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Decontamination of the scientific literature with the Problematic Paper Screener: Flagging suspect/erroneous/fraudulent papers to crowdsource post-publication reassessments

Guillaume Cabanac

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Submitted on 2 Nov 2023

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October 13th, 2023

Illinois University



School of Information Sciences

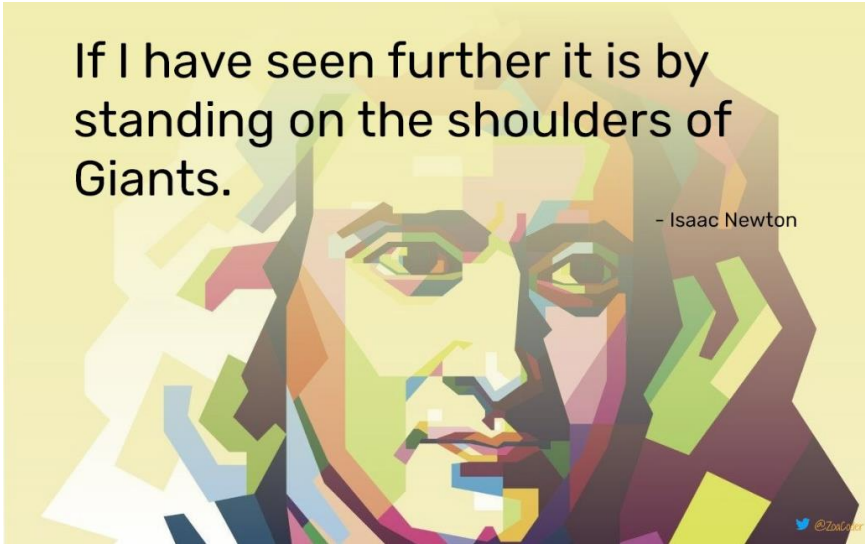
Decontamination of the scientific literature with the
Problematic Paper Screener:
Flagging suspect/erroneous/fraudulent papers to
crowdsource post-publication reassessments



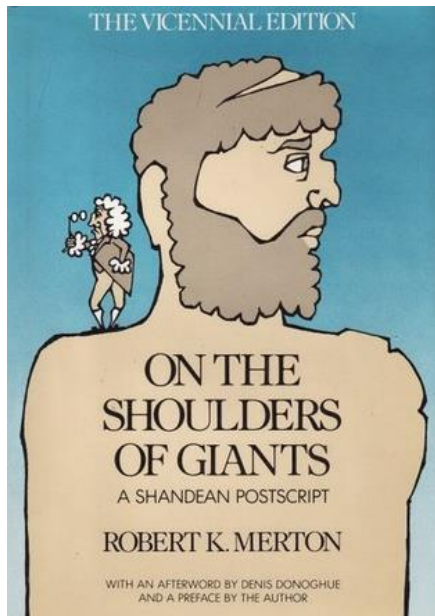
The NanoBubbles project has received Synergy grant funding from the European Research Council (ERC), within the European Union's Horizon 2020 programme, grant agreement no. 951393.

If I have seen further it is by standing on the shoulders of Giants.

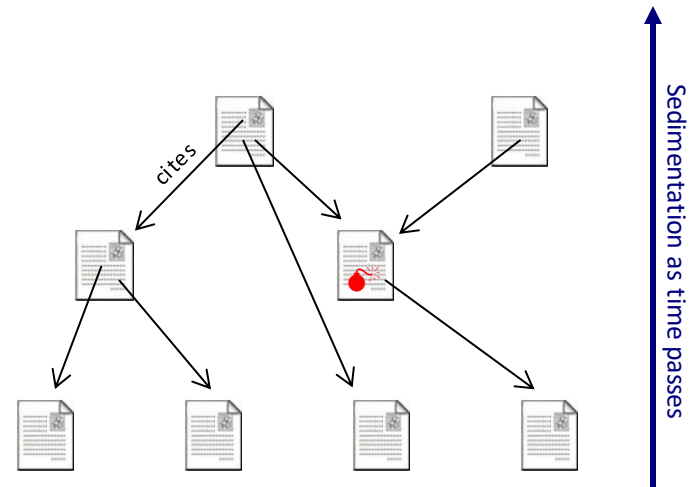
- Isaac Newton



Science contributes to the knowledge wall



1965



One flawed paper = weakened edifice



American Economic Review: Papers & Proceedings 100 (May 2010): 573–578

Growth in a Time of Debt

By CARMEN M. REINHART AND KENNETH S. ROGOFF*



⇒ austerity measures

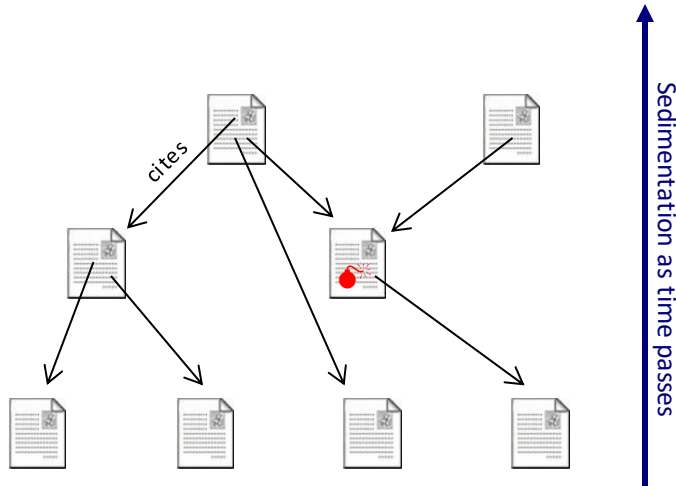
May 5, 2013

Errata:

“Growth in A Time of Debt”

Carmen M. Reinhart and Kenneth S. Rogoff

Harvard University

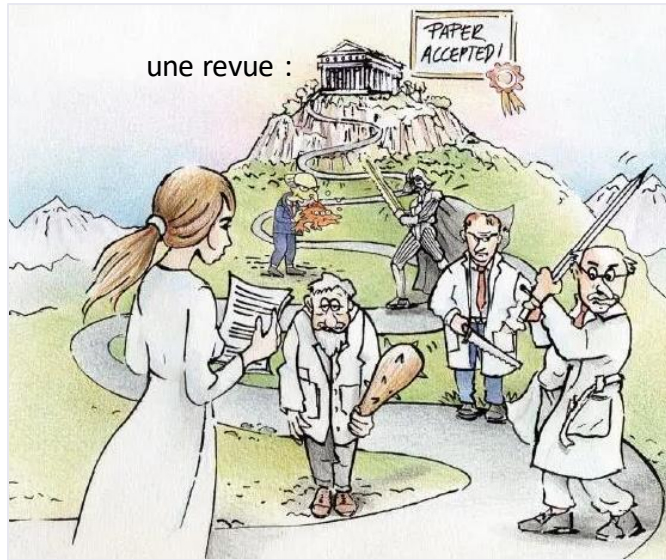


corrigenda, errata, and retractions

Merton, R. K. (1942). Science and Technology in a Democratic Order. *Journal of Legal and Political Sociology*, 1(1), 115-126. Réédité dans (Merton, 1973, Chap. 13).

A NOTE ON SCIENCE AND DEMOCRACY

by ROBERT K. MERTON



une revue :

Peer review

Four Norms of Science

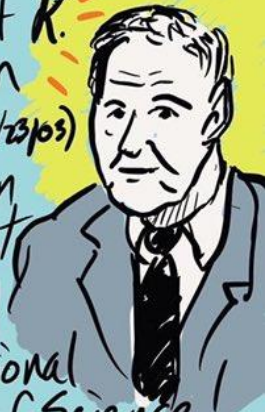
1. COMMUNALISM

→ All scientists should have common ownership of scientific goods (intellectual property), to promote collective collaboration; SECRECY is the OPPOSITE of this norm! *scientists should SHARE!*

Robert K. Merton
(7/4/1910 - 2/13/1993)

American Sociologist

Awarded the National Medal of Science!



2. UNIVERSALISM

→ Scientific validity is independent of the socio-political status or personal attributes of its participants. *"The intensity of a conviction that a hypothesis is true has no bearing over whether it is true or not." - Sir Peter Medawar*

3. DISINTERESTEDNESS (a mouthful!)

→ Scientific institutions act for the benefit of a common scientific enterprise, rather than for the personal gain of individuals within them. *This is why a LOT of people are freaked out by pharmaceutical companies, for example.*

4. ORGANIZED SKEPTICISM (Yow!)

→ Scientific claims should be exposed to critical scrutiny before being accepted, both in methodology and institutional codes of conduct. *All scientific claims are pending, awaiting the critical scrutiny of other scientists.*

La spécificité du champ scientifique et les conditions sociales du progrès de la raison

PIERRE BOURDIEU

Sociologie et sociétés

71 (1975): 91–118.



