This is water

A short course about scientific publishing – Part 1

Paolo Crosetto

DEMM · Via Conservatorio, Milano · 27-28 October 2025

How's the water?

What water?

On the menu

Motivation

Scientific publishing is the water we swim in.

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It is also under severe strain & undergoing radical changes:

Articles doubling every 5 years; New actors & countries; Advent of AI…

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We will try to

- understand it;
- observe current trends, and
- identify potential reforms.

Day 1: know the waters

- Getting to know each other
- Some definitions & semantics
- The shortest ever history of Scientific Publishing
- There are cracks everywhere – an anthology of publishing monsters
- Overview of the publishing system, 2022 AD
- Scientific Publishing Economics, 101

Day 2: learn how to swim

- Scientific Publishing Economics, 201
- Examples of a toxic market:
  - endogeny
  - discover & next
  - you get what you pay for
- Reform movements
  - What can *we* do? – individual actions
  - What can *we* do? – collective actions
  - What can *they* do? – institutions

Dramatis personæ

About me

Paolo Crosetto

- I am a researcher at INRAE, Grenoble, France

  French publis national research centre on agriculture and the environment, $\sim$ 3k
- I mainly do experimental economics

  (applied to risk, consumer behavior, choice architecture, food labeling, behavioral public policy)
- In transition from amateur to professional bibliometrician & *sleuth*

  (more about this later – if you wish to try this at home)

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- Here 27-31/10; all Thursdays and Fridays in November ’25

My coauthors in this line of work

Immunologist

Experimental economist

Seed technician

Anthropologist

- Mark A. Hanson
- Pablo Gómez Barreiro
- Dan Brockington

About you

We are going to learn from each other

- Different disciplines have starkly different publishing cultures
- Target journals, prestige metrics, acceptable delays
- Relative importance of different media, acceptable cost, reach
- Discipline are usually siloed, ignore other disciplines' norms

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So, what about you?

Setting the stage

roles, definitions, and some semantics

The key roles in scientific publishing

Publishers

Publisher for- or not-for-profit entity running journals and distributing them
(profit: Elsevier, Springer-Nature, Wiley, MDPI; non-profit: PLOS, Oxford Uni Press)

Learned Societies acting as publishers on their own account (Chemistry, . . .)

Scientists

Editor in charge selecting articles for publishers (sometimes paid)

Reviewer in charge of reviewing articles for editors (mostly for free)

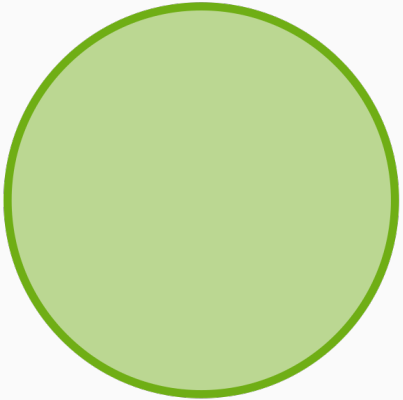
Author submitting articles to be published in journal (sometimes pays)

Funders

Funder private or more often public body financing research
(public: ANR, DFG, SNF, Universities; private: Gates Foundation, Wellcome Trust)

Behold the scientific publishing system

Publishers



Researchers

Funders

What does the system do?

What functions does the system fulfill?

for Scientists

- dissemination
- reputation
- sorting

for Publishers

- profits
- dissemination
- sustainability

for Funders

- selection
- prioritization
- public access

What do the different actors want?

What do different actors want from the system?

Scientists

- high reputation
- low effort
- stability

Publishers

- high reputation
- high quantity
- high revenue

Funders

- stability
- true signal
- low spending

An ongoing semantic shift: "Journal"

used to mean

A physical object with limited available space

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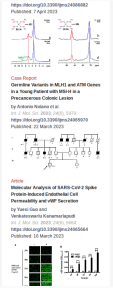
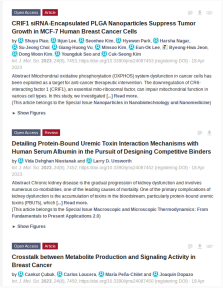
now it also means





CRIF1 siRNA-Encapsulated PLGA Nanoparticles Suppress Tumor Growth in MCF-7 Human Breast Cancer Cells

Detailing Protein-Bound Uremic Toxin Interaction Mechanisms with Human Serum Albumin in the Pursuit of Designing Competitive Binders

Crosstalk between Metabolite Production and Signaling Activity in Breast Cancer

A limitless electronic repository with a name

An ongoing semantic shift: "Publication"

used to mean

- a handful of journals
- long delays
- low acceptance rates
- free for authors

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- thousands of journals
- short delays
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and it also means

- preprint servers
- no delays
- no peer review
- no-one pays

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- A once-in-a-while issue
- About a special topic
- Strict editor control
- regular $>$ special

An ongoing semantic shift: "Special Issue"

used to mean

- A once-in-a-while issue
- About a special topic
- Strict editor control
- regular > special

now it also means

- A many-a-day issue
- About any topic
- Relaxed editor control
- special > regular

An ongoing semantic shift: "Business Model"

used to mean

- Many small journals
- Readers pay
- $ through subscription
- "*Polish your gems*"

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- Few mega-journals
- Authors pay
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- "*Get authors on board*"

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- Few mega-journals
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and it also means

- Online repositories
- no-one pays
- $ through public support
- "*Convince authors*"

Even more definitions & words

Subscription annual fee paid by universities to access copyrighted content

Open Access research papers are freely accessible by anyone

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Transformative Agreement a contract whereby a publisher pledges to transition its journal to OA in exchange for money

APC Article Processing Charges paid by authors of Open Access papers

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APC Article Processing Charges paid by authors of Open Access papers

Paper Mill a fraudulent scheme whereby fake papers are accepted and then position of authors in those papers sold for $

Sleuth self-appointed scientific integrity scholar

A *very* quick history of publishing

The good old days (1650s – 1950s)

Origins	*Philosophical Transactions of the Royal Society* (1665); letters, books.
Purpose	Dissemination of discoveries among scholars; not-for-profit, often managed by learned societies and academies.
Economics	Supported by membership dues and volunteer editorial work. Public *sometimes* steps in to cover losses.
Characteristics	Low circulation, limited by printing costs and postal distribution; prestige linked to scholarly societies, not to publishers.
Transition	By mid-20th century, high volume increased publishing costs and complexity, leading to commercial publishers.

Commercial Publishers and the Subscription Model (1960s–2010s)

Origins	Science expansion & rapid growth in journals + specialization
Purpose	Elsevier, Springer… professionalize production for $
Economics	Universities & libraries pay subscription fees; authors cede copyright
Characteristics	Proliferation of niche-covering journals; bundles with high fee; local monopoly pricing + rent extraction
Transition	Growing cost + inequalities across insitutions + double/triple dipping + internet fuels demand for open access.

The Open Access Era (2010s–present)

Origins Internet cuts cost & allows for cheap distribution + policy

Purpose Openly accessible research as a stated goal (Plan S)

Economics Universities & libraries pay subscription fees; authors cede copyright

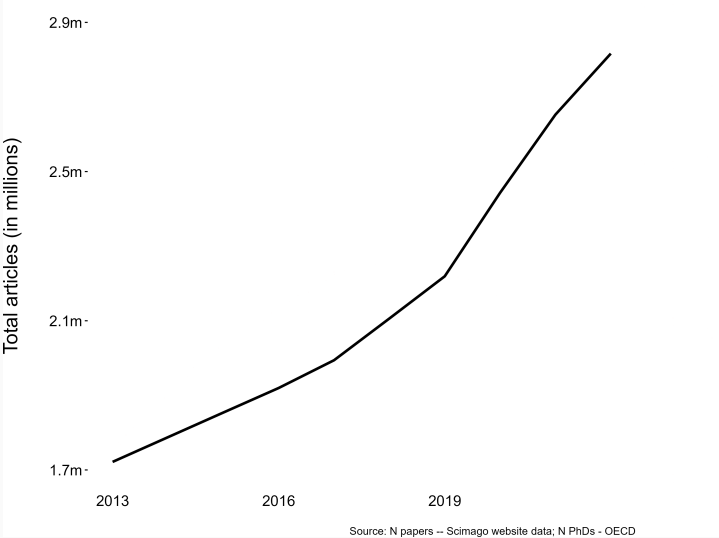
Characteristics A multitude of models:

- *Hybrid:* Journal hosts both OA & gated content (double-dipping)
- *Gold:* Author or funder pays an APC; article freely accessible.
- *Green:* Self-archiving in repositories.
- *Diamond:* Free to read and publish, institutionally supported.

