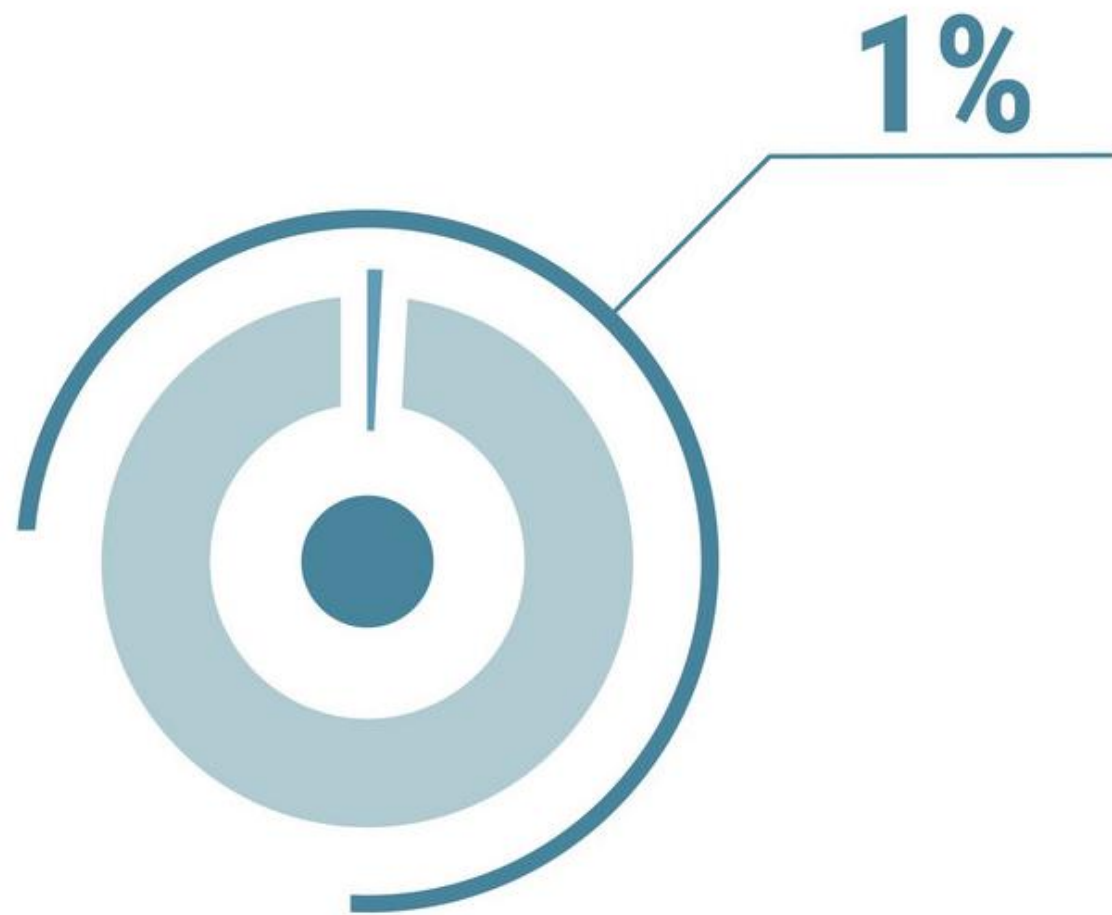


Science publishing: what's next?

Luca De Fiore, Il Pensiero Scientifico Editore

European association of science editors, Italian chapter



The state of scientific publishing
today has never been
more precarious.

