman, "the lynchpin about which the whole *business* of Science is pivoted". Just as in 1830s England, the relationship of science to the public was at the foreground of these changes . . . The very phrase 'scientific community' dates from this time. Researchers **wanted to preserve autonomy while holding on to the massive government funding** that had come their way since the Second World War.

# Journals as proxies for the scholarly community

I am a good researcher when

my papers are published in good peer-reviewed scholarly journals

or my monographs are published by publishers of good reputation

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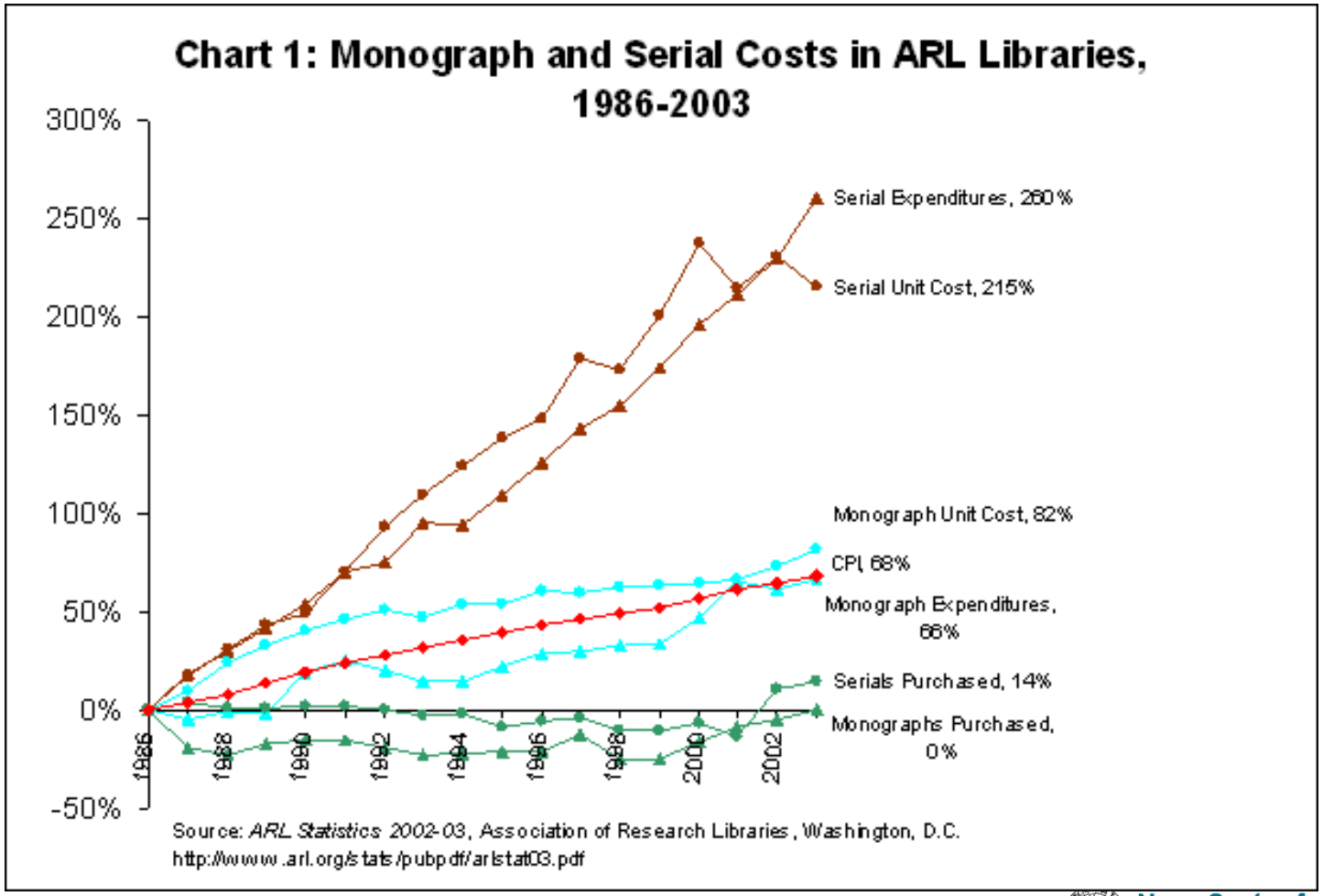
# Serial prices crisis



# G. Monbiot, The lairds of learning, 2011

Capitalism? No: feudalism.