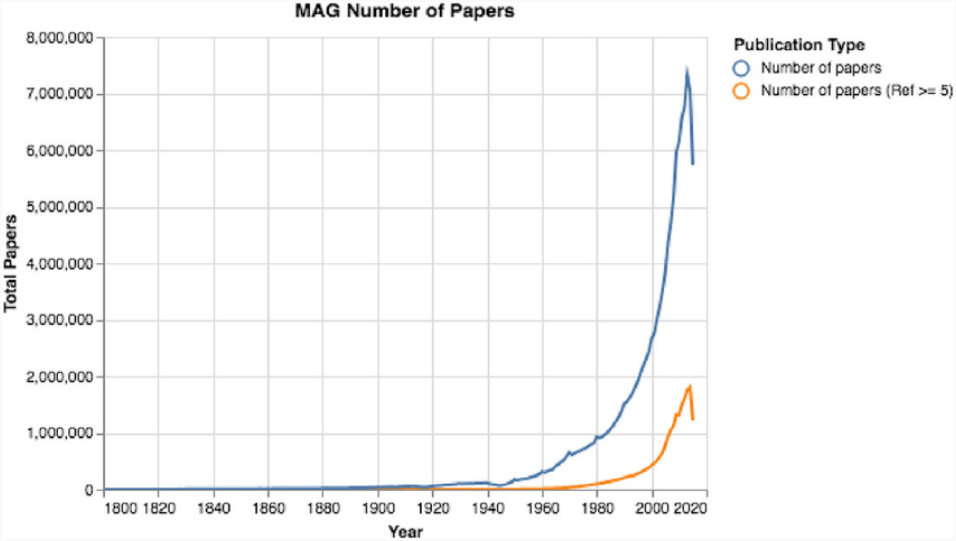
Transition Transformative agreements, preprints, open data, growing APC cost…

What is the state of the system now?

Academic publishing is undergoing an exponential growth

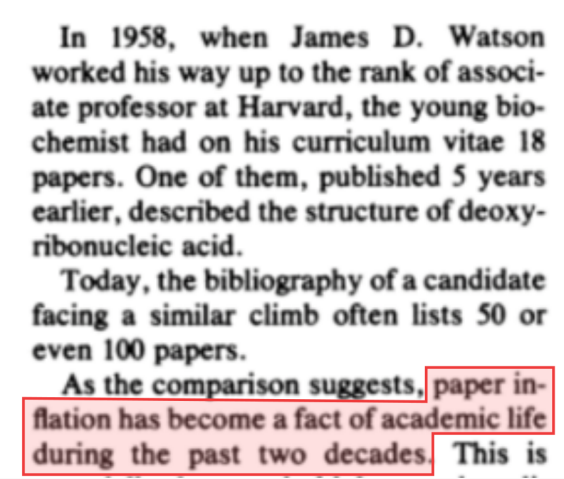


This is not news



Fire & Guestrin 2019

...and people have been complaining about it for a long time

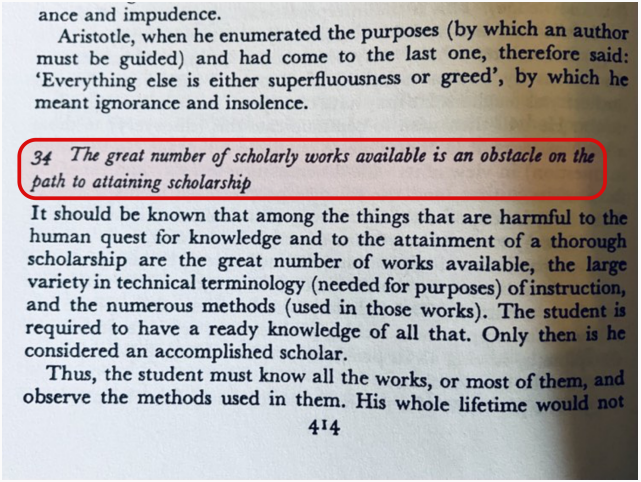


In 1958, when James D. Watson worked his way up to the rank of associate professor at Harvard, the young biochemist had on his curriculum vitae 18 papers. One of them, published 5 years earlier, described the structure of deoxyribonucleic acid.

Today, the bibliography of a candidate facing a similar climb often lists 50 or even 100 papers.

As the comparison suggests, paper inflation has become a fact of academic life during the past two decades. This is

Science, March 1981



ance and impudence.

Aristotle, when he enumerated the purposes (by which an author must be guided) and had come to the last one, therefore said: 'Everything else is either superfluousness or greed', by which he meant ignorance and insolence.

34 The great number of scholarly works available is an obstacle on the path to attaining scholarship

It should be known that among the things that are harmful to the human quest for knowledge and to the attainment of a thorough scholarship are the great number of works available, the large variety in technical terminology (needed for purposes) of instruction, and the numerous methods (used in those works). The student is required to have a ready knowledge of all that. Only then is he considered an accomplished scholar.

Thus, the student must know all the works, or most of them, and observe the methods used in them. His whole lifetime would not

414

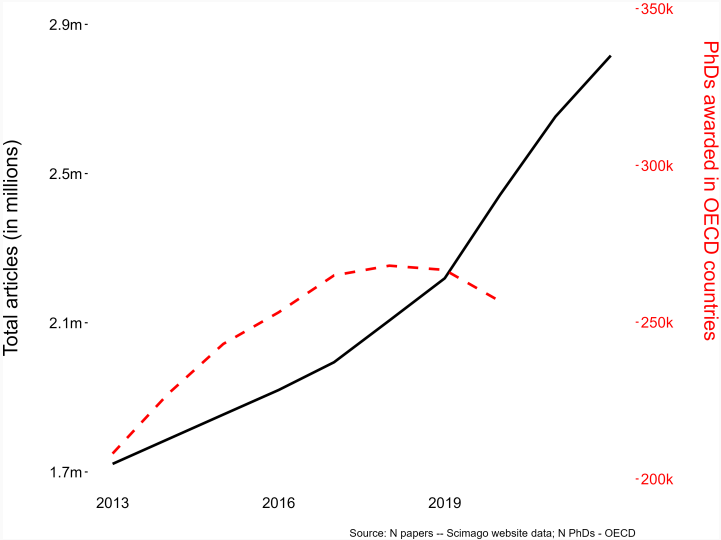
Ibn Khaldun, 1332-1406


OLD MAN YELLS AT CLOUD

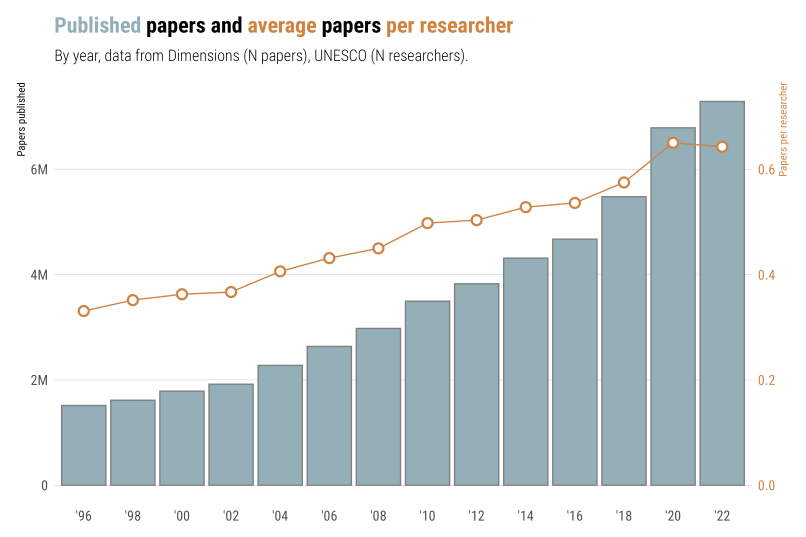
The growth of scientific articles is mostly a good thing

- More scientists around
- More funds for research
- Open Access: more results available to anyone
- Web tools: faster dissemination of ideas
- Lower file drawer effects
- More replications, robustness, reviews, meta-analyses

But the number of scientists has hit a limit



And we have more & more papers per scientist



We call this the strain on scientific publishing

The incentives at play generate

- pressure to publish on researchers
- huge rents to be exploited by publishers

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- pressure to publish on researchers
- huge rents to be exploited by publishers

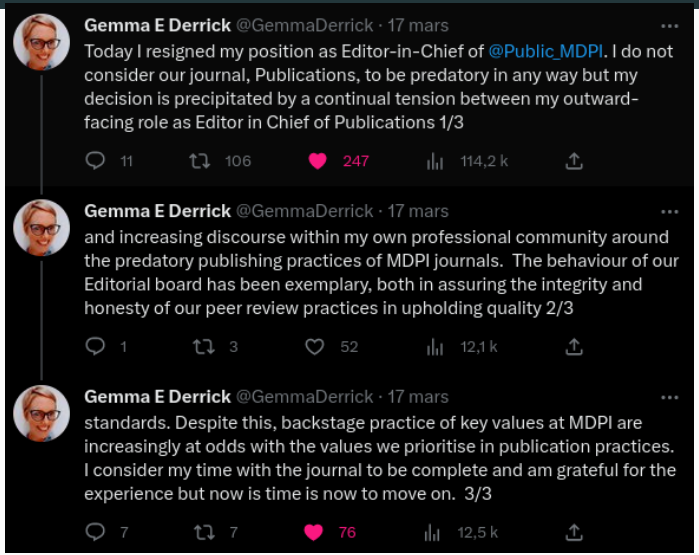
This puts strain on publishing:

- exponential growth
- widespread cracks
- fuel for unsustainable and dubious practices.