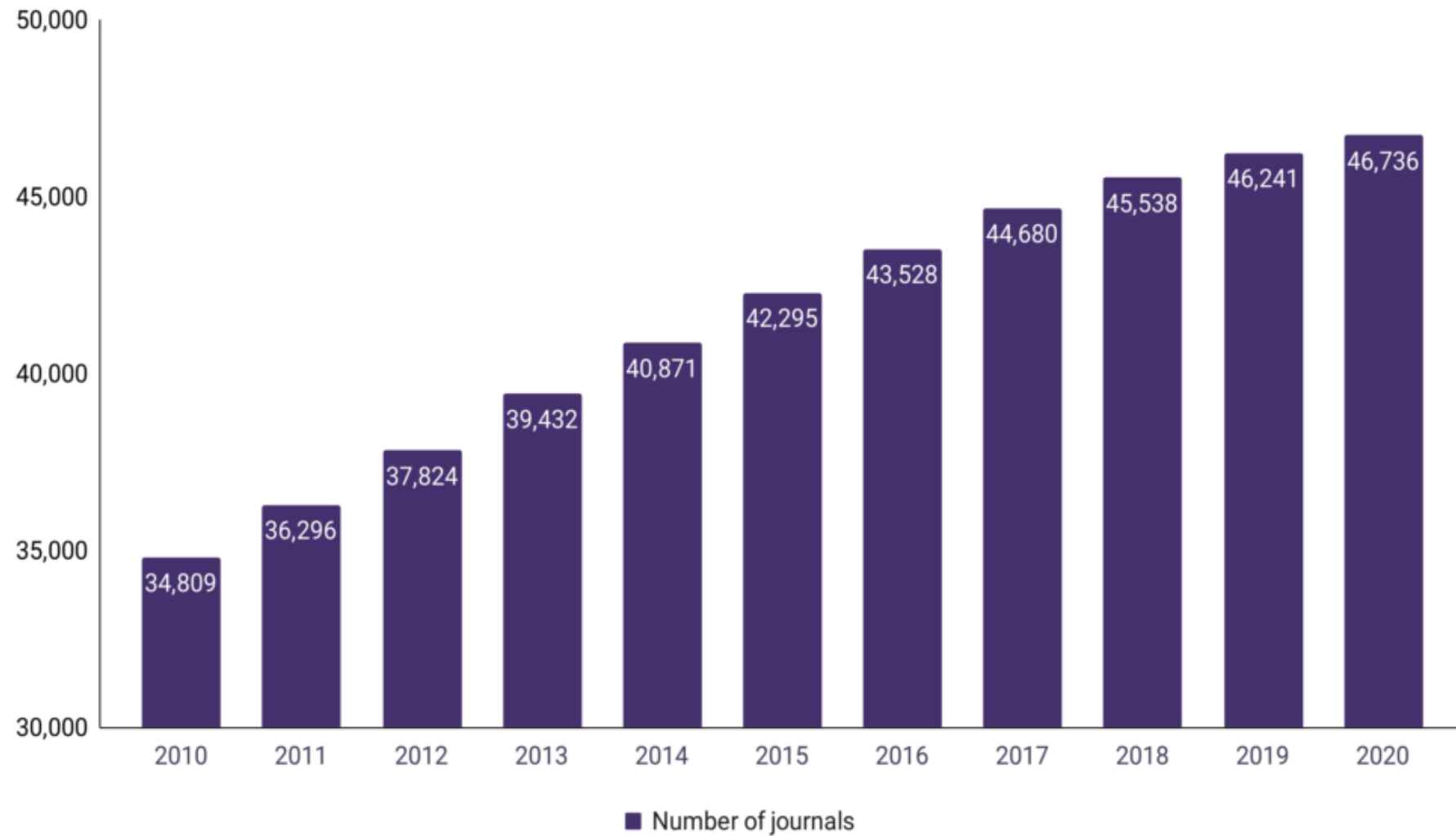
Richard Horton



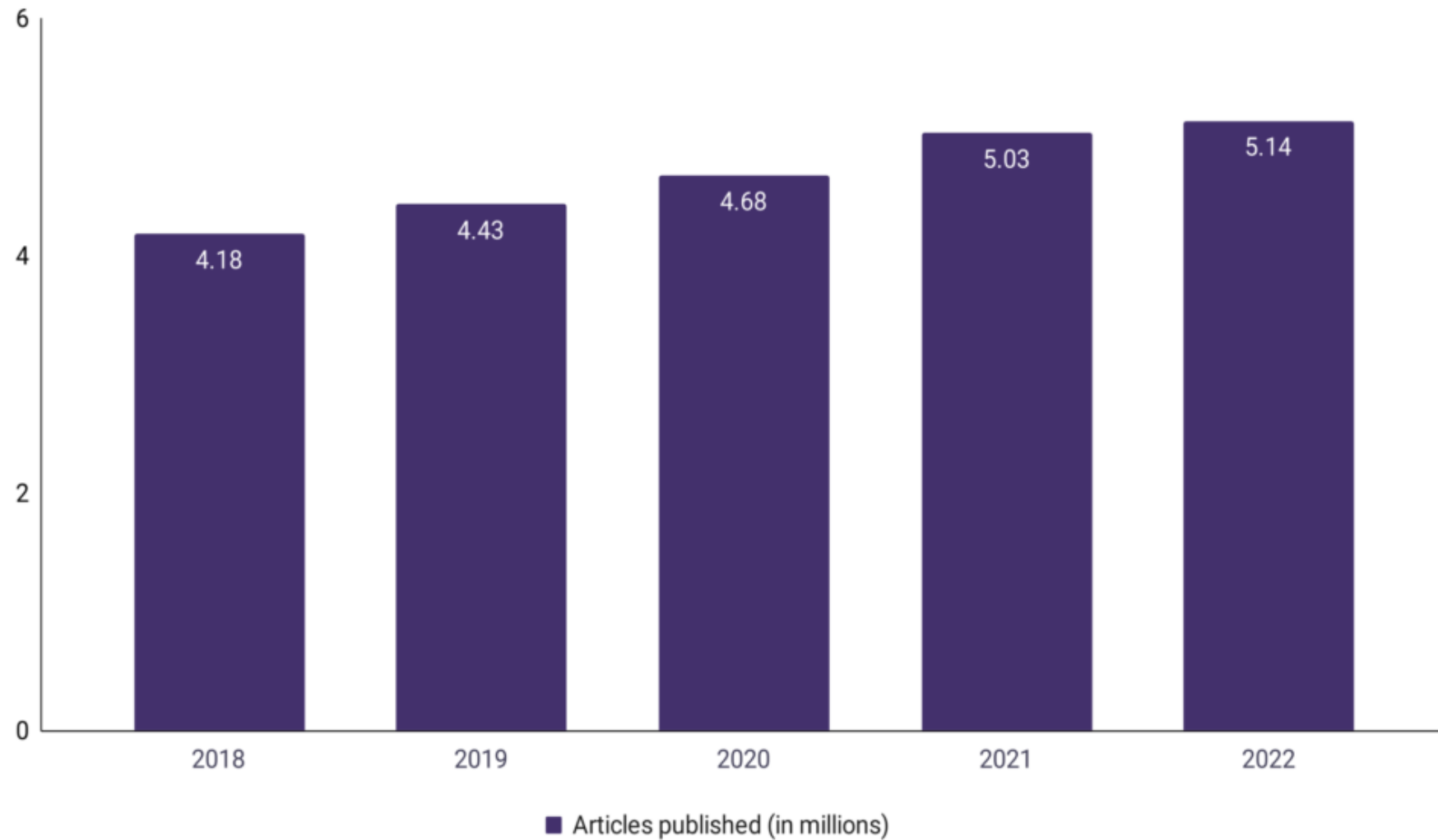
Richard Horton | The Lancet Editor-in-chief

A quantity issue?

Number of academic journals by year (worldwide)



Number of academic papers published by year (in millions)