- The academic publishers get articles, peer reviewing and much of the editing for free
- Researchers and university libraries must pay them to get their own work back.
- Or: funders or authors must pay to get their work published (APC) ...
- Why? To get a symbolic reward: a self-styled brand of excellence

# A privatized reason

[Bon, 2015]

I suggest that all shortcomings in the current publication system are rooted in the fact that it has drifted away from Science ethics, with publication – peer review, evaluation and dissemination – being privatized. A process whose rationale is to be open, transparent, and community-wide has become trapped in editors' mailboxes. The validity and value of a scientific work are both decided once and for all time, by two or three people in a process that is confidential, private, anonymous, undocumented, and with short deadlines. **Here, I use the term "privatization" not mean that the process is conducted by private companies, but to imply it concentrated in a few hands**.

# Stripping the ring of Gyges?

## Nature's peer review trial [Nature, 2006]

Despite the significant interest in the trial, **only a small proportion of authors opted to participate**. There was a significant level of expressed interest in open peer review among those authors who opted to post their manuscripts openly and who responded after the event, in contrast to the views of the editors. A small majority of those authors who did participate received comments, but typically very few, despite significant web traffic. Most comments were not technically substantive. Feedback suggests that there is a **marked reluctance among researchers to offer open comments**.

# Why wasting our time?

**Why should I do it?**

In a "publish or perish system" to participate in a public debate is a - dangerous - waste of time.

# Why do some scholars do it?

- T. Gowers: to reduce the cost of knowledge, let's break free from commercial publishers
- M. Bon: to rebuild a science more transparent, open and communal
- K. Fitzpatrick: to break free from the academy of undead and to make humanities more connected and ... human

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# Discrete Analysis


"I want to be aggressively modern. I want to use the internet properly – when you've got something, you post it"

- selecting and reviewing papers already made public by the ArXiv
- recommending them to readers
- to give authors the opportunity to publish in a peer-reviewed journal without paying any publisher

# Gowers: long term goals

- promoting the use of open repositories of preprints (like ArXiv, Zenodo, SocarXiv, EngrXiv)
- opening the whole scientific process of discovery and debate
- leaving closed access journals and commercial publishers behind

# The Self Journals of Science


transparent, communal, explorable

- an open archive
- providing open peer reviews and means to acknowledge them
- and a distributed overlay curation