An anthology of cracks

or *a gallery of monsters*

Editors resign *individually*



Gemma E Derrick @GemmaDerrick · 17 mars

Today I resigned my position as Editor-in-Chief of @Public_MDPI. I do not consider our journal, Publications, to be predatory in any way but my decision is precipitated by a continual tension between my outward-facing role as Editor in Chief of Publications 1/3

11 106 247 114,2 k

Gemma E Derrick @GemmaDerrick · 17 mars

and increasing discourse within my own professional community around the predatory publishing practices of MDPI journals. The behaviour of our Editorial board has been exemplary, both in assuring the integrity and honesty of our peer review practices in upholding quality 2/3

1 3 52 12,1 k

Gemma E Derrick @GemmaDerrick · 17 mars

standards. Despite this, backstage practice of key values at MDPI are increasingly at odds with the values we prioritise in publication practices. I consider my time with the journal to be complete and am grateful for the experience but now is time is now to move on. 3/3

7 7 76 12,5 k

Editors resigning
over bad publisher practices

Editors resign *en masse*

Editors resigning over high fees

The rise of Paper Mills...

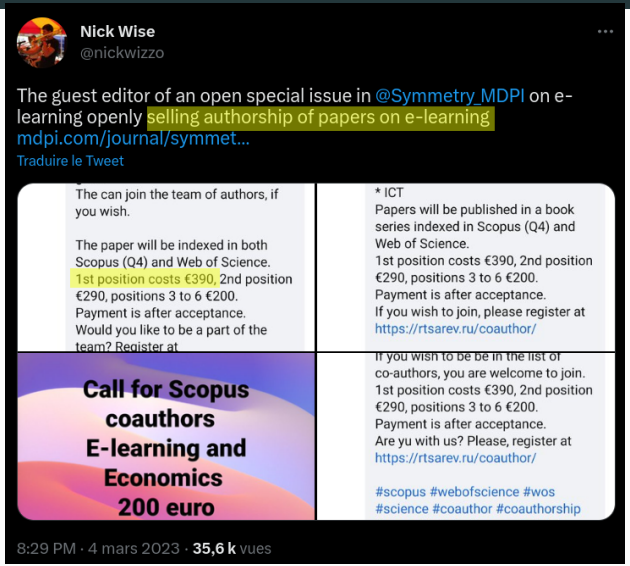
Paper mills
mass producing
fake articles

NEWS FEATURE | 23 March 2021

The fight against fake-paper factories that churn out sham science

Some publishers say they are battling industrialized cheating. A *Nature* analysis examines the 'paper mill' problem – and how editors are trying to cope.

. . . that then proceed to sell papers



Authorship sales rings

Problems arise also on the side of authors

Stunningly prolific authors

EL PAÍS

ce & Tech

SILICON VALLEY · YOUTUBE ·

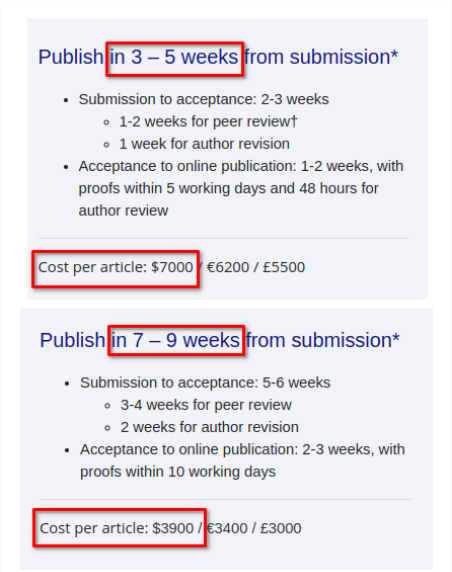
SCIENTIFIC ETHICS >

One of the world's most cited scientists, Rafael Luque, suspended without pay for 13 years

The prolific chemist, who has published a study every 37 hours this year, has been sanctioned by the University of Córdoba over his research work for other institutions in Russia and Saudi Arabia

And of publishers

Pay to get faster through peer-review



And of peer reviewers

PHR Public Health Reviews

CiteScore 9.6 How to publish Submit

EDITORIAL

Public Health Rev, 17 November 2022
https://doi.org/10.3389/phrs.2022.1605407

Check for updates

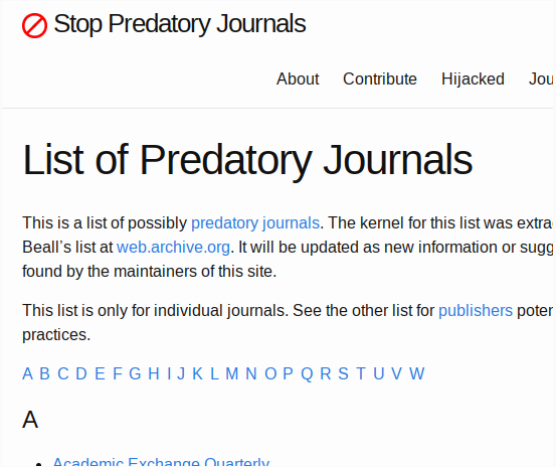
«I Do Not Have Time»—Is This the End of Peer Review in Public Health Sciences?

Nino Künzli[1,2,3]*, Anke Berger[1,3], Katarzyna Czabanowska[4], Raquel Lucas[5], Andrea Madarasova Geckova[6], Sarah Mantwill[7] and Olaf von dem Knesebeck[8]

Editors unable to find referees

In reaction, authors set up white or black lists

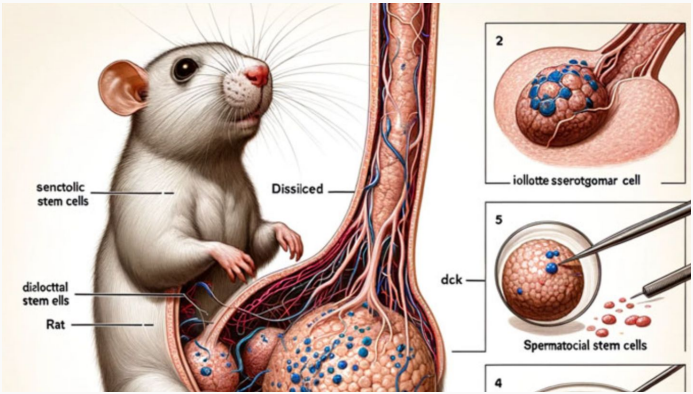
Dubious but popular
lists of predatory journals



and self-appointed watchdogs police the market

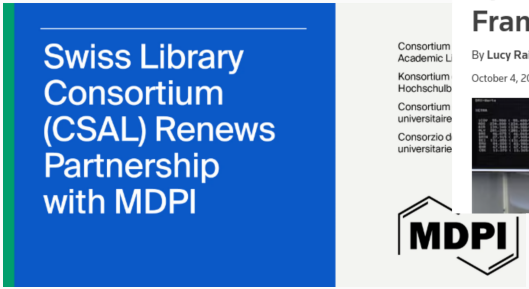
Mega-journals being delisted from WoS

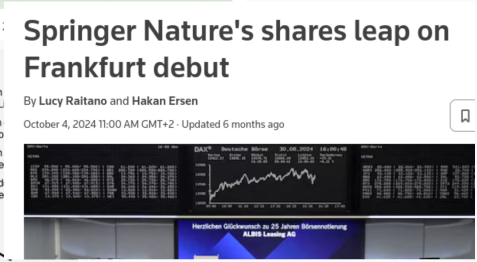
. . . in the face of growing AI concerns