Share of academic articles published by year

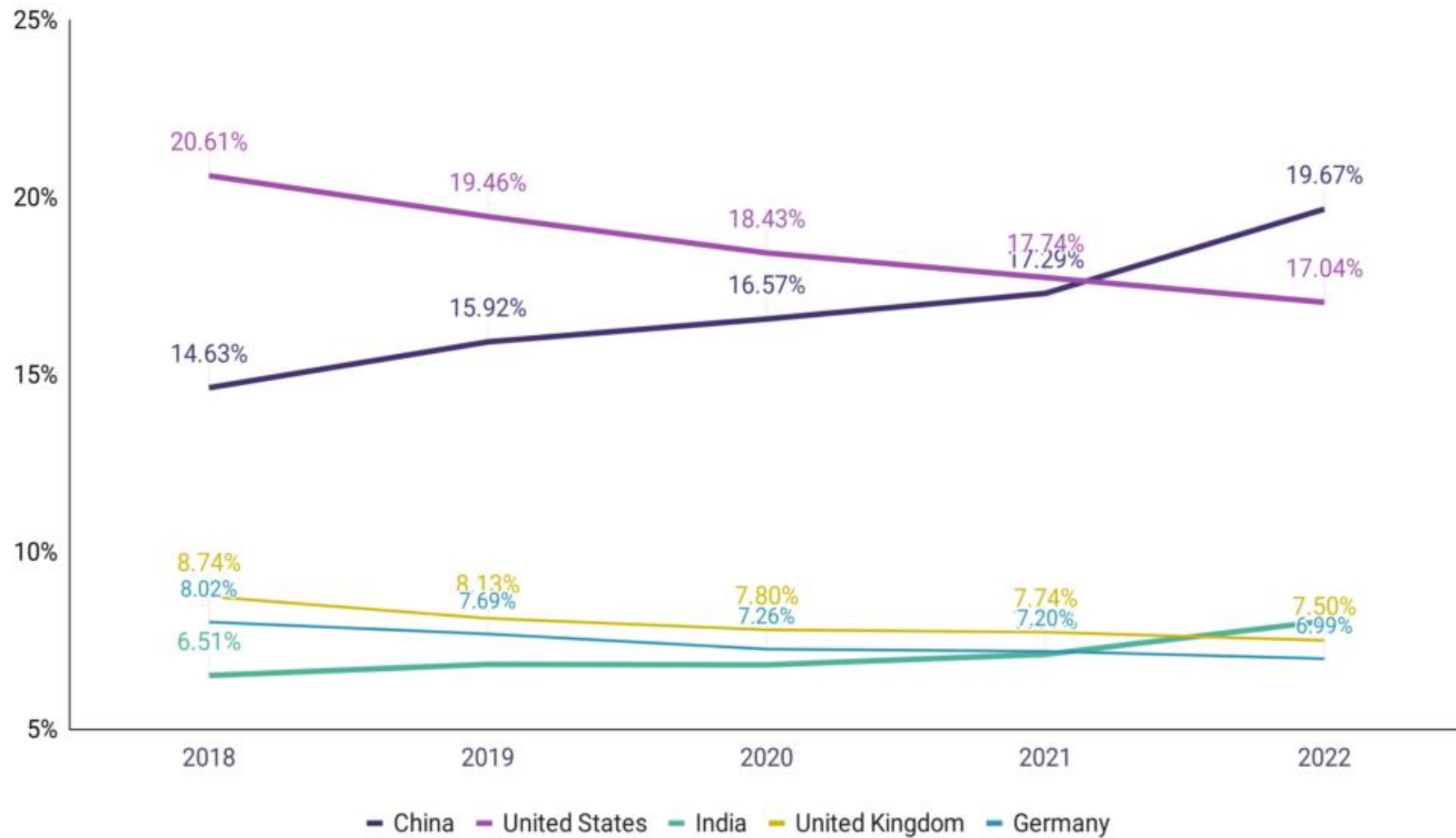
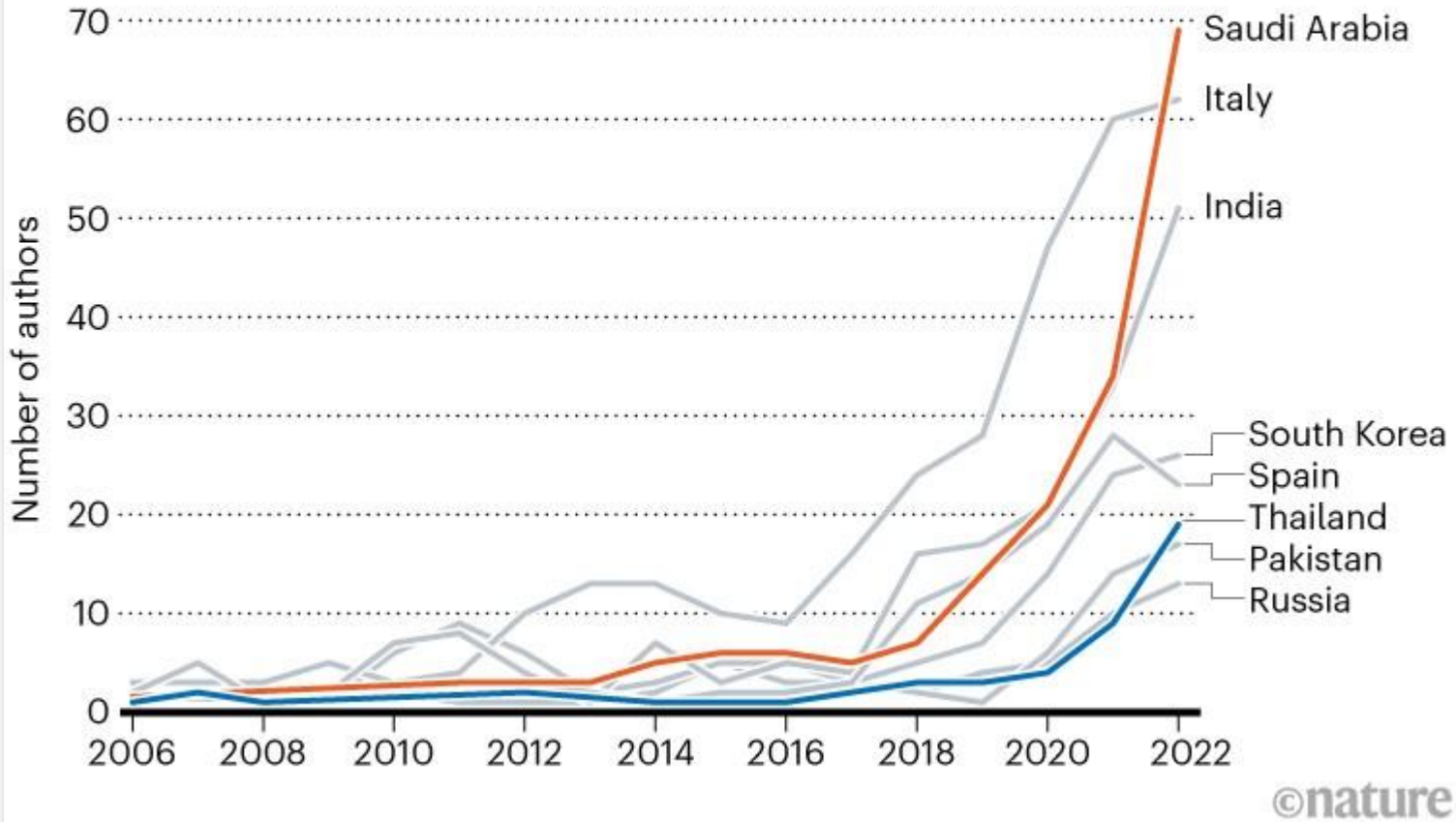


Table. The Most Prolific Mega-Journals in Biomedicine^a

Journal	Publisher	Full papers in 2022, No.	Journal impact factor
<i>Scientific Reports</i>	Springer	21 850	4.996
<i>International Journal of Environmental Research and Public Health</i>	MDPI	16 889	4.614
<i>International Journal of Molecular Sciences</i>	MDPI	15 899	6.208
<i>PLoS One</i>	PLOS ONE	15 654	3.752
<i>Sensors</i>	MDPI	9753	3.847
<i>Molecules</i>	MDPI	8972	4.927
<i>Frontiers in Immunology</i>	Frontiers	7831	8.787
<i>Nature Communications</i>	Springer	7452	17.694
<i>Frontiers in Oncology</i>	Frontiers	7232	5.738
<i>Journal of Clinical Medicine</i>	MDPI	7140	4.964