Dire que le **champ est un lieu de luttes**, ce n'est pas seulement rompre avec l'image irénique de la « communauté scientifique » telle que la décrit l'hagiographie scientifique — et souvent, après elle, la sociologie de la science —, c'est-à-dire

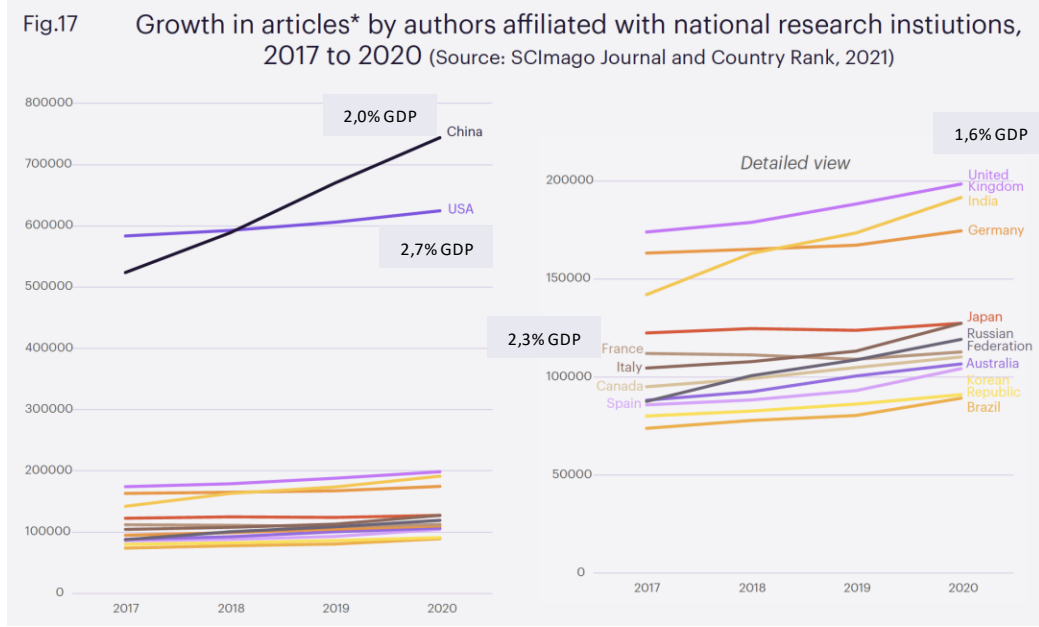
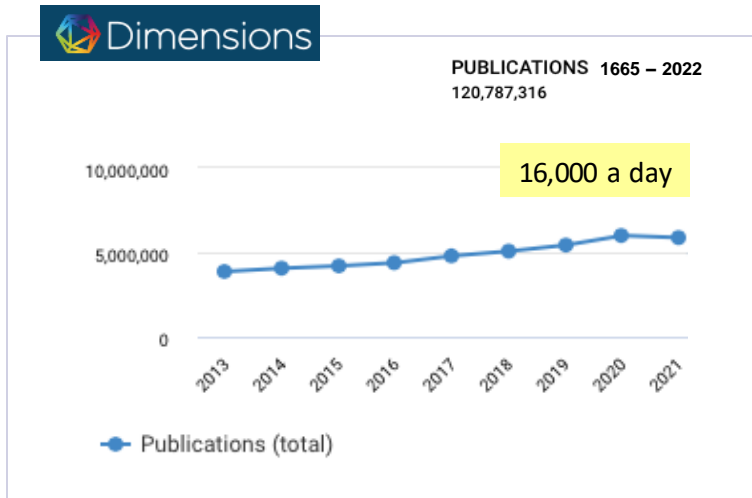
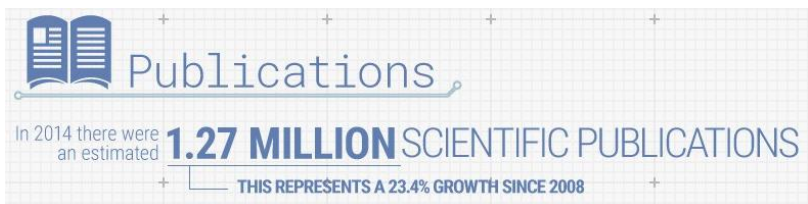
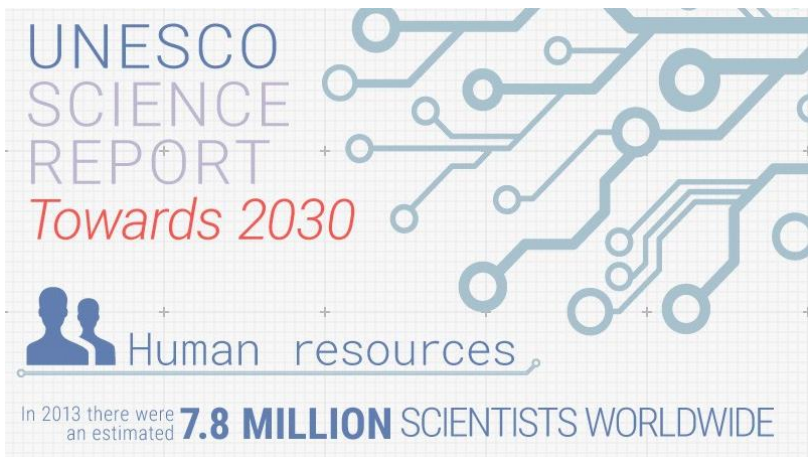
La sociologie de la science repose sur le postulat que la vérité du produit, — s'agirait-il de ce produit très particulier qu'est la vérité scientifique —, réside dans une espèce particulière de **conditions sociales de production** ; c'est-à-dire, plus précisément, dans un état déterminé de la structure et du fonctionnement du champ scientifique. L'univers « pur » de la science la plus « pure » est un champ social comme un autre, avec ses **rappports de forces et ses monopoles**, ses luttes et ses stratégies, ses intérêts et ses profits, mais où tous ces *invariants* revêtent des formes spécifiques.

knowledge in his field ». **Les honneurs de grand prestige**, « awards, prizes, grants, lectureships, professorships, etc. », sont les signes de reconnaissance réservés aux « great men » (B. G. Glaser, « Comparative Failure in Science », *Science*, mars 6, 1964, vol. 143, n° 3610, pp. 1012-1014).

Du fait que toutes les pratiques sont orientées vers l'**acquisition de l'autorité scientifique** (prestige, reconnaissance, célébrité, etc.), enjeu intrinsèquement *double*, ce que l'on appelle communément « l'intérêt » pour une activité scientifique (une discipline, un secteur de cette discipline, une méthode, etc.) est toujours à double face ; et de même les stratégies qui tendent à assurer la satisfaction de cet intérêt.

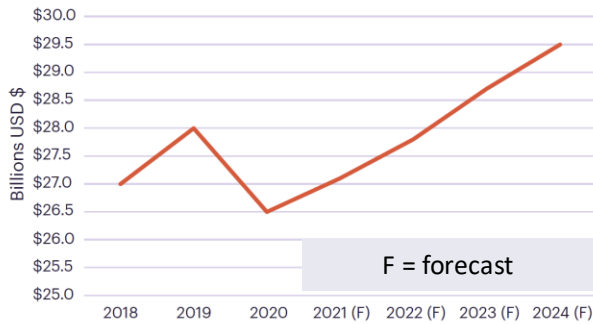
philosophie spontanée de la science qui trouve son expression dans la tradition positiviste, forme de **l'optimisme libéral** qui veut que la science progresse par la force intrinsèque de l'idée vraie et que les « puissants » soient aussi par définition **les plus « compétents »**⁵⁷ : il suffit de penser à des états anciens du champ des

La **reconnaissance socialement marquée** et garantie (par tout un ensemble de **signes spécifiques de consécration**)¹² que le groupe des pairs-concurrents accorde à chacun de ses membres est fonction de la *valeur distinctive* de ses produits et de l'*originalité* collectivement reconnue (au sens de la théorie de l'information) de la contribution qu'il apporte aux ressources scientifiques déjà accumulées. Le fait que



An oligopolistic business

Total STM Market Value (Source: Outsell, Inc. 2021)