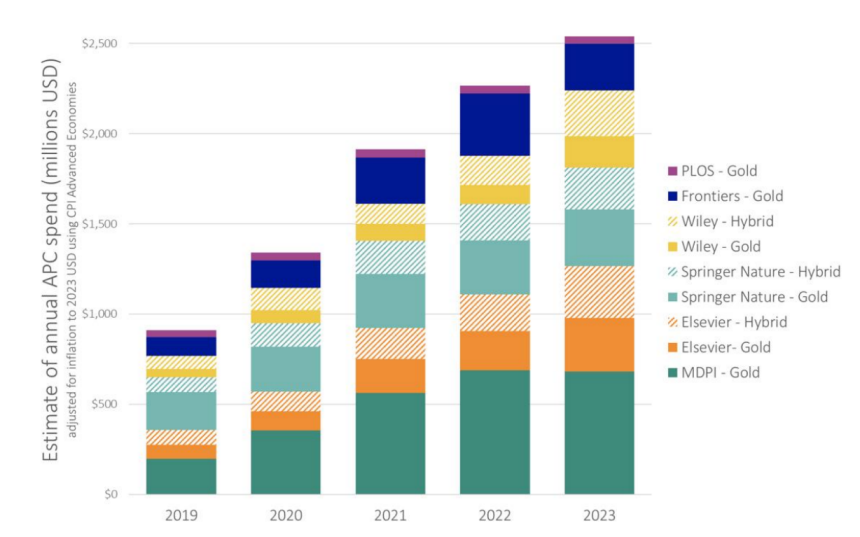
All this before
the 2023 AI explosion

. . . and yet the system thrives. . .





. . . and it's not cheap



How to make sense of all this?

The strain article

Quantitative Science Studies

Issues Online Early About Submit

Volume 5, Issue 4
Fall 2024

Next Article ›

Article Contents

Abstract

November 01 2024

The strain on scientific publishing

Mark A. Hanson, Pablo Gómez Barreiro, Paolo Crosetto, Dan Brockington

Check for updates

Author and Article Information

Quantitative Science Studies (2024) 5 (4): 823–843.

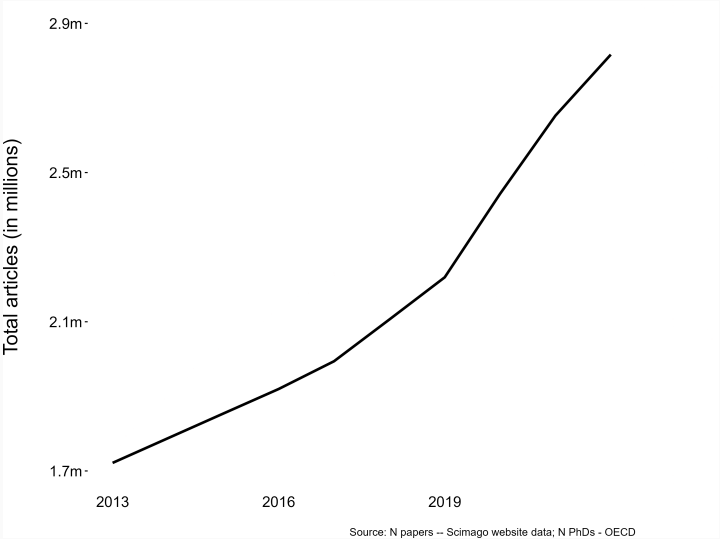
https://doi.org/10.1162/qss_a_00327 CR Article history

Cite PDF CR Permissions Share Views

Abstract

Scientists are increasingly overwhelmed by the volume of articles being published. The total number of articles indexed in Scopus and Web of Science has grown exponentially in recent years; in 2022 the article total was ~47% higher than in 2016, which has outpaced the limited growth—if any—in the

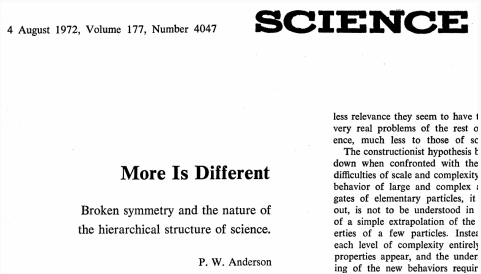
Which trends and threats hide behind this exceptional growth?



More is different

Growth is not more of the same:
growth means change.

- new practices
- new business strategies
- new incentives
- new constraints
- new meanings



4 August 1972, Volume 177, Number 4047 SCIENCE

More Is Different

Broken symmetry and the nature of the hierarchical structure of science.

P. W. Anderson

less relevance they seem to have t
very real problems of the rest o
ence, much less to those of sc
The constructionist hypothesis b
down when confronted with the
difficulties of scale and complexity
behavior of large and complex a
gates of elementary particles, it
out, is not to be understood in
of a simple extrapolation of the
erties of a few particles. Instea
each level of complexity entirely
properties appear, and the under
ing of the new behaviors requir

Our analysis:

Understanding the strain put on the system

by evolving publishers practices

Analysis plan

We single out five indicators of strain on the system:

- Number and size of journals
- Number and role of Special Issues
- Turnaround times
- Rejection rates
- Impact Factor inflation

None of them is critical *per se*

together they indicate strain imposed by publishers

Data sources

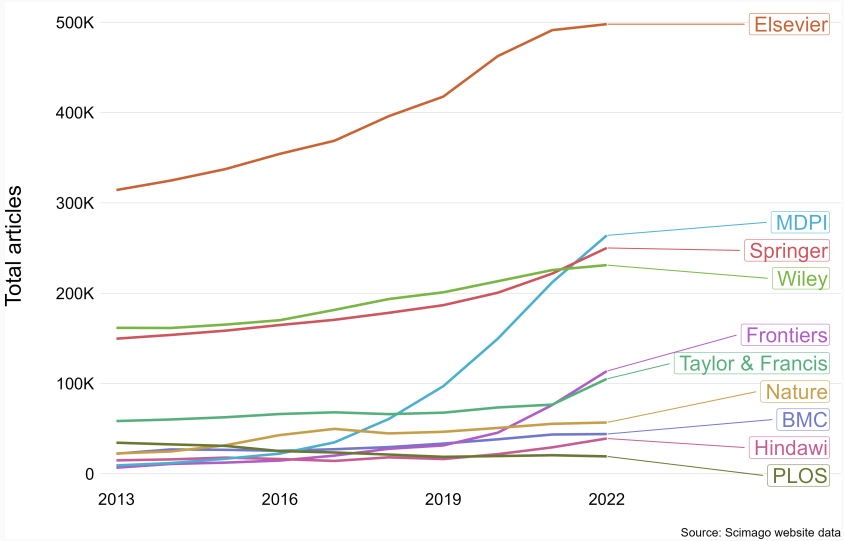
We exploit data coming from various sources:

- A full scrape of the Scimago Journal Rankings database
  used for: comparisons across publishers, IF, SJR rank...
- OECD and US NSF data
  used for: number of PhDs awarded per year
- Web scrape of MDPI, Frontiers, Hindawi, PLoS
  used for: turnaround times, special issues
- First hand data from publisher reports and websites
  used for: rejection rates