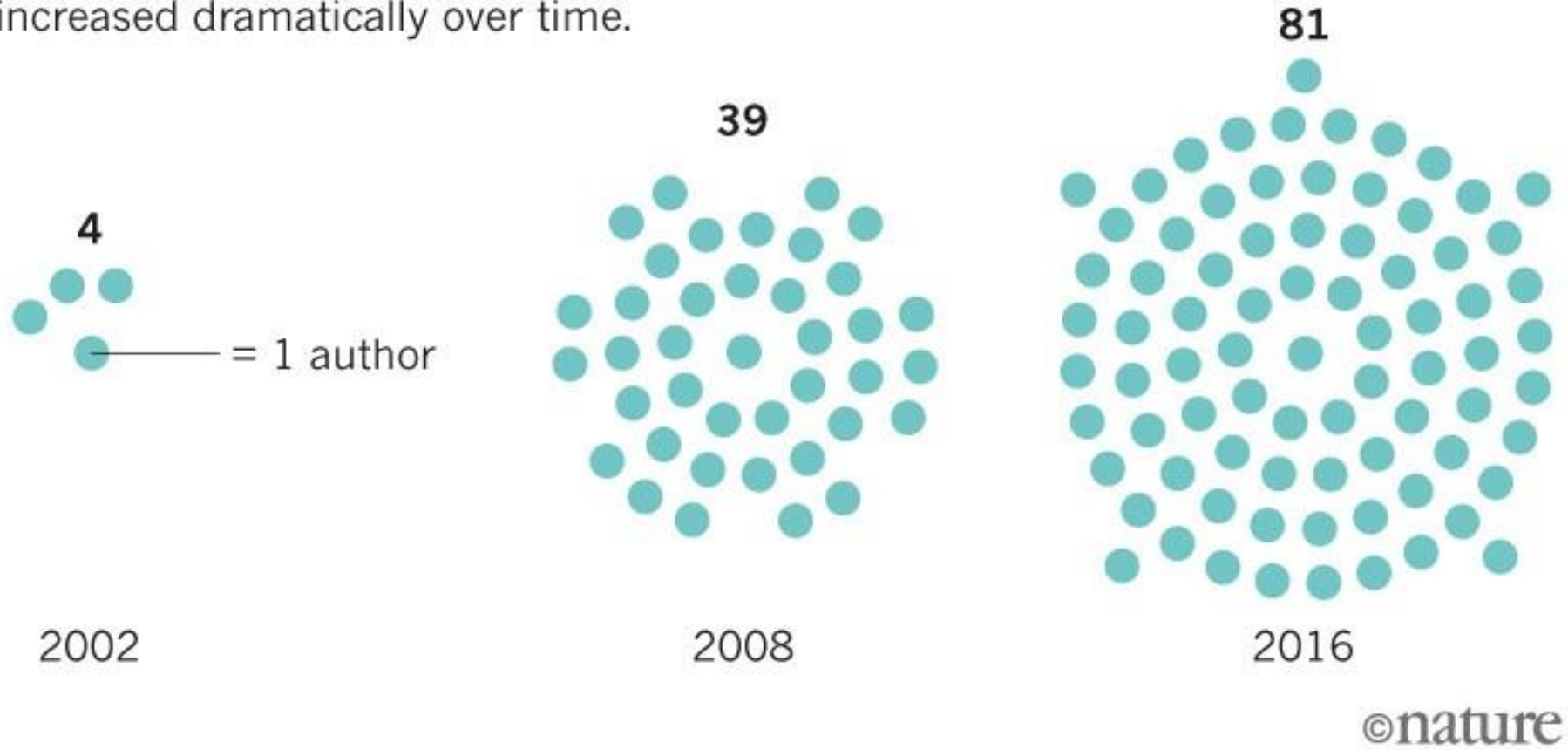
EXTREME GROWTH

Saudi Arabia had the highest number of extremely productive authors among the fastest-growing countries. However, Thailand had the sharpest increase between 2016 and 2022.



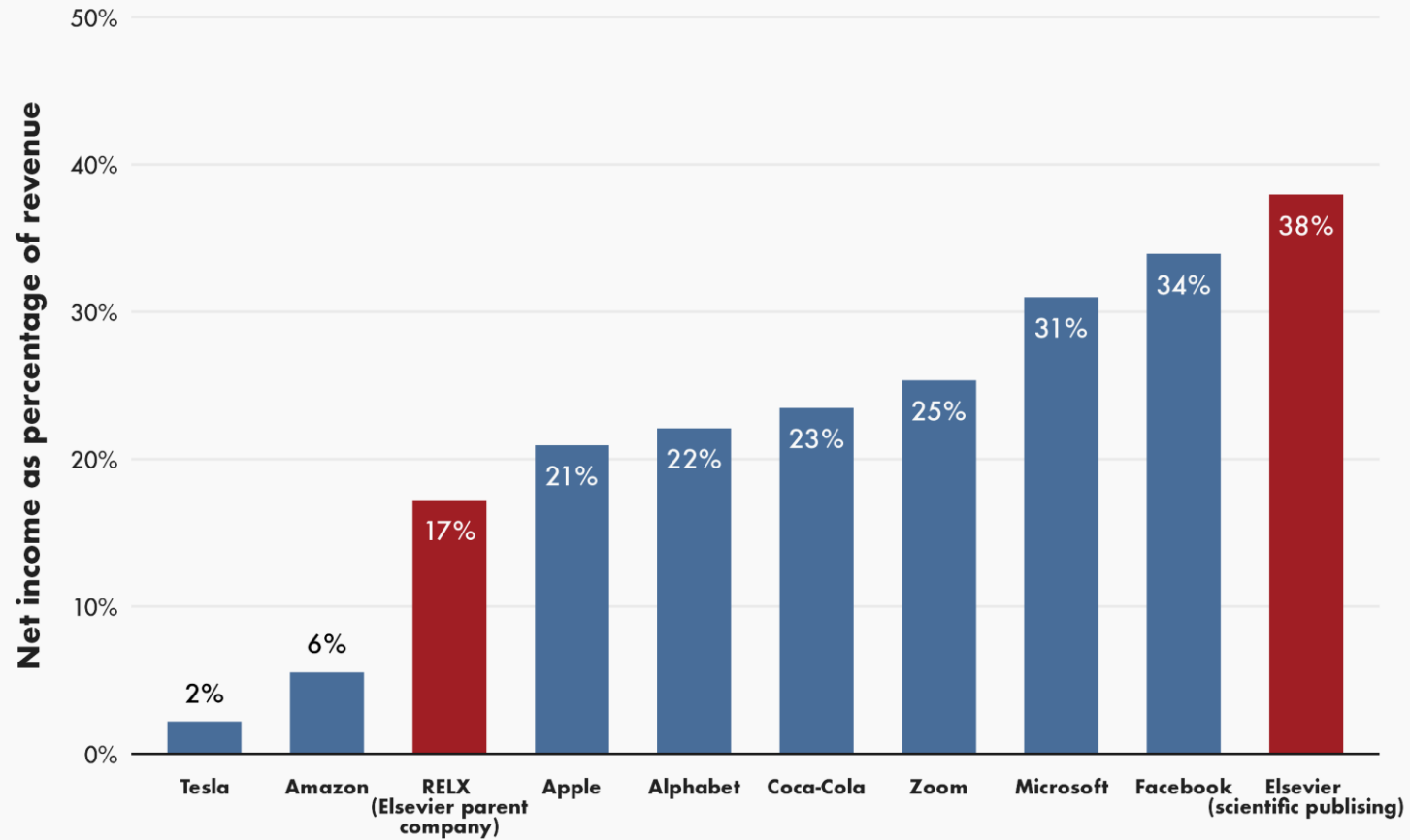
HYPERPROLIFIC AUTHORS PROLIFERATE

Numbers of authors with more than 72 papers a year increased dramatically over time.



Profit margins in 2020

Elsevier's profit margins exceeded those of Apple, Google, Facebook and Zoom



Sources: RELX Investor Presentation 2021, macro trends.net | @dthoelfs

What more can you ask for?

Dear Dr. [REDACTED]

I am Michael Williams, an Editorial assistant from a U.K based publishing company contacting you with the reference from our editorial department. Based on your outstanding contribution to the scientific community, we would like to write a book for you.

Researchers like you are adding so much value to the scientific community, yet you are not getting enough exposure. No matter how many papers you publish in famous journals, you will still be unknown to common people. To solve this problem, we came up with this unique solution.

With our book writing service, we will write your research contributions in common man's language. We will also include all your published papers into this book in a way that a common man can understand it. And then, we will publish your book with our publishing group. Before publication, we will send the draft to you for scientific accuracy, once you approve our draft, we then proceed for publication. You will get all the rights of your book, and all the sales generated from your book will be credited to you.

Your book will then be listed on famous websites like Amazon, eBay, Good Reads, and many other popular book websites. As a result, you will get good credit and people will recognize your hard work and your scientific contributions.

Last but not least, after the publication of your book, it will be published in Google News, Yahoo, and other major news channels What more can you ask for?

All we need is your book writing contract, and you will get all the rights for your book.

I will be waiting to hear from you.

Best Regards,
Michael Williams.

Something about trust?

THE AUTHOR LIST: GIVING CREDIT WHERE CREDIT IS DUE

The first author
Senior grad student on the project. Made the figures.

The third author
First year student who actually did the experiments, performed the analysis and wrote the whole paper. Thinks being third author is "fair".