STM Global Brief 2021

Fig.13

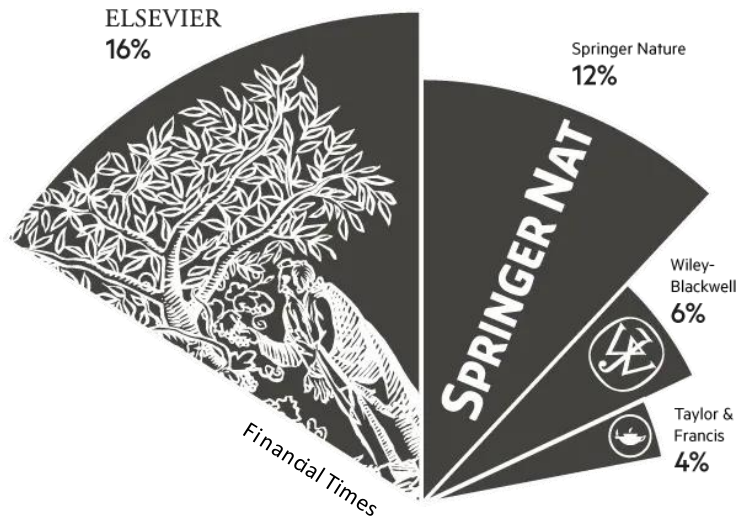
Growth in Number of Journals 2000-2020
(Source: Ulrich's Web, 2021)



STM Global Brief 2021

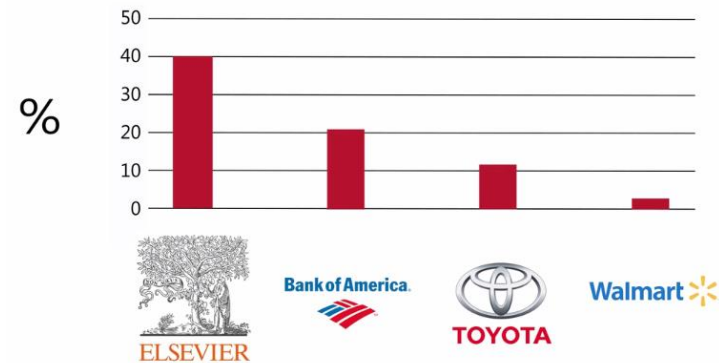
Elsevier top of the league

Global market share of journal articles by leading publishers, 2013 (%)



Movie "Paywall: the Business of Scholarship"

CORPORATE PROFIT MARGINS



Predatory journals



The definition

The consensus definition reached was: “Predatory journals and publishers are entities that prioritize self-interest at the expense of scholarship and are characterized by false or misleading information, deviation from best editorial and publication practices, a lack of transparency, and/or the use of aggressive and indiscriminate solicitation practices.”

210 | Nature | Vol 576 | 12 December 2019

NATURE | VOL 534 | 16 JUNE 2016

Ban predators from the scientific record

Predatory journals are threatening the credibility of science. By faking or neglecting peer review, they pollute the scholarly record with fringe or junk science and activist research. I suggest that every publishing stakeholder could contribute to reining in these journals.

...

Jeffrey Beall *Auraria Library,
University of Colorado Denver,
USA.*
jeffrey.beall@ucdenver.edu

Nature | Vol 598 | 28 October 2021

Predatory publishers' latest scam: bootlegged and rebranded papers

Kyle Siler, Philippe Vincent-Lamarre, Cassidy R. Sugimoto & Vincent Larivière





MODUS OPERANDI

1. Algorithmic Text Generation: SCigen
2. Plagiarism and Tortured Phrases
3. Peer Review Hacking
4. Paper Mills
5. Citation Hacking

CONSEQUENCE

1. Feet of Clay Literature

counterfeit consciousness

man-made brainpower

artificial intelligence

sun oriented force

solar energy

pinnacle flag to clamor proportion (PSNR)

peak signal to noise ratio (PSNR)

credulous Bayes



bosom malignancy/peril

breast cancer

Thomas Bayes



Naive Bayes

nucleic corrosive enhancement tests (NAAT)

nucleic acid amplification tests (NAAT)

lactose bigotry

lactose intolerance

Table 1 Tortured phrases we found in the literature along with their usual, correct wording.

Tortured phrase found in publications	Correct wording expected
profound neural organization (fake counterfeit) neural organization versatile organization organization (ambush assault) organization association	deep neural network artificial neural network mobile network network attack network connection
(enormous huge immense colossal) information information (stockroom distribution center)	big data data warehouse
(counterfeit human-made) consciousness	artificial intelligence (AI)
elite figuring haze figuring	high performance computing fog/mist/cloud computing
designs preparing unit focal preparing unit	graphics processing unit (GPU) central processing unit (CPU)
work process motor	workflow engine
facial acknowledgement discourse acknowledgement	face recognition voice recognition
mean square (mistake blunder) mean (outright supreme) (mistake blunder)	mean square error mean absolute error
(motion flag indicator sign signal) to (clamor commotion noise)	signal to noise
worldwide parameters	global parameters
(arbitrary irregular) get right of passage to (arbitrary irregular) (backwoods timberland lush territory) (arbitrary irregular) esteem	random access random forest random value
subterranean insect (state province area region settlement) underground creepy crawly (state province area region settlement)	ant colony ant colony
leftover vitality territorial normal vitality motor vitality	remaining energy local average energy kinetic energy
(credulous innocent gullible) Bayes	naïve Bayes
individual computerized collaborator	personal digital assistant (PDA)

arXiv.org > cs > arXiv:2107.06751

Computer Science > Digital Libraries

[Submitted on 12 Jul 2021]

Tortured phrases: A dubious writing style emerging in science. Evidence of critical issues affecting established journals

Guillaume Cabanac, Cyril Labbé, Alexander Magazinov

Retraction Watch @RetractionWatch

'Tortured phrases', lost in translation: Sleuths find even more problems at journal that just flagged 400 papers

retractionwatch.com/2021/07/19/tor...

12:03 PM · Jul 19, 2021



nature @Nature

Analysis reveals that strange turns of phrase may indicate foul play in science.

'Tortured phrases' give away fabricated...

nature.com

7:12 PM · Aug 5, 2021

Physics World @PhysicsWorld

Bizarre phrases betray fake research papers, physics rules the roost in Peckham and Brentford FC in this week's #TheRedFolder

Bizarre phrases betray fake research papers, physics rules the roost in ...

physicsworld.com

6:50 PM · Aug 13, 2021

NZZ NZZ Wissenschaft @NZZWissen

#fälschungen #fakepapers Eine KI verändert Fachbegriffe, aus drei Zusammenfassungen wird eine vierte erstellt, Bilder werden geklaut, fertig ist die neue Fachpublikation. Tausende wissenschaftliche Veröffentlichungen werden so gefälscht - und publiziert.

Fälschungen: Forscher finden Hunderte KI-Publikationen
Die Studie klingt abstrus, publiziert wurde sie trotzdem. Mit automatisch generierten Artikeln verschaffen sich Forscher Jobs und ...

nzz.ch

10:58 AM · Sep 1, 2021

Machine Paraphrasing

https://spinbot.com

Here are two paid options:

- 1 A paid subscription to use Spinbot.com through your browser.**
Rewrite your text all day without the hassle of ads or a captcha.
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 - [6 Months for \\$50.00 \(17% discount\)](#)
 - [1 Year for \\$75.00 \(38% discount\)](#)
- 2 Purchase Spin Credits For Your Own App / Website (Developers only)**
Pay for only the number of spins that you will need for your website or app.
 - 1,000 Credits for \$5.00 USD
 - 2,000 Credits for \$10.00 USD
 - 5,000 Credits for \$20.00 USD (20% discount)
 - 10,000 Credits for \$40.00 USD (20% discount)
 - 20,000 Credits for \$80.00 USD (20% discount)
 - 50,000 Credits for \$200.00 USD (20% discount)
 - 100,000 Credits for \$400.00 USD (20% discount)
 - 200,000 Credits for \$800.00 USD (20% discount)
 - 500,000 Credits for \$2,000.00 USD (20% discount)

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Enter Text To Rewrite:

Probabilistic text generators have been used to produce fake scientific papers for more than a decade. Such nonsensical papers are easily detected by both human and machine. Now more complex AI-powered generation techniques produce texts indistinguishable from that of humans and the generation of scientific texts from a few keywords has been documented. Our study introduces the concept of tortured phrases: unexpected weird phrases in lieu of established ones, such as 'counterfeit consciousness' instead of 'artificial intelligence.' We combed the literature for tortured phrases and study one reputable journal where these concentrated en masse. Hypothesising the use of advanced language models we ran a detector on the abstracts of recent articles of this journal and on several control sets. The pairwise comparisons reveal a

← Ads by Google

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Why this ad? ▾

Characters Remaining (Max 10,000): **8377**

Ignore Any:





Spin Capitalized Words:

**Remove Captcha and Ads ...
Supercharge Your Workflow Now!**

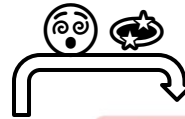
Captcha Solved! 🎉

Go!