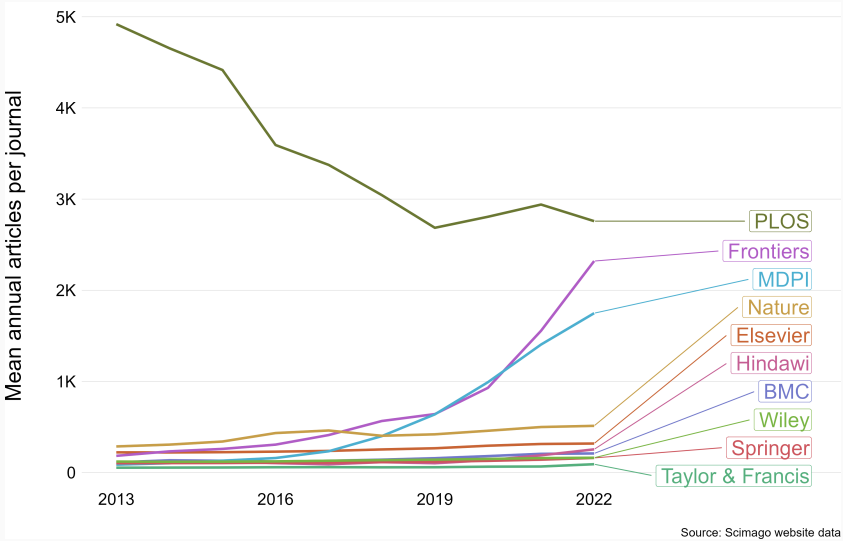
The strain paper at a glance

Number of articles & journal size

The rise of new publishers

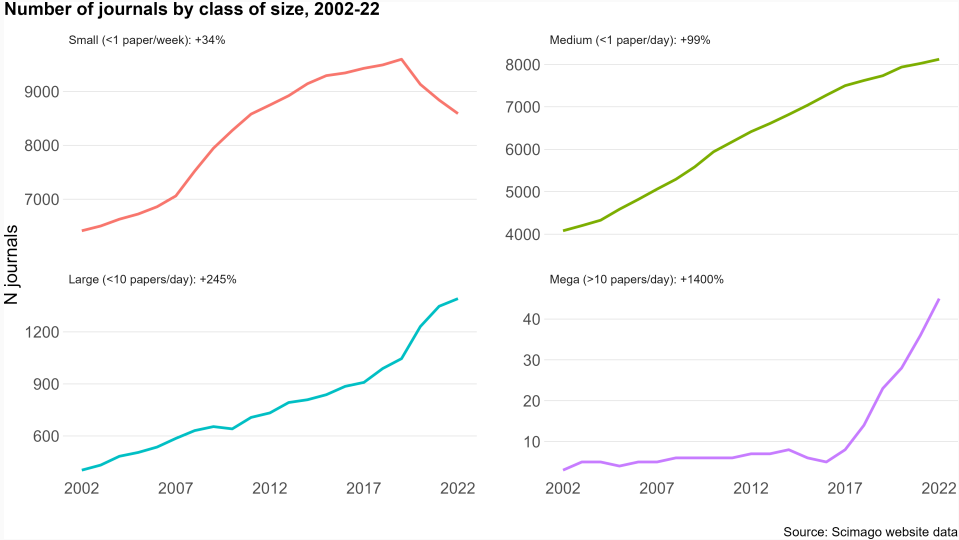


Bigger journals



Source: Scimago website data

The rise of mega-journals



What's going on?

Trends:

- Growth means concentration, especially for new players

Why?

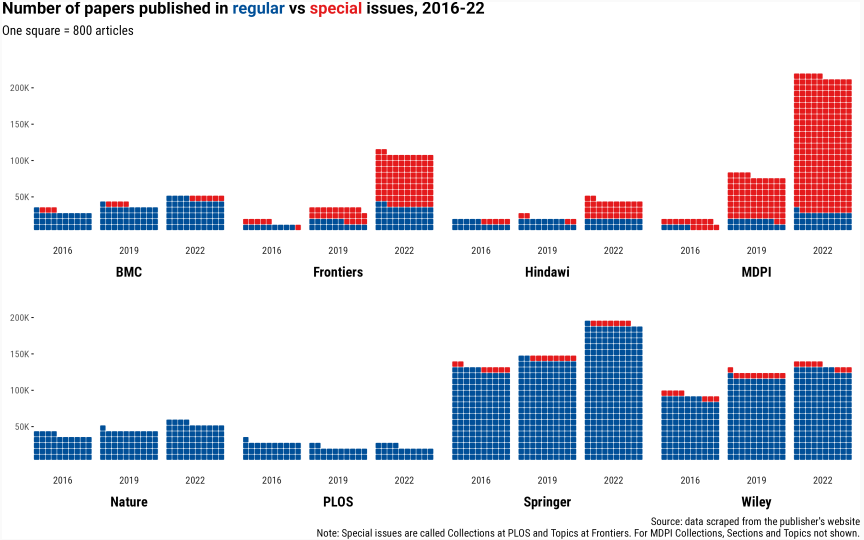
- Scientists tend to flock to journals with high reputation
- Hard to set up, but if you have one, exploit it

Threats

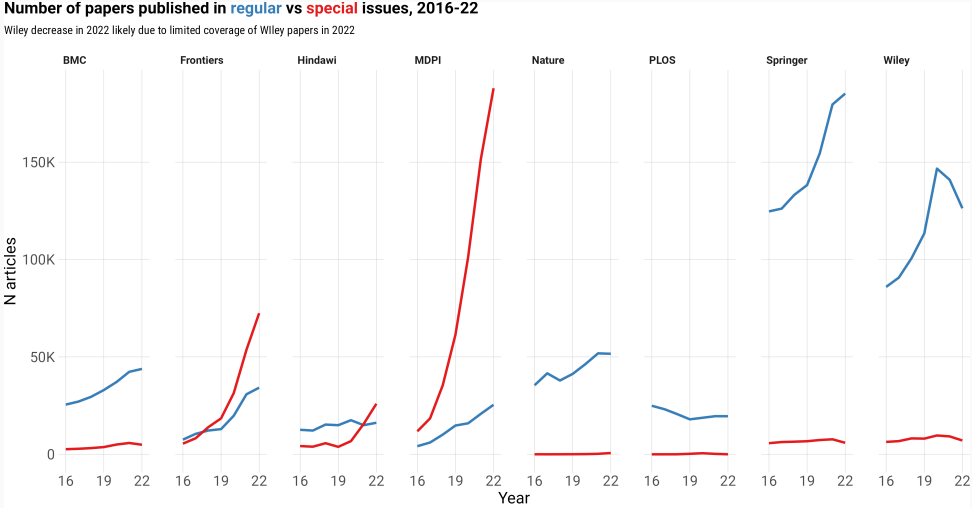
- How much can a journal inflate before it loses reputation?
- Risk of instability of quality signals

The role of special issues

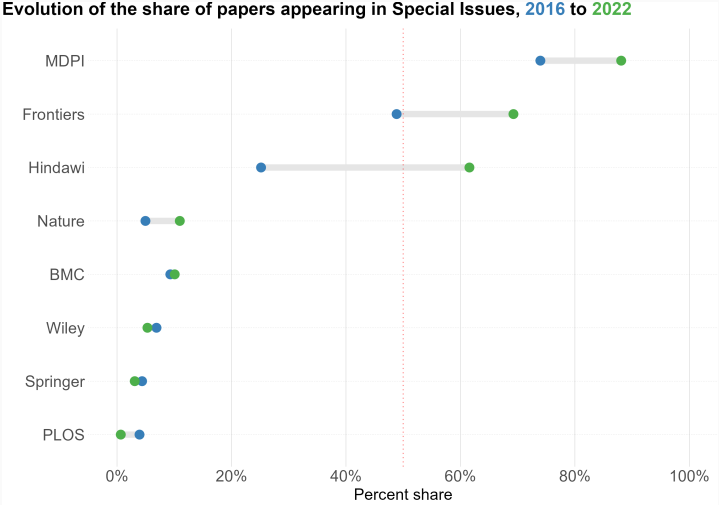
Not so special after all



Not so special after all



Journals at some OA publishers are mostly special issues



Source: data scraped from the publishers' website
Special issues are called Collections at PLOS and Topics at Frontiers. For MDPI Collections, Sections and Topics not shown.

What's going on?

Trends:

- SI as a fantastic engine of growth for big OA publishers

Why?

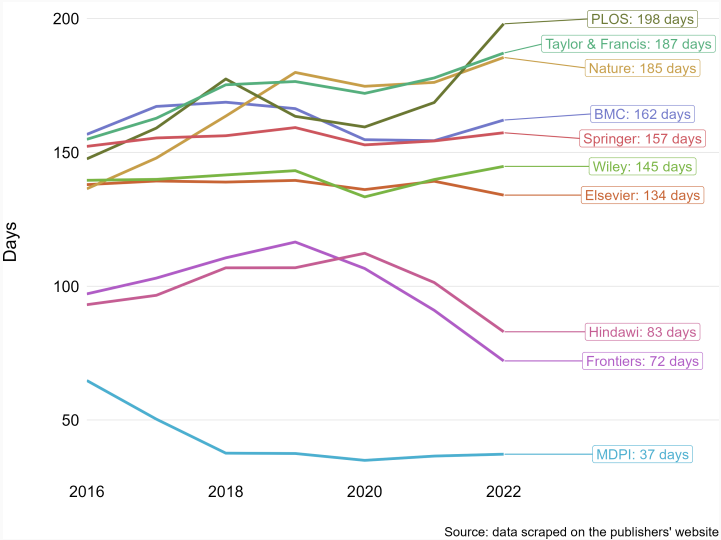
- Mobilization of an army of guest editors & their networks

Threats

- Less control increases chance of exploitation by authors
- Potential crisis of the SI model (Hindawi, IJERPH delisting)