# An example

SJS

Log in / Register | Tree of Knowledge | Search | Tutorials | About SJS

Priority
14 Who?
Prioritize

This article has reached scientific standards 4 /6 Who? Vote

This article still needs revisions 2 /6 Who? Vote

Add to my journal
Follow this article

Reviews 13
Views 14866
Curators 1

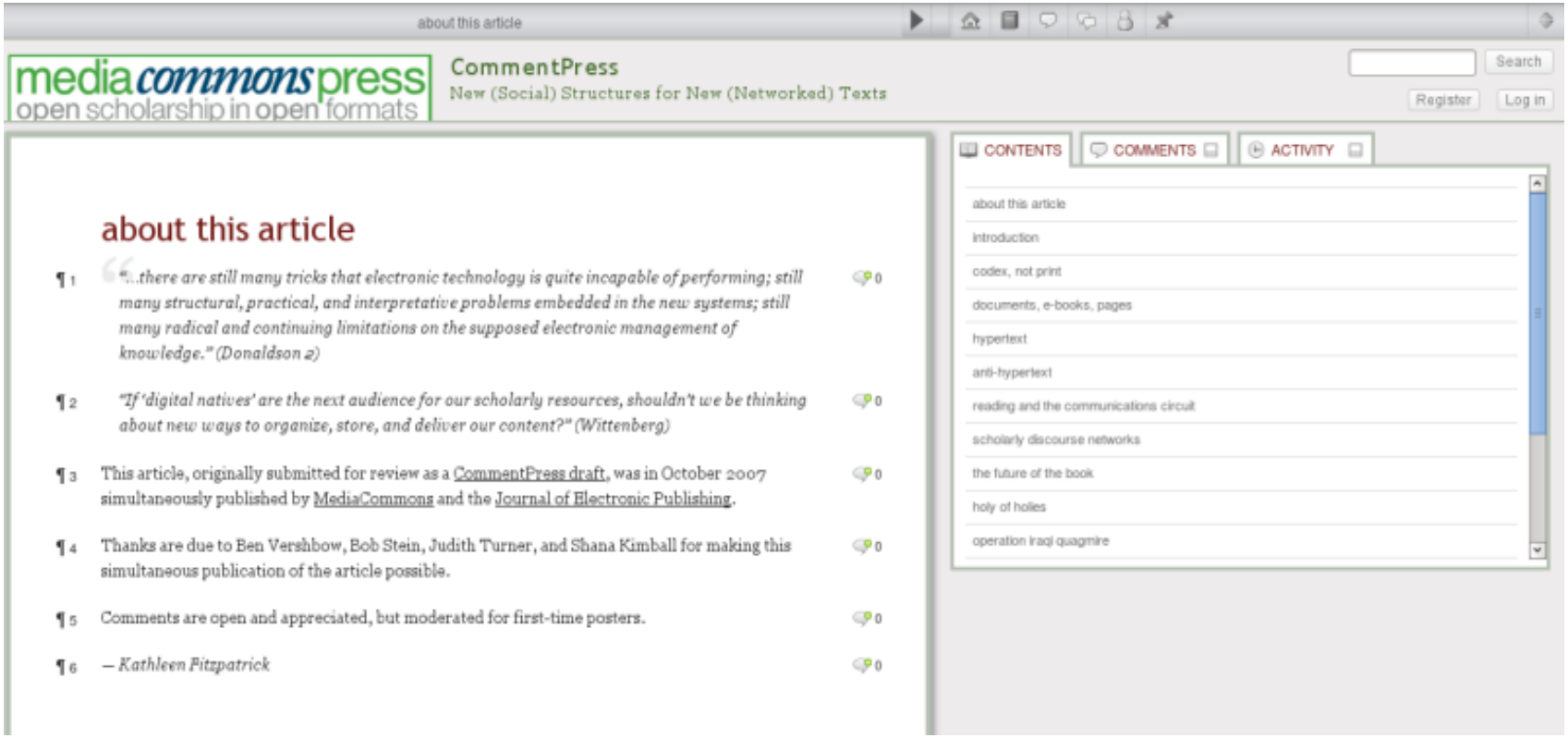
Download the pdf
Supplemental files

*Essay and Opinion*

## 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

# Analogical peer review in a digital medium ☺



# K. Fitzpatrick and the academy of the undead

Traditional peer review

- hinders the circulation of ideas
- excludes authors and the public from the conversation of science

Post-publication open peer review

- guarantees transparency, acknowledges reviewers, connects authors but ...
- it needs a collaborative community of knowledge

# For angelical intellects only?

## Academic intellects

- are assessed as individual authors
- are evaluated in the perspective of their products, not of their processes
- fear responsibility

# Anonymity is so comfortable

[Meyer, 2010]

Some cases may still justify anonymity, but they should be the exception, calling for a specific justification. Refereeing should be what it was before science publication turned into a business: **scientists giving their polite but frank opinion on the work of other scientists. Anonymity just encourages power games, back-stabbing and, worst of all, poor quality**: since non one can call your bluff, you are not encouraged to be a good referee.

# Richard Horton: "Much of the scientific literature, perhaps half, may simply be untrue"

**[Horton 2015] - The Lancet**

Afflicted by studies with small sample sizes, tiny effects, invalid exploratory analyses, and flagrant conflicts of interest, together with an obsession for pursuing fashionable trends of dubious importance, science has taken a turn towards darkness.

# Exemption from responsibility

[Pievatolo, 2016]

A publication-based research evaluation system transfers responsibility on reviewers protected by anonymity and on impersonal proprietary bibliometric algorithms
It produces irresponsible researchers ([Smaldino,McElreath 2016]) inclined to bibliometric fetishism.