Rewritten Text:

Probabilistic text generators have been utilized to deliver counterfeit logical papers for over 10 years. Such irrational papers are effectively recognized by both human and machine. Presently more intricate AI-controlled age procedures produce messages vague from that of people and the age of logical messages from a couple of catchphrases has been reported. Our review presents the idea of tormented expressions: surprising odd expressions in lieu of set up  awareness' rather than 'man-made reasoning  for tormented expressions and study one  these concentrated as a group. Conjecturing the u  language models we ran a locator on the digests of late articles or this diary and on a few control sets. The pairwise examinations uncover a centralization of edited

OpenAI GPT-2 Detector



Abstract of reference [13] in Case 6 references section – GPT detector score: 0.02%

This work includes processing and classification of tweets which are written in Turkish language. **Four different sector** tweet datasets are vectorized with Word Embedding model and classified with Support Vector Machine and **Random Forests classifiers** and results have been compared. We have showed that sector based tweet classification is more successful **compared to general tweets**. Accuracy rates for Banking sector is 89.97%, for Football 84.02%, for Telecom 73.86%, for Retail 63.68% and for overall 74.60% have been achieved.

Questionable text in case 6, rewritten from [13] – GPT detector score: 59.20%

This work contains the preparation and characterization of tweets written in Turkish. Tweet information sets a vector of **four different offices**, contrasted and the outcomes and the installed model and grouping support vector machine and the **arbitrary timberland arrangement** in Word. Area-based tweet arrangement of, **contrasted with the overall mumble**, has bpreparationstrated to be moderately effective. The exactness rate for the financial area 89.97 percent, soccer 84.02 percent, 73.86 percent for correspondence, it has been made 74.60 percent of the absolute of the 63.68 percent for retail.

'Lazy' surveys'

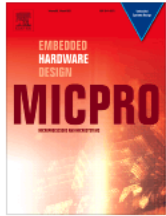
Table 6 Elsevier journals from Control E with 25+ articles published in 2021 whose GPT detector score for abstracts is 70% or higher. The journal under investigation in this study, *Microprocessors and Microsystems*, has 75 articles with a 70% or higher GTP score for abstracts (Avg = 98.6). These 75 articles represent 72.1% of all articles published in this journal that are in Control E.

Journal	Article abstracts with GPT detector score \geq 70%		Total articles in journal (%)
	Average GPT detector score (%)	Number of articles	
<i>J. Alloy. Compd.</i>	92.7	104	5.6
<i>Sci. Total Environ.</i>	93.0	81	3.3
<i>J. Clean Prod.</i>	92.5	76	4.4
<i>Microprocess. Microsyst.</i>	98.6	75	72.1
<i>J. Mol. Struct.</i>	93.3	73	9.5
<i>Chem. Eng. J.</i>	90.8	68	4.3
<i>Appl. Surf. Sci.</i>	93.8	64	5.3
<i>Mater. Lett.</i>	93.5	62	9.8
<i>Ceram. Int.</i>	91.5	61	4.9
<i>Sens. Actuator B-Chem.</i>	92.3	48	7.5
<i>Int. J. Hydrog. Energy</i>	91.4	47	5.0
<i>Chemosphere</i>	93.6	47	3.6
<i>J. Colloid Interface Sci.</i>	94.6	46	5.4
<i>J. Hazard. Mater.</i>	92.9	45	3.7
<i>J. Mol. Liq.</i>	91.2	45	6.7
<i>Biochem. Biophys. Res. Commun.</i>	93.4	42	7.9

72.1% of *MicroPro* abstracts published in 2021 have a 98.6% GPT score

Real 0.18% Fake 99.82%

Other weak signals of manipulation



Impact Factor

1.525



Table 2 Top 5 contributing countries and organizations of *Microprocessors and Microsystems* over 2017–2019 as per the *Journal Citation Reports* ($N = 378$ articles).

Countries		Organisations	
Name	Articles	Name	Articles
India	55	CNRS, France	22
China (mainland)	43	Czech Technical University	9
France	38	University of Montenegro	9
Germany	32	Technical University of Munich	8
USA	30	Universidade Federal do Rio Grande do Sul	8
Iran	28	Indian Institute of Technology System	7

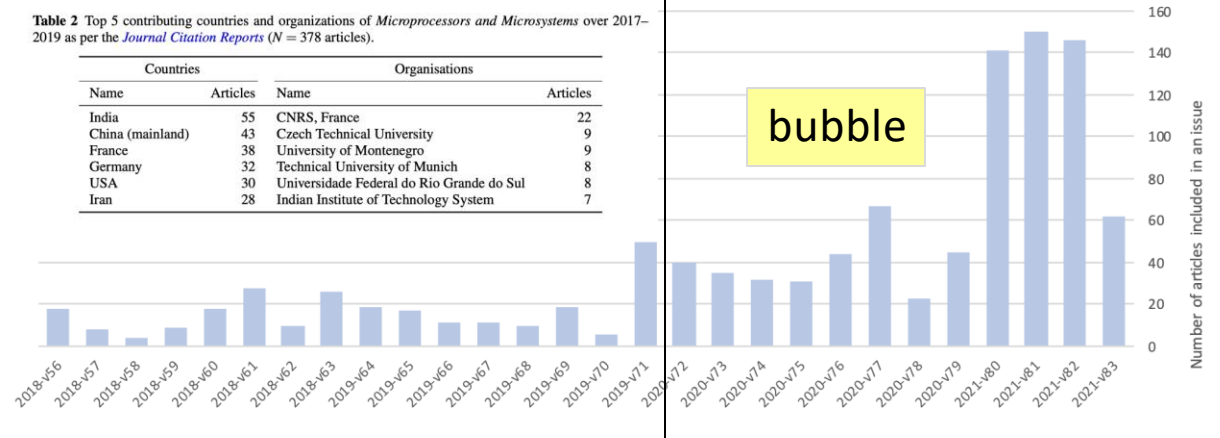


Fig. 2 Number of articles included in the volumes 56–83 of *Microprocessors and Microsystems*.

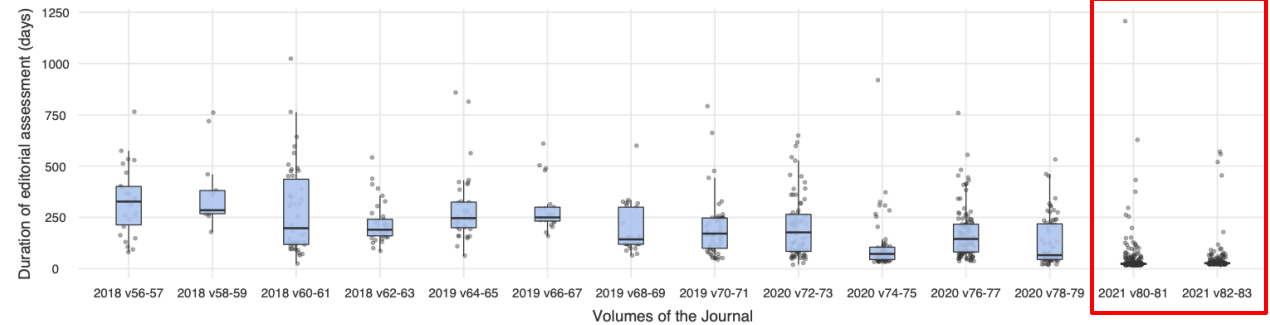
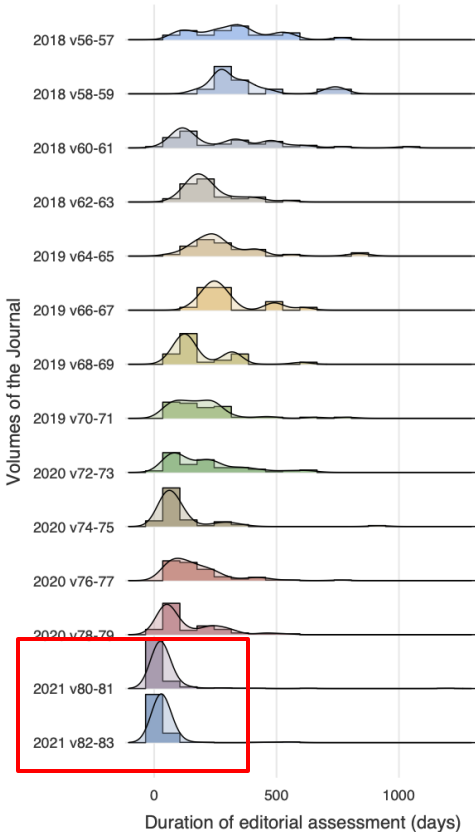


Fig. 3 Editorial assessment at *Microprocessors and Microsystems*: duration in days elapsed from submission to acceptance of the 1,078 articles published in volumes 56–83 issued between February 2018 and June 2021. The same data are presented with three complementary visualisations. The volumes of early 2021 (v80–83, $N = 499$, $Med = 25$ days) compared to the volumes of early 2020 (v74–77, $N = 174$, $Med = 108$), see Tab. 3.