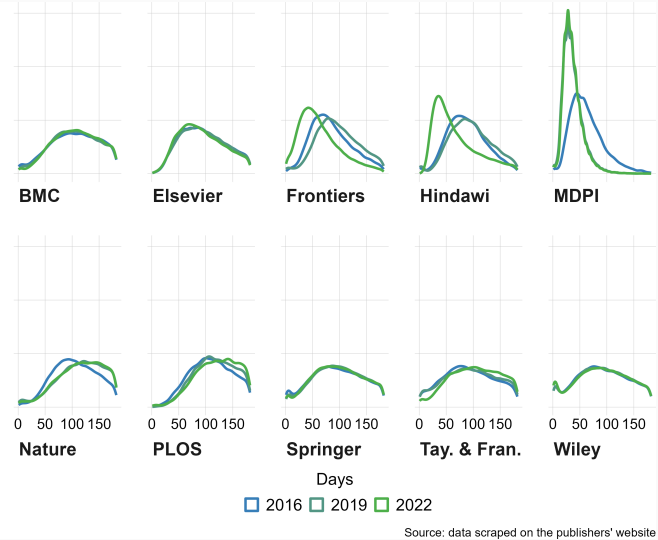
Turnaround times

Turnaround times have decreased for all for-profit OA publishers



Source: data scraped on the publishers' website

Turnaround times are getting more homogeneous



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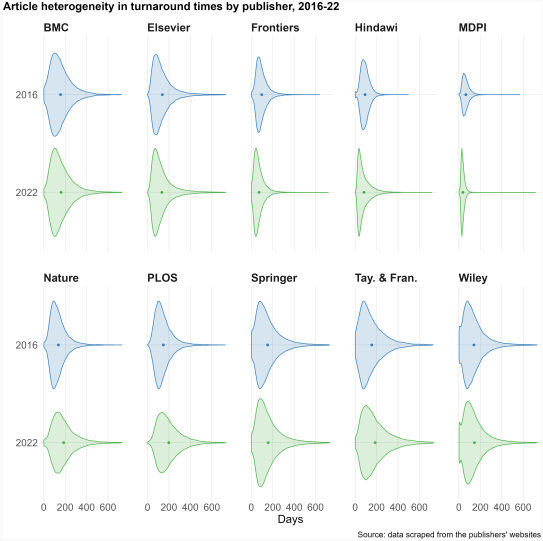
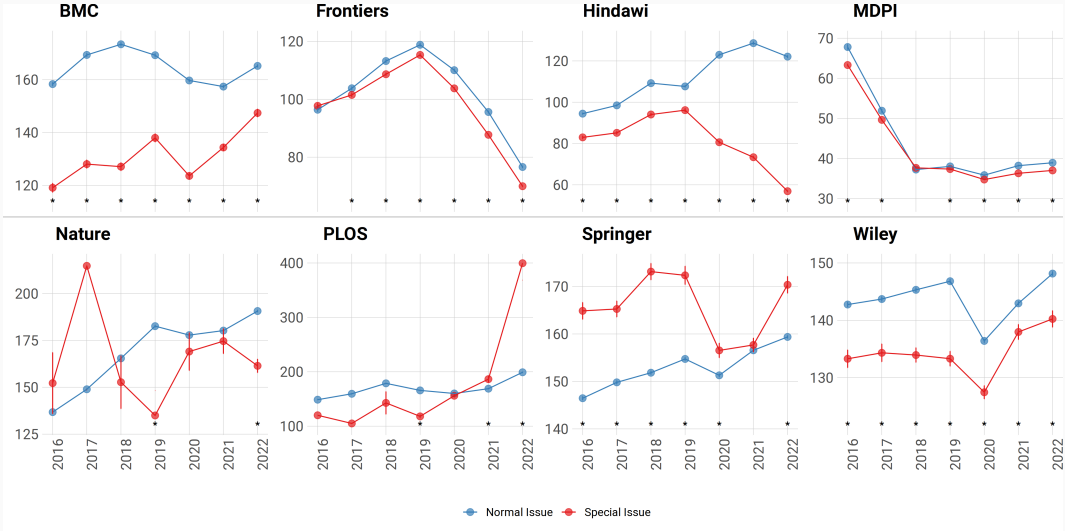


Lower TATs for Special Issues



Normal & Special Issues turnaround times per year and publisher. * Denotes significant differences (at 5%)

What's going on?

Trends:

- TAT can be due to inefficiencies – good that they go down

Why?

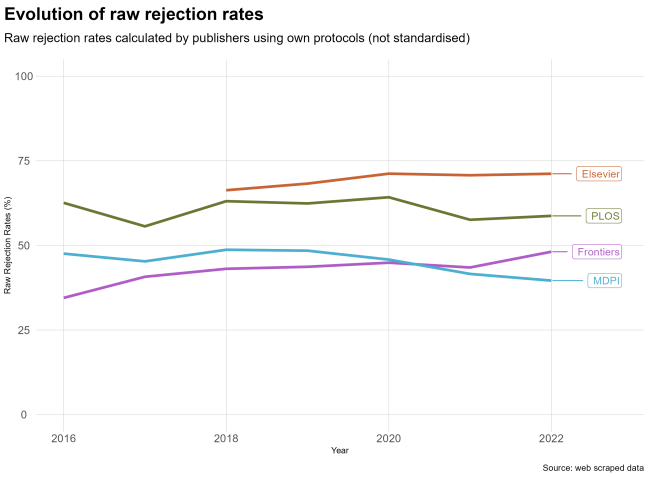
- Convergence of authors & OA publishers incentives

Threats

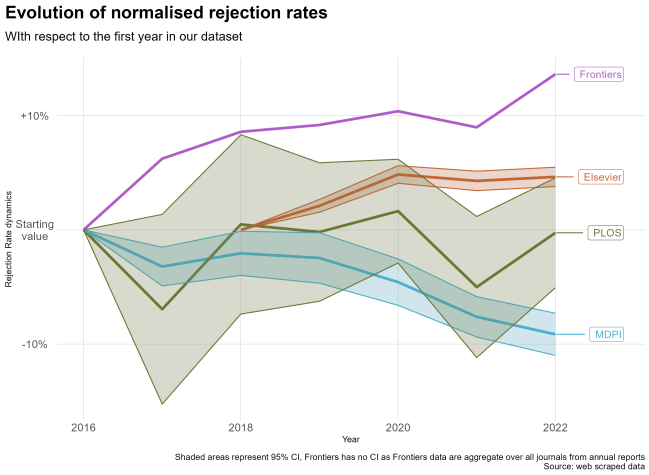
- Lower TAT must still allow for proper peer review
- Some TAT so low, it casts doubts on quality