The second-to-last author
Ambitious assistant professor or post-doc who instigated the paper.

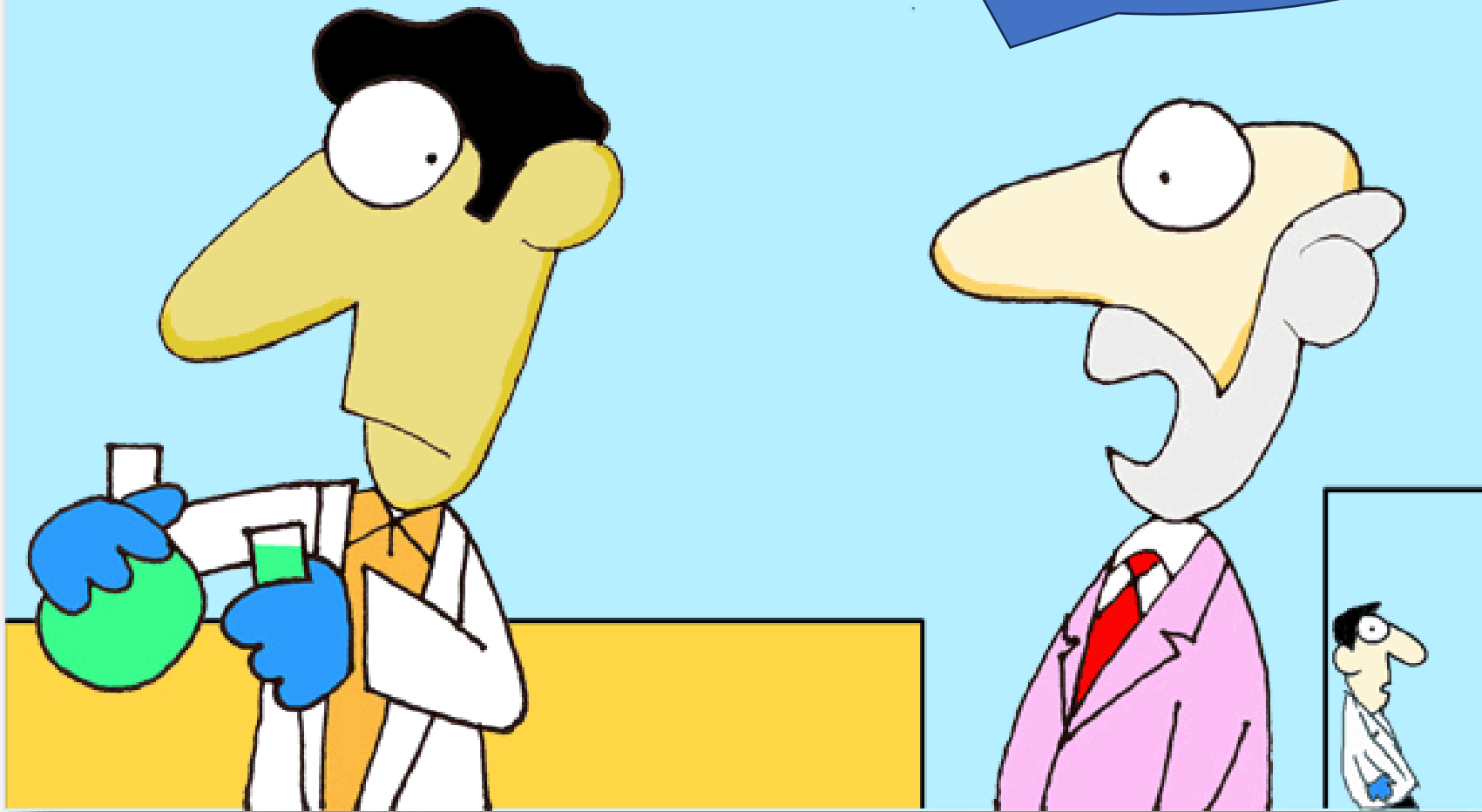
Michaels, C., Lee, E. F., Sap, P. S., Nichols, S. T., Oliveira, L., Smith, B. S.

The second author
Grad student in the lab that has nothing to do with this project, but was included because he/she hung around the group meetings (usually for the food).

The middle authors
Author names nobody really reads. Reserved for undergrads and technical staff.

The last author
The head honcho. Hasn't even read the paper but, hey, he/she got the funding, and their famous name will get the paper accepted.

*It's my wife's turn to
be the first author on
your paper.*





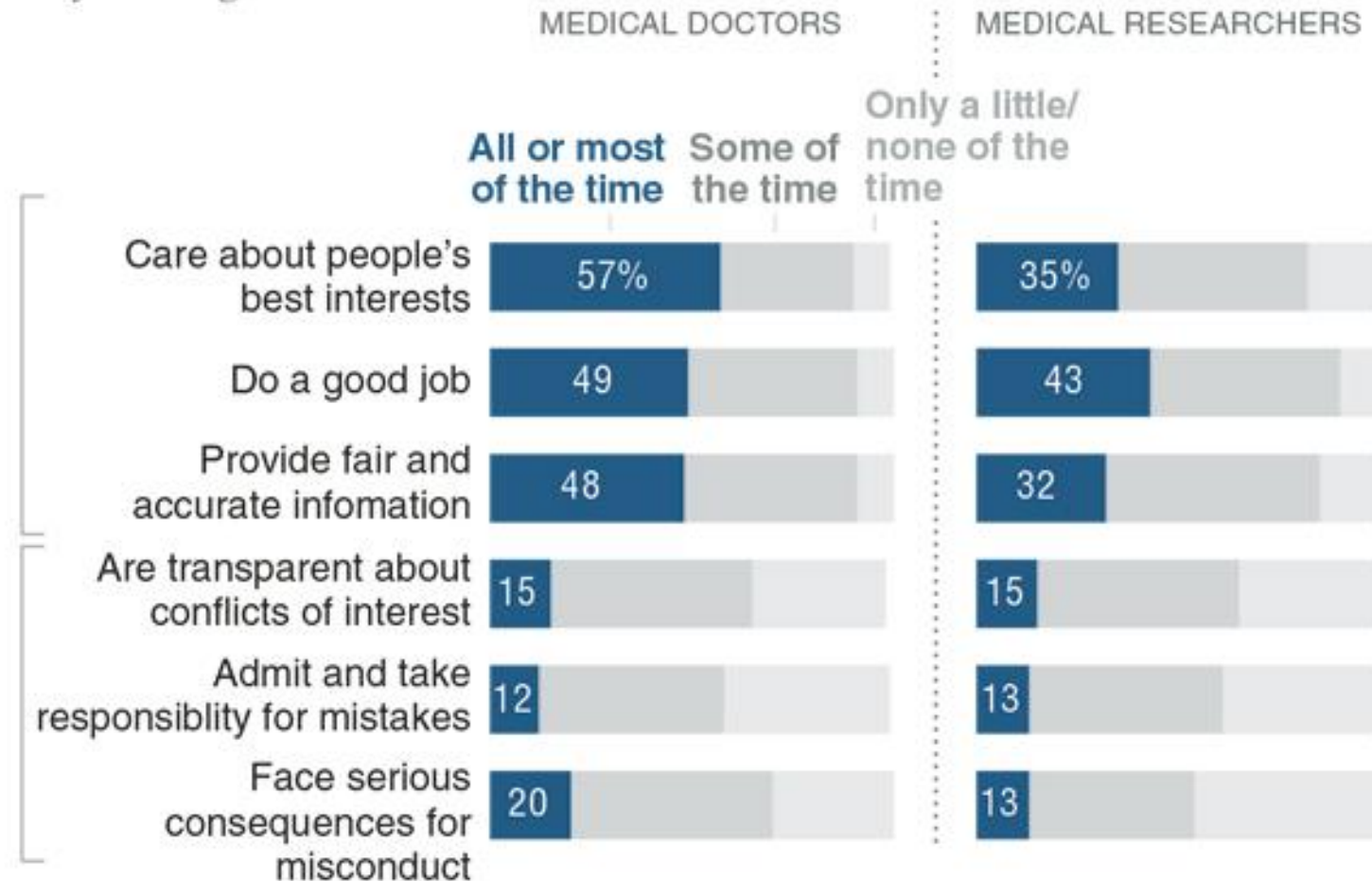
Contributor Role Taxonomy (CRediT)