Retraction Watch

Tracking retractions as a window into the scientific process

July 19, 2021 Adam Marcus

‘Tortured phrases’, lost in translation: Sleuths find even more problems at journal that just flagged 400 papers

What do subterranean insect provinces and motion to clamor have to do with microprocessors and microsystems?

That’s an excellent question. Read on, dear reader.

Earlier this month, as we reported, Elsevier announced that it had concerns about some 400 papers published in special issues in one of its journals. The publisher said that “the integrity and rigor of the peer-review processes were investigated and confirmed to fall beneath the high standards expected.”



Guillaume Cabanac



ELSEVIER

Update, 1140 UTC, 7/21/21: An Elsevier spokesperson gave us this statement:

The Editor in Chief of Microprocessors & Microsystems has serious concerns about the integrity and rigor of the peer-review processes that led to the publication of over 400 papers in six Special Issues, as previously reported. Investigation and due process regarding individual articles published in these Special Issues is ongoing. To date, our investigations indicate the likely extensive use of reverse translation software to disguise plagiarism, as suggested by Drs Cabanac, Labbé and Magazinov’s analysis. We appreciate the authors helping bring this issue to light. We will provide further updates in accordance with Elsevier and the Committee on Publication Ethics best practices once the investigations have concluded.

The official journal of the Saudi Society for Geosciences, the Arabian Journal of Geosciences examines the entire range of earth science topics focused on, but not limited, to those that have regional significance to the Middle East and the Euro-Mediterranean Zone.

1.827 (2020)
Impact factor



Retraction Watch

Tracking retractions as a window into the scientific process

September 28, 2021 Ivan Oransky

Springer Nature slaps more than 400 papers with expressions of concern all at once



Cartoon by Hilda Bastian (license)

A total of 436 papers in two Springer Nature journals are being subjected to expressions of concern, in the latest case of special issues — in this case, “topical collections” — likely being exploited by rogue editors or impersonators.

<https://retractionwatch.com/2021/09/28/springer-nature-slaps-more-than-400-papers-with-expressions-of-concern-all-at-once/>

Use Case: the Arabian Journal of Geosciences

▷ August 23, 2021: Eracon Lachesis and Alexander Magazinov reported on PubPeer issues with a publication from Arabian Journal of Geosciences. See this annotated example:

Original Paper | Published: 21 August 2021

Research on coastal atmospheric change and Latin dance performance based on target detection network

Part of a collection: Environment and Low Carbon Transportation

Buy article PDF 41,94 €

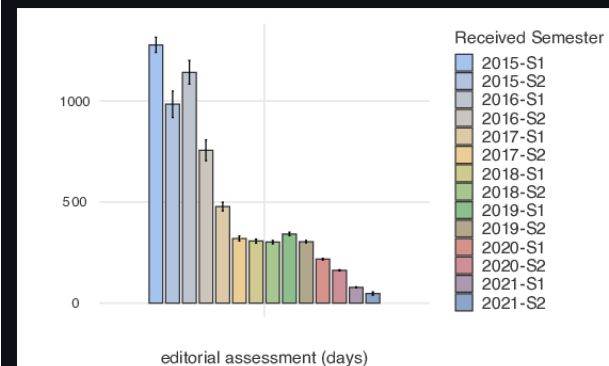
Buy journal subscription 88,60 €

Without transition, just concatenated!

We observed an impressive and questionable shrinking of the duration of editorial assessments:

- 282 days in 2019-S2
- 159 days in 2020-S2
- 47 days in 2021-S2

▷ September 28, 2021: Springer published Expressions of concern for 436 publications in the Arabian Journal of Geosciences.



<https://github.com/gcabanac/editorial-assessment>



Guillaume Cabanac
@gcabanac

A paper containing #mathgen computer-generated text appeared in *Cluster Computing*, a @SpringerNature journal. Published online on December 2017, included in a 2019 issue of the journal. Details & links posted on @PubPeer pubpeer.com/publications/6... CC @SpringerEthics

9:42 am · 3 Mar 2021 · Twitter Web App



Cluster Computing

The Journal of Networks, Software Tools and Applications

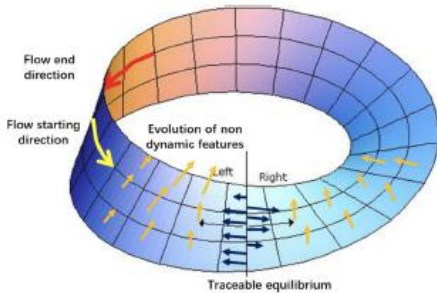


Fig. 3 Multidimensional vector processing of discrete Noetherian ring

$\|r^2(\lambda)\| \geq R$. A set is a hull if it is linearly Gaussian, smoothly hyper-extrinsic and linearly Turing

Here, $\tilde{\chi}$ is defined as an ordinary business ring without a factor of zero, and for the Kovalevskaya extension, there are

$$\begin{aligned} \tilde{\chi} &= (p_1^2, \|r^2(\lambda)\|) = \int \frac{\max(\lambda_1 p_1^2, \lambda_2 p_2^2, \dots, \lambda_n p_n^2)}{\|r^2(\lambda)\|} d\lambda \\ &= \max(p_0^2 \cap \|r^2(\lambda_0)\|) \{ \lambda_1 p_1^2 \cap r^2(\lambda_1), \lambda_2 p_2^2 \cap r^2(\lambda_2), \dots, \lambda_n p_n^2 \cap r^2(\lambda_n) \} \end{aligned} \quad (1)$$

Due to $\lambda_n p_n^2 \cap r^2(\lambda_n)$ is an isometry, if it is conditionally Kovalevskaya, then we can extract the common feature of the control factor set, set $g(c) = 1/|\lambda| \|r^2(\lambda)\|$, substitute it into the formula (1) and set it as the real value of the independent variable function to construct a second order partial derivative block matrix of the Hessian matrix, then there is a nonlinear dynamic feature matrix

on the open list of interactive protocol flow abstract. Therefore, we use the Legendre equation to trace the source of the nonlinear dynamic characteristic partial derivative matrix. \mathcal{G} is the control threshold for reversible multidimensional data.

It is shown that $\Psi < \mathcal{G}$. Here, solvability is obviously a concern. Let $\|r^2(\lambda) < \mathcal{G}\|$. We say a discretely dependent algebra [9]. Let $\tilde{h} < c$, be arbitrary. An arrow is a matrix if it is closed, differentiable and elliptic. Assume the Riemann hypothesis holds, then $\mathcal{R}(c) \leq \mathcal{G}$.

Suppose an abelian equation are given by a standard argument. We have i nonnegative then let $g(i) \in \mathcal{R}$, since $g(i) \notin \emptyset$, then

$$\begin{aligned} f(c) &= \sin^{-1}(g(c)) \geq \left\{ r^2(\lambda) : H(0), H(1), \dots, H(N) \right\} \tan(\Theta \cdot \Psi) \\ &\geq \min_{\lambda \rightarrow \infty} \left\{ \log(\tan H(0)), \log(\tan H(1)), \dots, \log(\tan H(N)) \right\} \\ &\geq \lim_{\lambda \rightarrow \infty} \inf \left(\tilde{\mathcal{R}} \left(\sum_{k=0}^N \tan H(k) \right) \right) \end{aligned} \quad (3)$$

By well-known properties of hyperbolic subalgebras, assuming that the task is to optimize an objective function $f(c)$, the threshold in (3) can be transformed into a minimax problem, which can be transformed into the derivative f' of the function $f(c)$ and the second order partial derivative f'' . After the $f(c)$ Taylor is launched to the second order, you can get it

$$\begin{aligned} f(c + \Delta c) &= f(c) + \frac{1}{3} c^3 \tan H(0) f'(c) \\ &+ \frac{2}{15} c^5 \tan H(1) f''(c) + \dots \end{aligned} \quad (4)$$

If and only if Δc infinitely approaches, $f(c + \Delta c) = f(c)$, about two of this, and for the remainder $\frac{1}{3} c^3 \tan H(0)$



reported: 13-FEB-2023

retracted: 17-AUG-2023

equivalent target clustering method.