Rejection rates

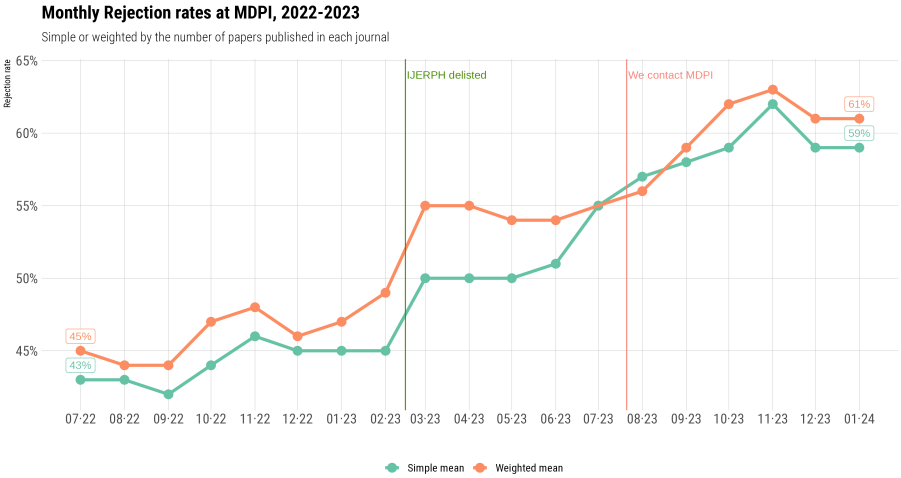
Rejection rates: absolute values



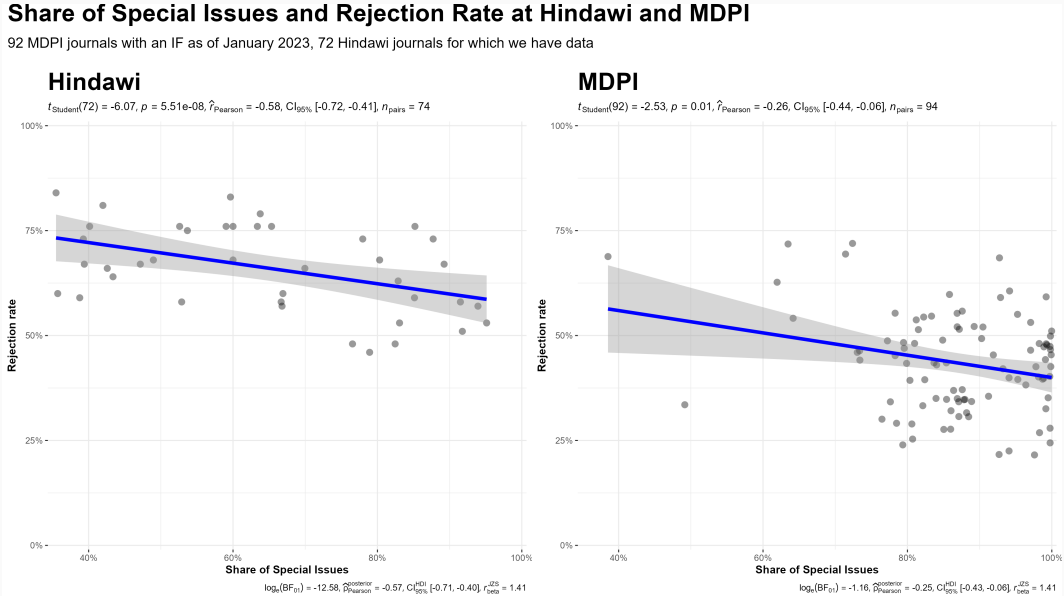
Rejection rates: normalized



To be fair: RR at MDPI on the rise since 2023



More SIs, less rejections



What's going on?

Trends:

- Rejection rates are decreasing at some key publishers
- Increasing at others
- Very little data

Why?

- Convergence of authors & OA publishers incentives

Threats

- Lower rejection rates might mean lower quality
- Risk of instability of quality signals

Impact Factor inflation

Indicators of impact: Impact factor, Scimago Journal Rank

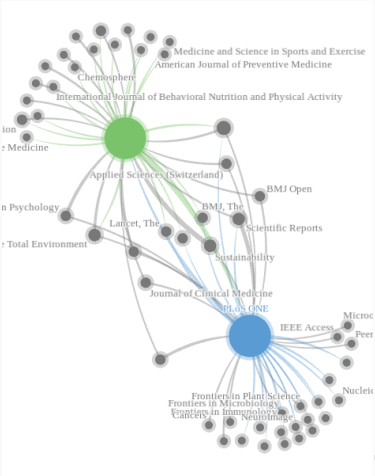
We measure Impact Factor Inflation as the ratio of IF to SJR

Impact Factor:

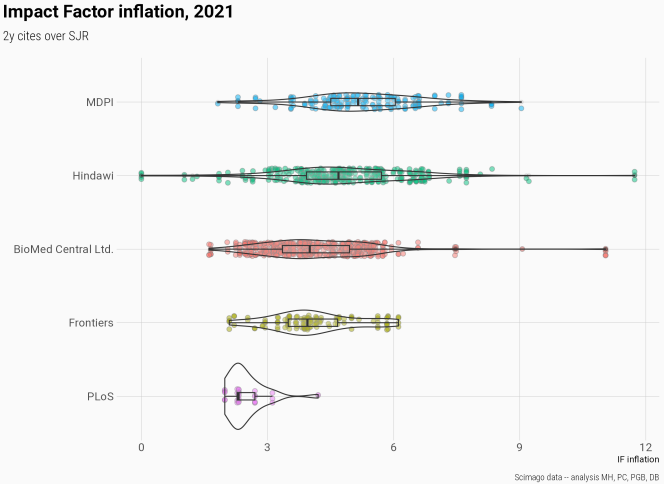
- cites/document at N years
- easily gamed

SJR: citation network counts

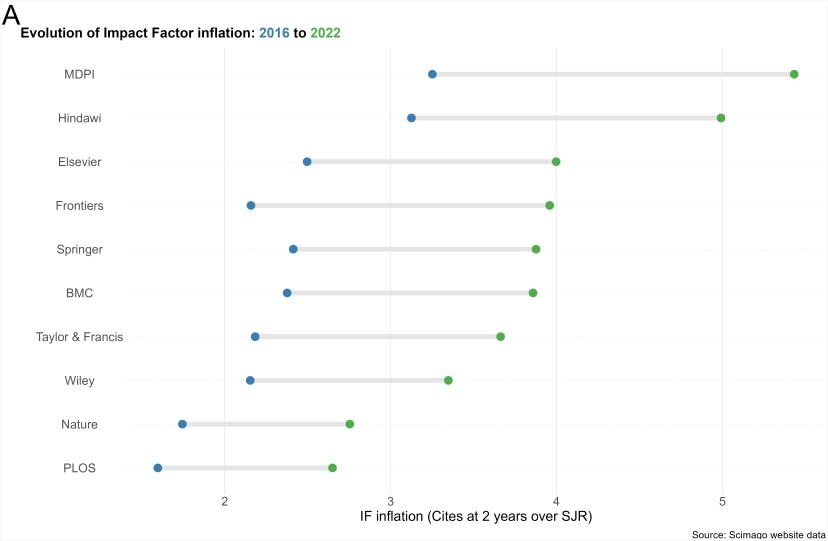
- Limits prestige from single source
- More prestige if cited by relevant journals
- Normalizes for field size
- Less easily gamed



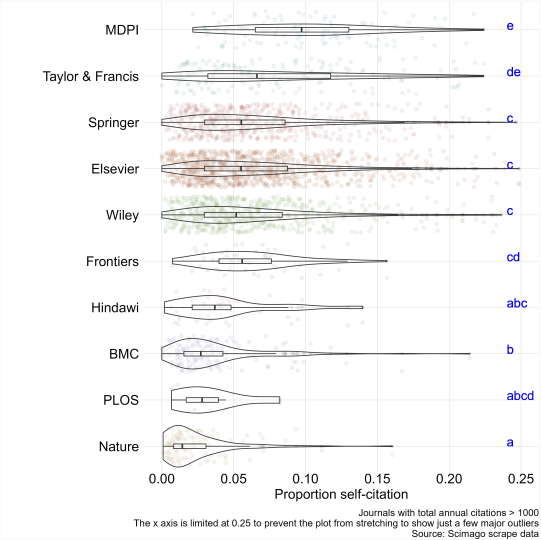
IF inflation 2021: some publishers



Evolution of IF inflation



IF inflation: why? Self-cites



What's going on?

Trends:

- IF is inflating – more so at some publishers

Why?

- Goodhart's law: *When a measure becomes a target, it ceases to be a good measure*

Threats

- Risk of instability of quality signals

At a glance

Strain indicators at a glance: 2022 and evolution 2016-22

	2022					Change 2016-22				
	TOTAL ARTICLES	SHARE SPECIAL ISSUE	TURNAROUND TIME (DAYS)	REJECTION RATE	IMPACT INFLATION	TOTAL ARTICLES	SHARE SPECIAL ISSUE	TURNAROUND TIME (DAYS)	REJECTION RATE	IMPACT INFLATION
Overall	2816k	38%	116	62%	3.3	+47%	+27pp	-23	-1pp	+1.1
Elsevier	498k	--	134	71%	4.0	+41%	--	-4	+5pp*	+1.5
MDPI	264k	88%	37	40%	5.4	+1080%	+14pp	-28	-8pp	+2.2
Springer	250k	3%	157	--	3.9	+52%	-1pp	+5	--	+1.5
Wiley	231k	5%	145	--	3.3	+36%	-2pp	+5	--	+1.2
Frontiers	114k	69%	72	48%	4.0	+675%	+20pp	-25	+14pp	+1.8
Taylor & Francis	105k	--	--	--	3.7	+59%	--	--	--	+1.5
Nature	57k	11%	185	--	2.8	+32%	+6pp	+49	--	+1
BMC	44k	10%	162	--	3.9	+73%	+1pp	+5	--	+1.5
Hindawi	39k	62%	83	74%	5.0	+139%	+36pp	-10	+3pp°	+1.9
PLOS	19k	1%	198	59%	2.6	-23%	-3pp	+50	-4pp	+1.1

Want to know more? the strain explorer

Find all indicators journal by journal here

Click on this link

Making sense of it all
some basic *economics* of publishing

A strange market – apples and papers

The market for apples

Farmers produce apples and sell them to middlemen

Distributors buy apples from producers and distribute them

Consumers buy apples from middlemen

Norms and standards are set and policed by the state

Certification can be obtained also from private companies

Prices are freely set on the market and regulate demand & supply

Competition among farmers, distributors, certifiers lowers prices

A strange market – apples and papers

The market for papers

Scientists produce papers for free, as a byproduct of their work

Publishers get papers for free and distribute them at high price

Publishers are paid to distribute the papers by scientists

Readers are also scientists, and fees are paid by the state

Readers get papers for free

Norms and standards are set by many and policed by no-one

Referees are also scientists, and work for free

Prices are set by publishers according to how much rent they can extract

Competition does not really exist

When is a paper really *published*? The story of the strain paper

Aug 23	paper is finished & sent to publishers for comments
Oct 23	rejected by *Science* & PNAS ("not general interest, sorry")
Nov 23	paper already has $\sim$ 10 citations, $\sim$ 1*M* Twitter views
Nov 23	paper sent to QSS
Apr 24	paper reaches 20 citations
Jun 24	revision sent to QSS
Jul 24	paper accepted at QSS – not yet online
Sep 24	paper proofs received & reworked
Nov 24	provisional pdf paper online – DOI assigned
Feb 25	final version on QSS website
Apr 25	paper reaches 100 citations
Sep 25	paper reaches 200 citations

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Summing up

- the paper circulated online as a *preprint* since August 23
- it was read and shared and cited *before* it was "published"
- it changed *very little* from submitted to accepted version

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Why did we have to *publish* it? What did we gain? We gained a badge of quality

A market for reputation

Scientific publishing is a market for reputation

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It does not matter

- who writes papers (scientists)
- who evaluates papers (scientists)
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What matters is **who owns the reputation badges**

and that's (mostly) the **the publishers**

Monopolistic competition and rents

Do publishers compete with one another?