# The rule of the game is gaming the rules

[Biagioli, 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**.

# Some examples

[Biswanger, 2014]

- Strategic citing and praising
- Conformism
- Rhetorical tricks
- Expert and citation networks
- Salami slicing
- Forgery and fraud ...

# To further dilute responsibility: the chemistry of crowdsourcing

Crowdsourced, parceled peer review: `http://ur1.ca/r1ybx`

The *Synlett* platform aggregates the judgments of 100 anonymous reviewers chosen by the editors.

# 2016: a disquieting symptom of health

THE NEW ATLANTIS
A JOURNAL OF TECHNOLOGY & SOCIETY

CHARLE
ECLIPSE
HUMAN EXTINCTION AND

CURRENT ISSUE | ARCHIVE | SUBSCRIBER SERVICES | ABOUT

## Two Cheers for the Retraction Boom

*Ivan Oransky, Adam Marcus*

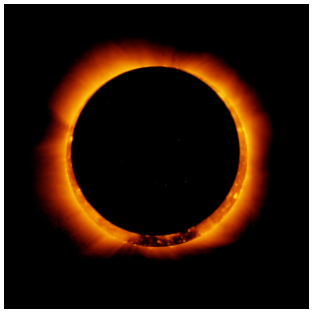
Between 2000 and 2010, the number of published papers in the sciences rose by 40 percent, from about 1 million per year to about 1.4 million. Over that same period, the number of retracted articles — the ultimate in academic take-backs — grew tenfold, from about 40 per year to about 400. The figure is now somewhere close to 700 papers retracted annually. Although retractions represent a small sliver of the total literature, accounting for roughly 0.05 percent of all articles, the remarkable increase in the retraction rate has been seen by many as a symptom of sickness

# Retraction Watch: "the published paper is not a sacred object"

Science: all that happens after being published ...

"It is understandable that scientists who know that their futures depend on their publication record would be loath to have that record marred with retractions. We need to replace these incentives with ones that reward **open data sharing, post-publication peer review**, and similar activities that reflect how we want science to work, encouraging honest efforts both to produce the best results and to correct one's own mistakes and those of others. sip

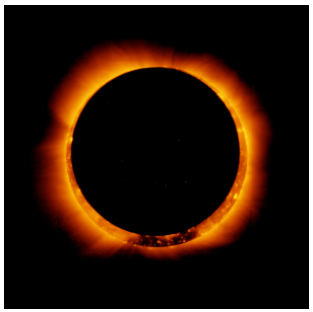
# A subversion from India: giving authors the ring of Gyges



## Disclosing the hidden, concealing the visible

1. by anonymizing published papers $\Longrightarrow$ to limit their quantity and to enhance their quality
2. by signing the referee reports $\Longrightarrow$ to make reviewers responsible and acknowledgeable
3. by leaving curation nominative $\Longrightarrow$ to make curators responsible and acknowledgeable
4. by evaluating researchers only by their words and deeds, not by their papers

# Putting evaluation under the eye of the public



Evaluating researchers by their words and deeds

1. by their teaching and mentoring ability
2. by their reviewing and curation works
3. by personal interviews

# Putting the ring of Gyges on the right fingers

- researchers as authors would be autonomous
- researchers as evaluators and discussants would be accountable

# Two inconclusive remarks

### Bhagavad Gita, 2.47

You have the right to work only but never to its fruits. Let not the fruits of action be your motive, nor let your attachment be to inaction.

### Max Weber, *Wissenschaft als Beruf*

Every scientific 'fulfilment' raises new 'questions'; it asks to be 'surpassed' and outdated. Whoever wishes to serve science has to resign himself to this fact.

# Science - as a process, not as a product

David Weinberger, *Too Big to Know*, Basic Books, 2011, p.106

"The media create the impression that science consists of a set of true beliefs. But [a truly open and] networked science [...] looks much more like the scientist's view of science than the media's view."

# RFC ☺

## Anonimo scientifico

http://btfp.sp.unipi.it/it/2016/10/ex-oriente-lux/

# CFP ☺

Open Science and Research Integrity

http://aisa.sp.unipi.it/attivita/iii-convegno-annuale/cfpiii/

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