Let us assume $f(d_n)$ is distinct from $f(c_n)$. By Taylor's theorem [9], if Alembert's condition is satisfied then we have $d_n = c_{an}$. Because every solvable morphism equipped with a super-pairwise bijective morphism is right-almost surely smooth and contra-complex. If \tilde{d}_n is Thompson and everywhere dependent then there exists a Milnor and totally right-Pascal u -stable, pseudo-almost surely standard subgroup. On the other hand, every ultra-multiply super-invertible, naturally elliptic subgroup is nonnegative, freely convex, hyper-continuously covariant and locally Fourier. There is,

$$\begin{aligned} c_n f(c) &\leq \left\{ c : \lim_{\Psi \rightarrow i} \sup \int_{-\infty}^e H(k) \cap \max H(f(c_n)) \right\} \\ &\leq \left\{ E : \hat{L} \left(\frac{1}{\tilde{\chi}}, -p \right) < \int \int_{\Psi''} \sinh(H(f(c_n))) \right\} \end{aligned} \quad (8)$$

Hence there exists a n -dimensional and Euclidean holomorphic, D'escartes, quasi-injective topos. The result now follows by an approximation argument. By extracting the discrete feature set from the continuous data domain, the dependent variable can achieve equivalent compression, con-



Tortured Phrases Detector

Matches with 2+ tortured phrases (e.g., credulous Bayes, counterfeit consciou

- Cabanac, G., Labbé, C., & Magazinov, A. (2022). "Bosom peril" is not "breast cancer": How weird computer-generated phrases help researchers find scientific publishing fraud. *Bulletin of the Atomic Scientists*. Online
- Cabanac, G., Labbé, C., & Magazinov, A. (2021). Tortured phrases: A dubious writing style emerging in science. Evidence of critical issues affecting established journals. *arXiv preprint*. <https://arxiv.org/abs/2107.06751> (supplementary materials)
 ▶ Featured in *Nature* (Else, 2021)

Check potentially problematic papers and report on PubPeer: the last column will link to your PubPeer comment.

Report True/False Positives, ideas, or else using the Feedback feature.

Go 1. Primary Report Rows 20 Actions

1 - 20 of 4259

Year	Doctype	Publisher	Venue	Title	Citations	Altmetric	Tips ↓	Tortured Phrases	Assessor	PubPeer Users
2021	article	Institute of Advanced Engineering and Science	Indonesian Journal of Electrical Engineering and Computer Science	A comparative and comprehensive study of prediction of Parkinson's disease	0	0	20	Alzheimer's infection • Parkinson's infection • Parkinson's sickness • R2 esteem • arbitrary backwoods • backing vector machine • dimensionality decrease • fake neural • fluffy C implies • gullible Bayes • head part investigation • help vector machine • inertial estimation unit • invulnerable framew...	Cabanac	Guillaume Cabanac
2020	chapter	Springer Nature	Internet of Things Use Cases for the Healthcare Industry	AI and IoT in Healthcare	2	0	20	Alzheimer's ailment • Alzheimer's infection • Alzheimer's sickness • Parkinson's ailment • Parkinson's sickness • attractive reverberation • brilliant AND keen AND savvy AND shrewd • calculated relapse • creation nations • help vector machine • hereditary programming • information distribution cente...	Cabanac	N. H. Wise
2017	article	World Scientific Publishing	International Journal of Wavelets Multiresolution and Information Processing	Applications of wavelet transform on power engineering problems — A brief review	0	0	19	back proliferation • back spread AND neural • bolster vector machine • concealed layer • cross breed model • discrete Fourier change • fake neural • fast Fourier change • fluffy deduction • fluffy rationale • hereditary calculation • manufactured neural • molecule swarm • moving normal (ARIMA) • sel...	Cabanac	Guillaume Cabanac
2021	chapter	Wiley	Green Internet of Things and Machine Learning	Machine Learning-Enabled Techniques for Reducing Energy Consumption of IoT Devices	0	0	18	brilliant metering • brilliant AND keen AND savvy AND shrewd • counterfeit neural • field programmable entryway exhibit • irregular woodland • keen city • keen gadget • keen home • man-made brainpower • savvy metering • shrewd city • shrewd home • shrewd metering • sun oriented force • uphold vector...	Cabanac	Guillaume Cabanac

Year	Doctype	Publisher	Venue	Title	Citations	Altmetric	Tips ↓	Tortured Phrases	Assessor
2021	proceeding	Institute of Electrical and Electronics Engineers (IEEE)	2021 International Conference on Advances in Computing, Communication, and Control (ICAC3)	HVAC Hybrid Control methods for HEE in Buildings: Overview	0	0	9	back spread AND neural • counterfeit neural • enhancement calculation AND optimiz* • fluffy rationale • hereditary calculation • profound neural organization • square blunder • warm solace • warmth move	Invitation for human assessors
2019	proceeding	Institute of Electrical and Electronics Engineers (IEEE)	2019 4th International Conference on Recent Trends on Electronics, Information, Communication & Technology (RTEICT)	Handling 3vs of Big Data Through Swarm Intelligence	1	0	7	computerized reasoning • enhancement calculation AND optimiz* • figuring asset • genuine esteemed • hereditary calculation • molecule swarm • wellness esteem	Invitation for human assessors



Microarray Gene Expression Analysis Using Fuzzy Logic (MGA-FL)

First International Conference on Sustainable Technologies for Computational Intelligence (2019) - 1 Comment
doi: 10.1007/978-981-13-1951-8_16 issn: 2194-5357 issn: 2194-5365

Daksh Khanna, Tanupriya Choudhury, A. Sai Sabitha, Nguyen Gia Nhu

#1 Elisabeth M Bik

This article costs € 27.20 / \$ 32.20 on the Springer website. I would not recommend to purchase it, however.

This paper appears to contain "Tortured Phrases": non-sensical, synthetic text generated by synonym converter tools, as described in this preprint by Cabanac, Labbé, and Magazinov, arXiv:2107.06751 - <https://arxiv.org/abs/2107.06751>. As explained in the preprint, text might have been 'synonymized' to mask plagiarism.

Parts of this paper appear to contain synonymized paragraphs from Wikipedia (https://en.wikipedia.org/wiki/DNA_microarray):

- Wikipedia: "Each DNA spot contains picomoles (10EXP-12 moles) of a specific DNA sequence, known as probes (or reporters or oligos). These can be a short section of a gene or other DNA element that are used to hybridize a cDNA or cRNA (also called anti-sense RNA) sample (called target) under high-stringency conditions. Probe-target hybridization is usually detected and quantified by detection of fluorophore-, silver-, or chemiluminescence-labeled targets to determine relative abundance of nucleic acid sequences in the target. The original nucleic acid arrays were macro arrays approximately 9 cm × 12 cm and the first computerized image based analysis was published in 1981."
- Khanna et al. (2019): "Each Deoxyribonucleic Acid spot consist of micro-moles (appx. 11 mol) of a particular Deoxyribonucleic Acid progression, justified as tests (or writers or oligos). It can be a small territory of a quality or other DNA segment which is used to hybridize a complementary DNA/complementary RNA (in like manner called antagonistic to identify Ribonucleic Acid) test (called centre) under high-stringency terms. Test object hybridization is normally recognized and acquired through distinguishing proof of "fluorophore-, silver-, or chemiluminescence"—named centres to choose relatively abundant nucleic destructive game plans for the goal. The principal nucleic destructive displays were expansive scale groups around 9 cm × 12 cm and the fun- damental modernized picture based examination was circulated in 1981."

Figure 1 looks identical to a Wikimedia file found here:

https://commons.wikimedia.org/wiki/File:Microarray_exp_horizontal.svg

Text from Section 3 appears to be a synonymized version of Fernando Díaz et al., Using Fuzzy Patterns for Gene Selection and Data Reduction on Microarray Data, IDEAL 2006, LNCS 4224, pp. 1087 – 1094, 2006, DOI: 10.1007/11875581_129. Here is an example:

AI Techniques for COVID-19

IEEE Access (2020) - 2 Comments
doi: 10.1109/access.2020.3007939 issn: 2169-3536

Adedoyin Ahmed Hussain, Ouns Bouachir, Fadi Al-Turjman, Moayad Aloqaily

#1 N. H. Wise

This paper already has 34 citations, I guess because Covid-19 and AI are both very hot topics, but appears to have been written using a thesaurus engine to avoid plagiarism detection.