Welcome to the website and resource hub for the Contributor Role Taxonomy (CRediT). Here you can discover the [origins of CRediT](#), find out how the taxonomy is being used, and access a range of [resources](#) to help you consider its value and potential uses.

CRediT is a community-owned 14 role taxonomy that can be used to describe the key types of contributions typically made to the production and publication of research output such as research articles.

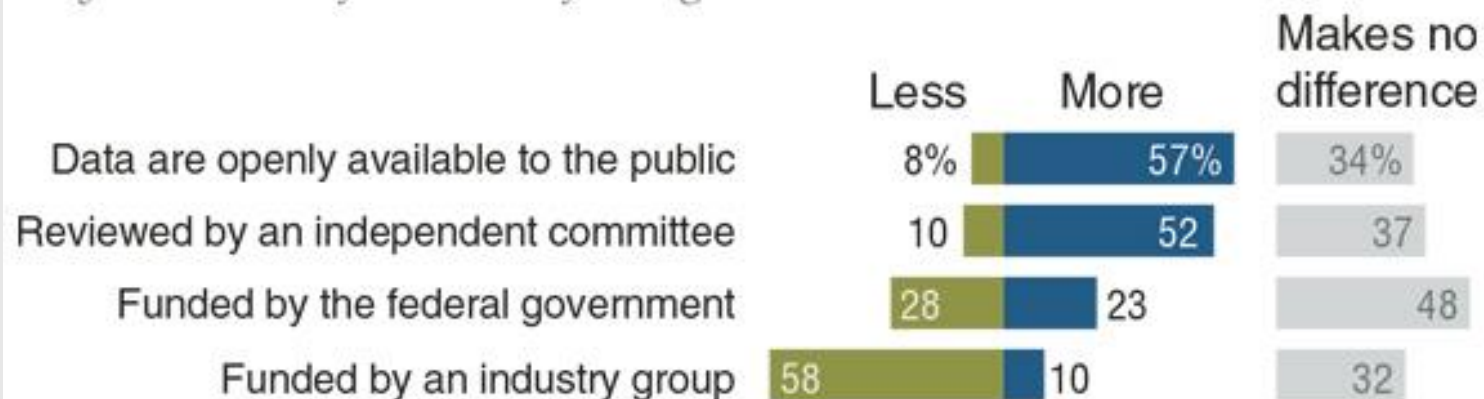
Americans trust doctors more than researchers but doubt the scientific integrity of both

Percentage of U.S. adults who say medical doctors or medical researchers do the following . . .



A majority of Americans say they are more apt to trust research when the data are openly available

Percentage of U.S. adults who say when they hear each of the following, they trust scientific research findings . . .



Note: Respondents who did not give an answer are not shown.

Source: Survey conducted January 7–21, 2019.

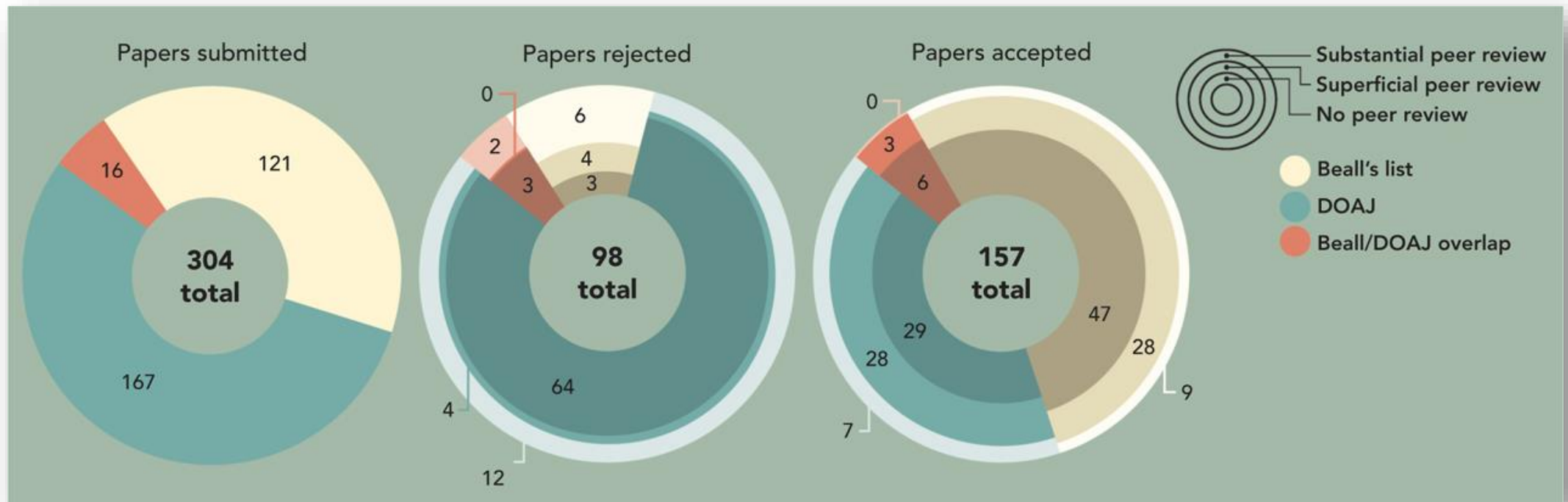
"Trust and Mistrust in Americans' Views of Scientific Experts"

PEW RESEARCH CENTER

A quality issue?

The journals will not necessarily have any financial incentives to ensure appropriate peer review or quality control.

MARTIN HAGVE | TIDSS KRIFTET, 2020



How much should the peer review of an RCT cost?

- 850 dollari
- 1.250 dollari
- 22.000 dollari
- 525.000 dollari



Slow, expensive, largely a lottery, wasteful of scientific time, fails to detect most errors, rejects the truly original, and doesn't guard against fraud authors.