- in general, they do (they all sell reputation)
- but *there is only one Nature* (or a few)

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- You could in *theory* create a second Nature
- but network effects and coordination problems work against you
- so you don’t. Nature is Nature

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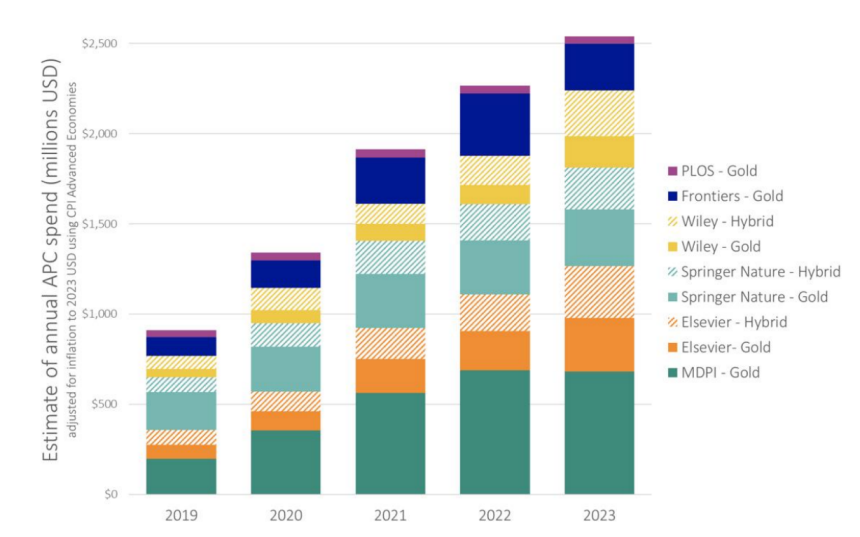
(They know it: APCs in Nature are £9190/$12690/€10690)

Rent extraction

Owning and running a journal with a good reputation is a *rent*

- Erodes only slowly with time if at all
- Hard for competitors to attack it
- Price-inelastic consumers and producers (scientists)
- So renters have market power and will price as high as they can
- while they face low and decreasing cost
- Profits!

This is why the costs keep growing



and profits are *exceptionally* high

Academic publishers compared to 30 largest companies based on 2024 revenue

Revenue and profit in million USD, from consolidated revenue. Companies sorted by profit margin.

	HEADQUARTERS	EMPLOYEES	REVENUE	PROFITS	MARGIN
Academic publishing · NAICS 511 · Mean industry net profit margin: 12%					
					Mean: 34%
RELX	United Kingdom	36,400	12,057	4,088	**33%**
└ *Elsevier*	United Kingdom	9,700	3,899	1,497	**38%**
Informa	United Kingdom	11,400	4,542	1,271	**27%**
└ *Taylor & Francis*	United Kingdom	11,000	892	327	**36%**
Springer Nature Group	Germany	9,092	1,998	554	**27%**
└ *Springer Nature Research Segment*	Germany	6,125	1,529	488	**31%**
Wiley	United States	6,400	1,042	331	**31%**
MDPI	Switzerland	6,650	--	--	**--**
Frontiers	Switzerland	1,440	--	--	**--**

Industry net profit margins and industry classification obtained from Dow Jones Factiva Industry Snapshot. List of largest companies obtained from Wikipedia, revenues and profits (in million USD) and number of employees extracted from annual financial reports and converted to USD if necessary.
Source: https://en.wikipedia.org/wiki/List_of_largest_companies_by_revenue
Mean 2024 average exchange rates for USD used: GBP: 1.2781; EUR 1.0822; RMB: 0.1393; JPY: 0.0066; NTD: 0.0312

really high: more than IT!

Academic publishers compared to 30 largest companies based on 2024 revenue

Revenue and profit in million USD, from consolidated revenue. Companies sorted by profit margin.

	HEADQUARTERS	EMPLOYEES	REVENUE	PROFITS	MARGIN
Information technology · NAICS 334 · Mean industry net profit margin: 27%					
					Mean: 29%
Microsoft	United States	228,000	245,122	88,136	**35%**
Alphabet	United States	183,323	350,018	100,118	**28%**
Apple	United States	164,000	391,035	93,736	**23%**

Industry net profit margins and industry classification obtained from Dow Jones Factiva Industry Snapshot. List of largest companies obtained from Wikipedia, revenues and profits (in million USD) and number of employees extracted from annual financial reports and converted to USD if necessary.
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really high: more than Oil & Gas!

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	HEADQUARTERS	EMPLOYEES	REVENUE	PROFITS	MARGIN
Oil and gas · NAICS 21111 · Mean industry net profit margin: 21%					
					Mean: 8%
Saudi Aramco	Saudi Arabia	75,118	480,446	106,246	**22%**
ExxonMobil	United States	60,900	349,585	35,063	**10%**
Chevron	United States	39,742	193,414	17,611	**9%**
TotalEnergies	France	102,887	241,550	18,264	**7%**
China National Petroleum Corporation	China	1,000,800	436,875	28,677	**6%**
Shell	United Kingdom	96,000	289,029	16,521	**5%**
China Petrochemical Corporation	China	355,952	428,286	20,805	**4%**
BP	United Kingdom	100,500	194,629	6,782	**3%**

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really high: more than Pharma!)

Academic publishers compared to 30 largest companies based on 2024 revenue

Revenue and profit in million USD, from consolidated revenue. Companies sorted by profit margin.

	HEADQUARTERS	EMPLOYEES	REVENUE	PROFITS	MARGIN
Pharmaceuticals · NAICS 3254 · Mean industry net profit margin: 14%					
					Mean: 0%
CVS Health	United States	300,000	372,809	4,614	**1%**
McKesson	United States	51,000	359,051	3,481	**0%**
Cencora	United States	46,000	293,959	1,509	**0%**
Cardinal Health	United States	48,900	222,578	1,561	**0%**

Industry net profit margins and industry classification obtained from Dow Jones Factiva Industry Snapshot. List of largest companies obtained from Wikipedia, revenues and profits (in million USD) and number of employees extracted from annual financial reports and converted to USD if necessary.
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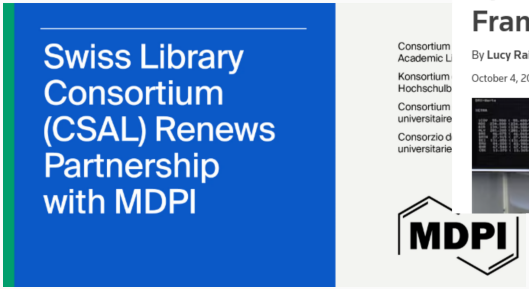
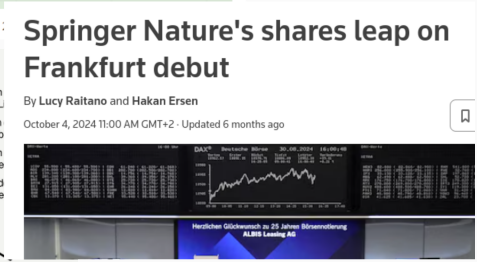
and is why publishers share keep rising in markets. . .





. . . to be continued

Tomorrow: learn how to swim

- Scientific Publishing Economics, 201
- Examples of a toxic market:
  - endogeny
  - discover & next
  - you get what you pay for
- Reform movements
  - What can *we* do? – individual actions
  - What can *we* do? – collective actions
  - What can *they* do? – institutions