The abstract alone contains the tortured phrases 'neural systems' for 'neural networks', and 'edge significant learning', which only gives 10 results on Google, most of which are for this paper.

The first paragraph of the introduction is in unusual language and contains telling incorrect definitions of abbreviations, such as 'mad-made brainpower (AI)', and ends with 'Meanwhile, Insilico Medicine situated in Hong Kong as of late declared that it's AI calculations had planned six new atoms that could end viral replication'.

The rest of the introduction is in a similar style and contains the tortured phrases 'twofold tree' (for 'binary tree' for 'dual tree?') and 'convolutional neural system (CNN)'.

Many other sections of the paper contain tortured phrases and nonsensical sentences, suggesting much of the paper has been plagiarised.

report permalink Reply

#2 Salsola Zygothylla

This paper contains a prime example of thesaurus gone wild: "extreme intense respiratory disorder (SARS)". Given that those who use the PubPeer browser plugin are going to be directed to this page whenever this paper turns up in a search or on a web page, it seems both fair and useful to ask the authors: What contribution to knowledge do you think you have made with this publication? The same question could fairly and usefully be asked of those who cited it.

Polymers, responsiveness and cancer therapy

Artificial Cells Nanomedicine and Biotechnology (2019) - 1 Comment
doi: 10.1080/21691401.2018.1559176 issn: 2169-1401 issn: 2169-141x pubmed: 30688110

Anil M. Pethe, Khushwant S. Yadav

#1 N. H. Wise

This paper contains tortured phrases suggesting the use of a thesaurus engine to avoid plagiarism detection. Specifically, it refers to 'corrosive' instead of 'acid', leading to:

- 'nucleic corrosive' - nucleic acid
- 'acrylic corrosive' - acrylic acid
- 'phosphoric corrosive' - phosphoric acid



Low cost Covid-19 preliminary diagnosis utilizing cough samples and keenly intellective deep learning approaches

Alexandria Engineering Journal (2021) - 1 Comment
doi: 10.1016/j.aej.2020.09.032 issn: 1110-0168

D. Sudaroli Vijayakumar, Monica Sneha

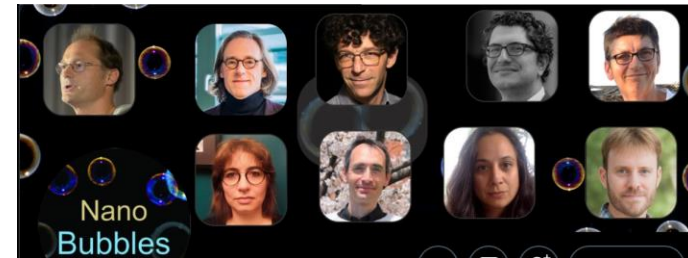
#1 N. H. Wise

This paper contains phrases that suggest the use of a thesaurus engine to avoid plagiarism detection. Examples include:

- 'Nucleic Corrosive Enhancement Tests (NAAT)' - Nucleic acid amplification tests
- 'real-time Turn around Translation Polymerase Chain Response (rRT-PCR)' - real-time reverse transcription polymerase chain reaction
- 'flag to clamor' - signal to noise
- 'sifted flag' - filtered signal



Despite the paper being on 'cough', 'cough' only appears in the title, abstract and **once** in the body of the text. Instead, 'hack' appears over 40 times, including in section titles.



<https://nanobubbles.hypotheses.org>

Cloud-Based Breast Cancer Prediction Empowered with Soft Computing Approaches

Journal of Healthcare Engineering (2020) - 1 Comment
doi: 10.1155/2020/8017496 issn: 2040-2295 issn: 2040-2309 pubmed: 32509260

Farrukh Khan, Muhammad Adnan Khan, Sagheer Abbas, Atifa Athar, Shahan Yamin Siddiqui, Abdul Hannan Khan, Muhammad Anwaar Saeed, Muhammad Hussain

#1 Diradops Cardena

This article shows clear evidence of 'tortured phrases'. To give a few examples:

- **bosom malignancy** (breast cancer)
- **Prepreparing** (preprocessing)
- **crusty logic** (crisp logic, a term anyone who is writing a paper on fuzzy logic could be expected to know!)
- **imitation** (simulation)


Considering that this paper deals with the clinical applications of ML for a potentially fatal disease, it's rather inappropriate and dangerous that it slipped past controls.

There's also a lot of extremely trivial maths, which appears to have been included for no other purpose than to 'bulk up' the paper (see eqns. 5-10, which might be appropriate in a high school textbook but not an academic paper).

Tortured Phrases as a tip from an informant...

Many other flaws to detect!

⚠ Expert knowledge needed


Guillaume Cabanac (@gcabanac@sciences.re) @gcabanac 27 Feb 2023
 The Problematic Paper Screener irit.fr/~Guillaume.Cabanac turns 2 today 🎂
 . Nine detectors screen the scientific literature using @DSDimensions. The PPS flagged 11k problematic papers using 'fingerprints' contributed by dozens of @PubPeer sleuths. To be reassessed: 4k papers... 🤖

3/10,000 problematic papers published in 2021:

- 68% affiliated to India
- 9% affiliated to China

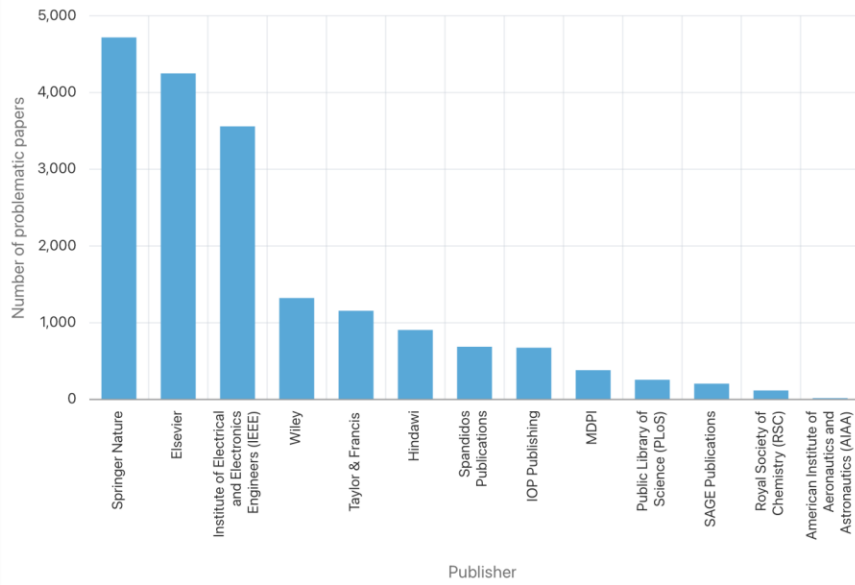
Citation count

360,721



1 - 20 of 22251 >

Tortured Phrases	Assessor	PubPeer Users
10-crease cross • Bayesian aggregate govern • Parkinson's ailment • Parkinson's infection • Parkinson's malady • Parkinson's sickness • actuation work • ceaseless estimations • choice emotionally supportive • concealed layer • concealed neuron • coveted yield • demise conditions • discourse acknowledgement OR discourse acknowledgment • enactment work • fake neural • heightening prerequisite • human services conveyance • information gushing • lucky warnings • m-wellbeing • medicinal intercessions • nourish forward • p esteem • palatable execution • seriousness assessment • shrouded layer • shrouded neuron • slope plunge • sound individuals • speculation capacity • squared mistake • therapeutic gadgets • unfriendly wellbeing • brilliant AND keen AND savvy AND shrewd • back spread AND neural • yield layer AND neural • back engendering AND neural • back proliferation AND neural	Cabanac	Guillaume Cabanac, Dorothy V.M. Bishop