Richard Smith





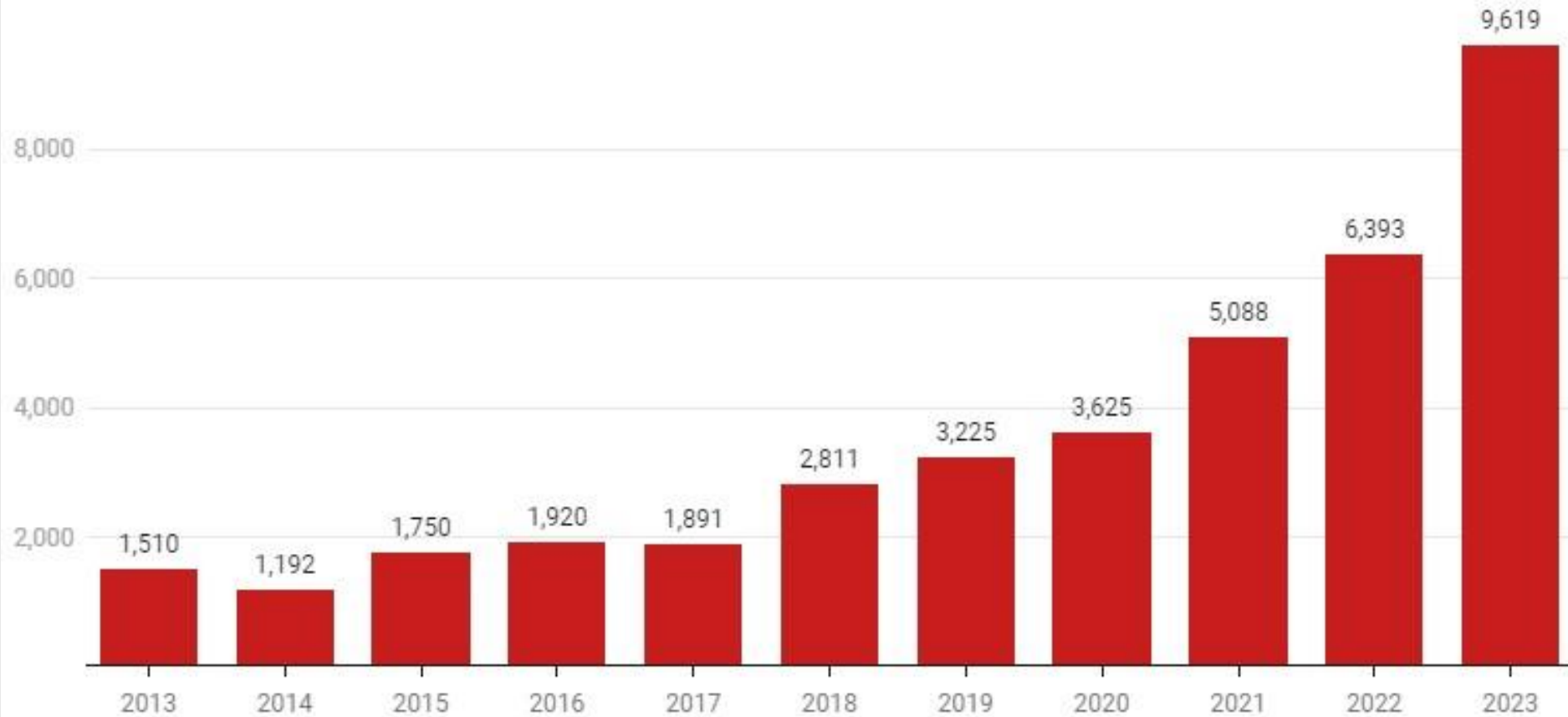
Even with the best of intentions,
how and whether peer review identifies
high-quality science is unknown.
It is, in short, unscientific.

Drummond Rennie , Nature 2016



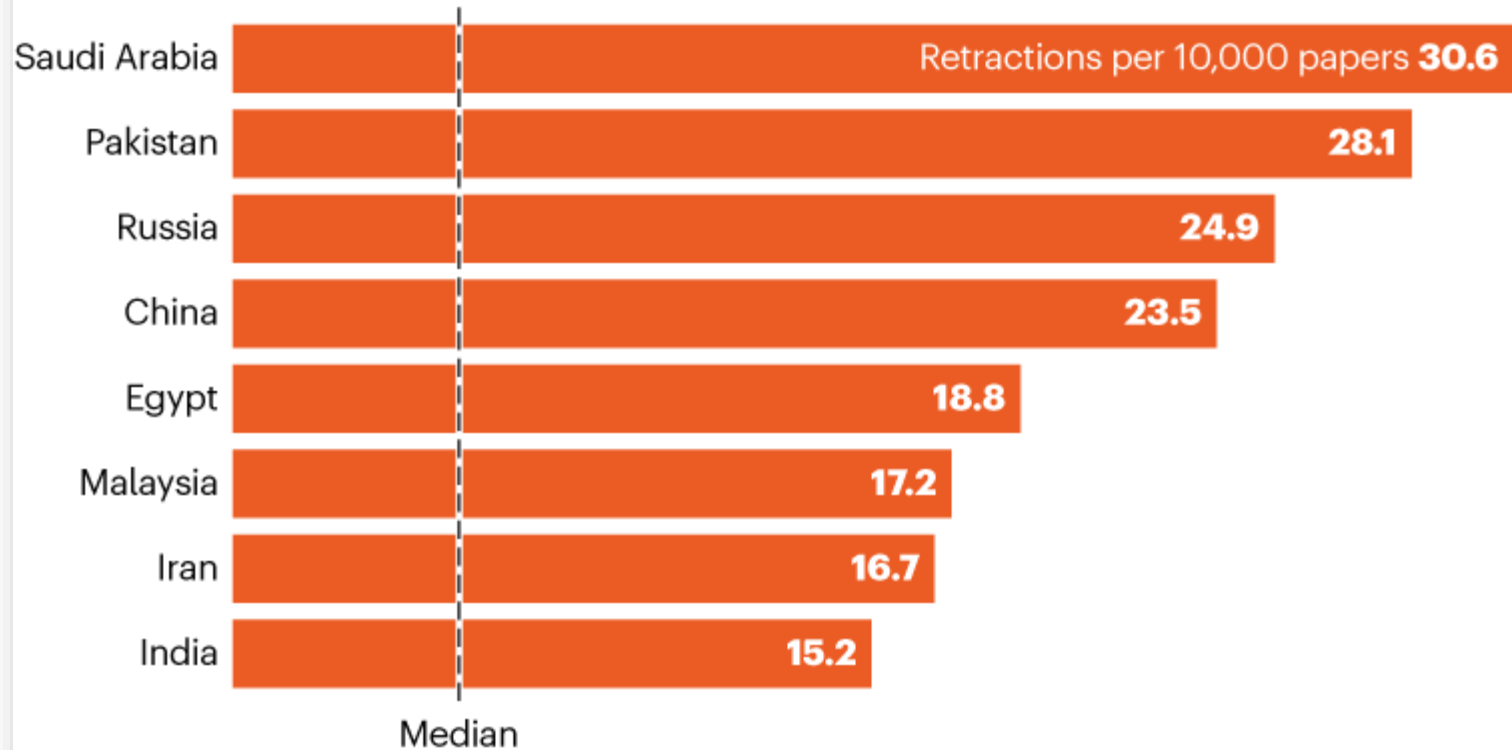
Number of retractions 2013–2023

Based on retractions logged in the Retraction Watch database.



COUNTRIES WITH HIGHEST RETRACTION RATES

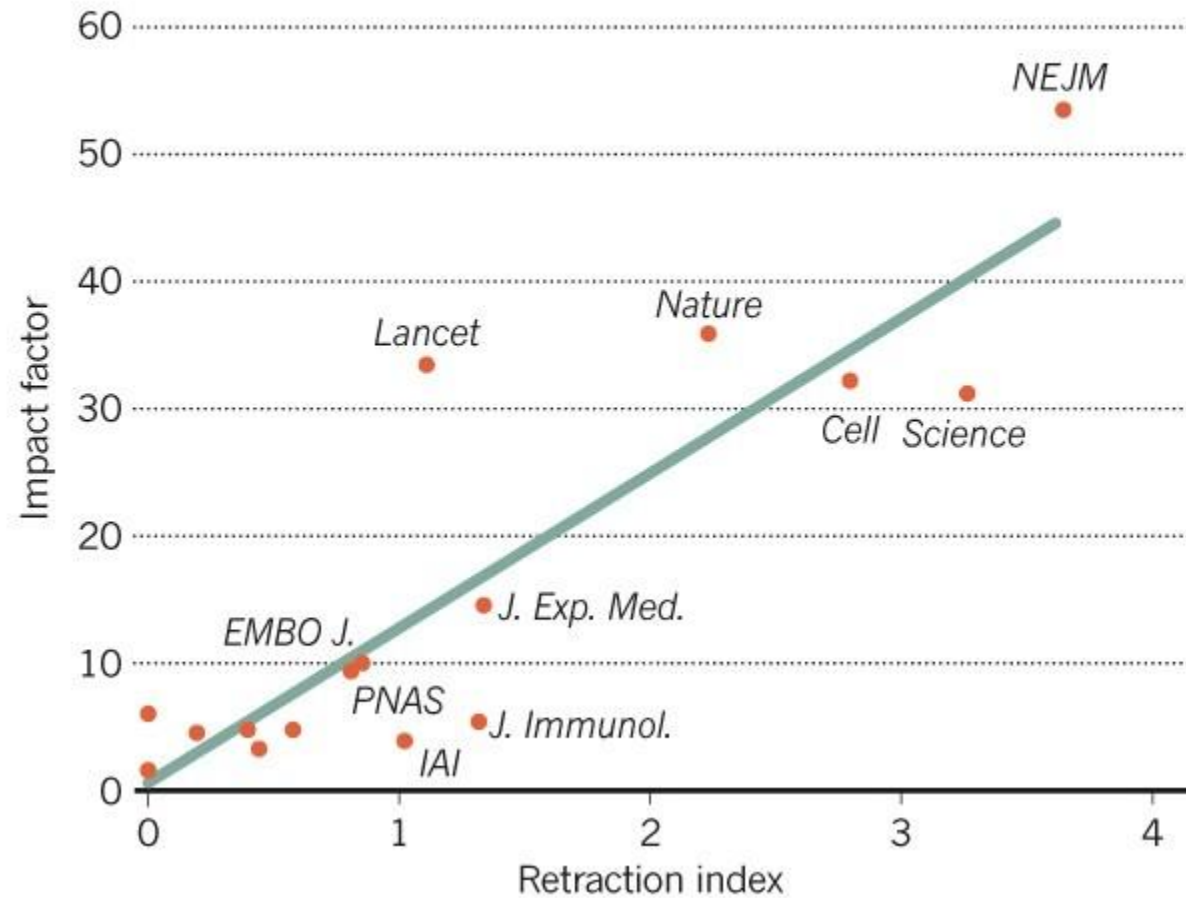
Saudi Arabia, Pakistan, Russia and China have the highest retraction rates among countries with >100,000 papers* published over the past two decades.



*Total number of research papers according to Scopus: articles and reviews. Analysis excludes conference papers (and their retractions)

RETRACTION RELATION

Journals with higher impact factors also have a higher rate of retractions.



[Retraction index: Likelihood that a paper in a given journal will eventually be pulled from the literature. Why high-profile journals have more retractions. *Nature* 2014.

<https://doi.org/10.1038/nature.2014.15951>] Take care: 10 yrs ago.



Andrew Wakefield | Unethical or False Research

A close-up photograph of a man wearing a black graduation cap and a red graduation gown over a white shirt and tie. He is smiling and looking upwards and to the right. The background is a blurred green and blue, suggesting an outdoor setting with trees.

Marc Tessier-Lavigne | Falsification



Diederik Stapel | Data Fabrication



Jonah Lehrer – Self citation and salami science



Salvatore Cuzzocrea | centosedici articoli sospetti

So, what?

PEER REVIEW.
COSTO. FALLACIA. CORRUZIONE.
OPEN ACCESS.
PREDATORY PUBLISHERS. PAPER MILLS.
HIJACKED JOURNALS.

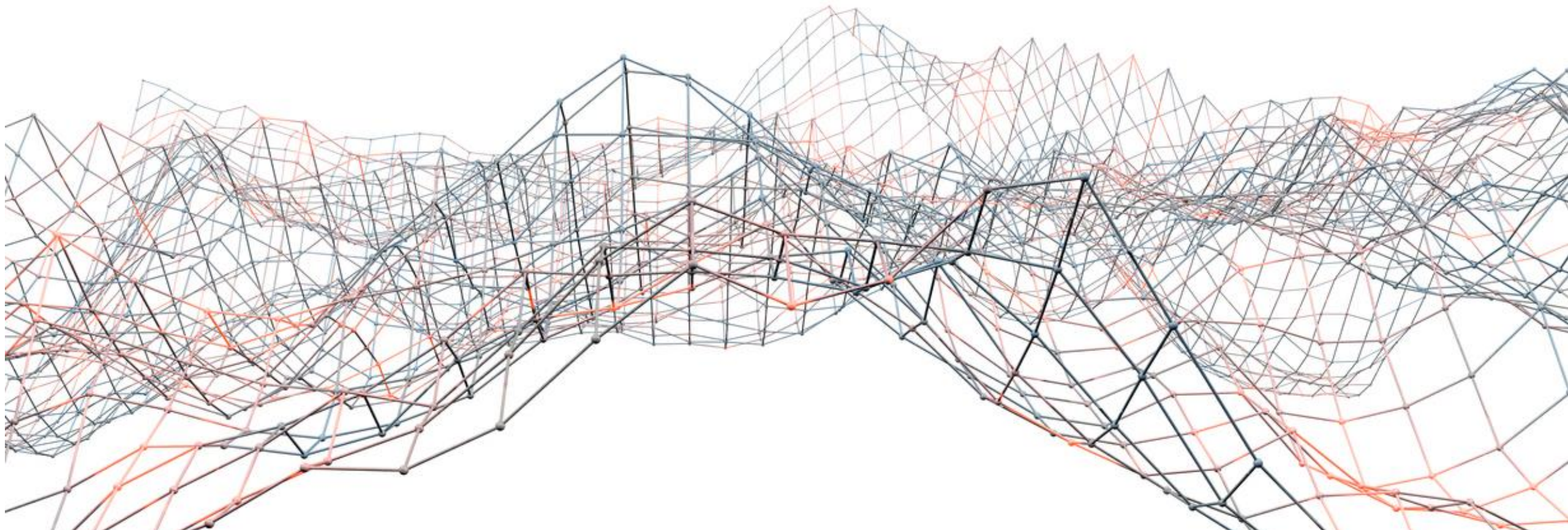
Systemic factors
and perverse incentives
play an important part.

Publicly funded research aims,
methods, and results should be
disseminate **free** in open
repositories.

Keeping in mind that good or "real" journals also contain commentaries, reviews, perspectives, book reviews, even obituaries: often this content is more valuable than inconclusive original articles.

[towards] a world of global conversations?

Richard Smith



The competitors of
the BMJ include Hollywood
films, Manchester United,
and a walk in the park.

Richard Smith

gl.defiore@gmail.com