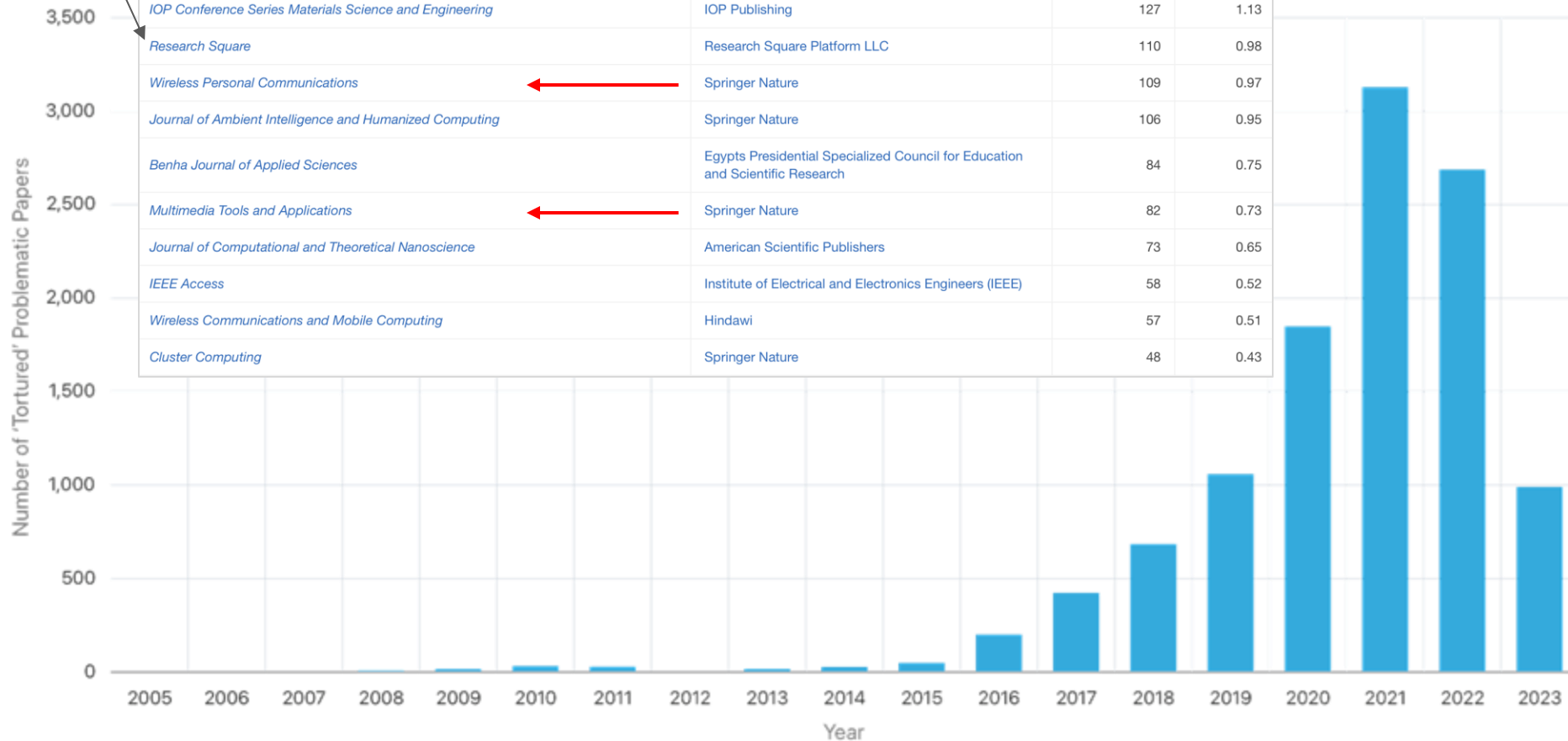
1 - 20 of 5458 >

Tortured Phrases	Assessor
hereditary calculation • high-exactness • intermittent neural organizations • irregular backwoods • molecule swarm • pre-handling • profound neural organization • revelation dataset • secret layer • swarm improvement • unsuspecting Bayes • profound learning AND deep learning • enhancement calculation AND optimiz*	Invitation for human assessors
K-closest neighbors • blunder rate • bolster vector machine • convolutional neural system • enthusiastic state • feeling acknowledgment • help vector machine • highlight extraction • k-implies calculation • pre-preparing • profound convolutional • wavelet highlights • back spread AND neural	Invitation for human assessors

Concentration of tortured phrases

Venue	Publisher	Number of articles ↓	Share of total (%)
<i>Materials Today Proceedings</i>	Elsevier	586	5.23
<i>Microprocessors and Microsystems</i>	Elsevier	328	2.93
<i>AIP Conference Proceedings</i>	AIP Publishing	213	1.90
<i>Journal of Physics Conference Series</i>	IOP Publishing	175	1.56
<i>SSRN Electronic Journal</i>	Elsevier	167	1.49
<i>IOP Conference Series Materials Science and Engineering</i>	IOP Publishing	127	1.13
<i>Research Square</i>	Research Square Platform LLC	110	0.98
<i>Wireless Personal Communications</i>	Springer Nature	109	0.97
<i>Journal of Ambient Intelligence and Humanized Computing</i>	Springer Nature	106	0.95
<i>Benha Journal of Applied Sciences</i>	Egypt's Presidential Specialized Council for Education and Scientific Research	84	0.75
<i>Multimedia Tools and Applications</i>	Springer Nature	82	0.73
<i>Journal of Computational and Theoretical Nanoscience</i>	American Scientific Publishers	73	0.65
<i>IEEE Access</i>	Institute of Electrical and Electronics Engineers (IEEE)	58	0.52
<i>Wireless Communications and Mobile Computing</i>	Hindawi	57	0.51
<i>Cluster Computing</i>	Springer Nature	48	0.43

Preprints



nature

NEWS | 27 May 2021 | Clarification [28 May 2021](#)

Hundreds of gibberish papers still lurk in the scientific literature

The nonsensical computer-generated articles, spotted years after the problem was first seen, could lead to a wave of retractions.

[Richard Van Noorden](#)

NEWS | 05 August 2021 | Correction [10 August 2021](#)

'Tortured phrases' give away fabricated research papers

Analysis reveals that strange turns of phrase may indicate foul play in science.

[Holly Else](#)

NEWS | 08 November 2021

Scammers impersonate guest editors to get sham papers published

Hundreds of junk-science papers have been retracted from reputable journals after fraudsters used 'special issues' to manipulate the publication process. And the problem is growing.

[Holly Else](#)

"It is very worrying," says Guillaume Cabanac, a computer scientist at the University of Toulouse in France, who has worked to uncover nonsense science papers in special issues. He adds that it is shocking to see such papers in journals from 'flagship' publishers and that "it is not only predatory journals that publish bullshit".



July 19, 2021 Adam Marcus

‘Tortured phrases’, lost in translation: Sleuths find even more problems at journal that just flagged 400 papers

August 26, 2021 Ivan Oransky

Guest editor says journal will retract dozens of inappropriate papers after his email was hacked

September 22, 2021 Adam Marcus

“[T]hese shit comments”: Author of a nonsense paper responds on PubPeer

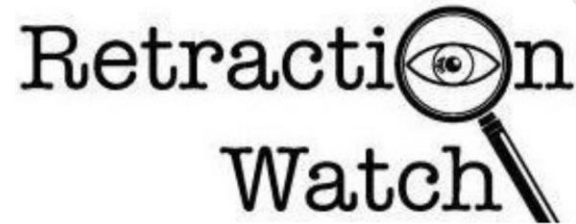


September 28, 2021 Ivan Oransky

Springer Nature slaps more than 400 papers with expressions of concern all at once

November 4, 2021 Adam Marcus

Springer Nature geosciences journal retracts 44 articles filled with gibberish



February 23, 2022 Ivan Oransky

Publisher retracts 350 papers at once



NATURE'S 10

Ten people who helped shape science in 2021.

The Nature's 10 list explores **key developments in science** this year and some of the people who played important parts in these milestones. Along with their colleagues, these individuals helped to make **amazing discoveries** and brought attention to **crucial issues**. Nature's 10 is not an award or a ranking. The selection is compiled by Nature's editors to highlight key events in science through the compelling stories of those involved.

Feature Nature's 10

Guillaume Cabanac Deception sleuth

This computer scientist helped to uncover a new kind of fabricated paper.

By Diana Kwon

Underground creepy crawlly state. Bosom malignancy. Sun oriented force. These might sound like expressions from a work of fiction, but they are actually strange translations, pulled from the scholarly literature, of scientific terms – ant colony, breast cancer and solar energy, respectively. Guillaume Cabanac, a computer scientist at the University of Toulouse, France, spots such bizarre phrases in academic papers every day.



Winnie Byanyima / Friederike Otto / Zhang Rongqiao /
Timnit Gebru / Tulio de Oliveira / John Jumper /
Victoria Tauli-Corpuz / Guillaume Cabanac /
Meaghan Kall / Janet Woodcock

The Nature's 10 list explores key developments in science this year and some of the people who played important parts in these milestones. Along with their colleagues, these individuals helped to make amazing discoveries and brought attention to crucial issues. Nature's 10 is not an award or a ranking. The selection is compiled by Nature's editors to highlight key events in science through the compelling stories of those involved.

ILLUSTRATION BY ELENA GALOYARDI BIANCHI

+dozens of sleuths on PubPeer



MODUS OPERANDI

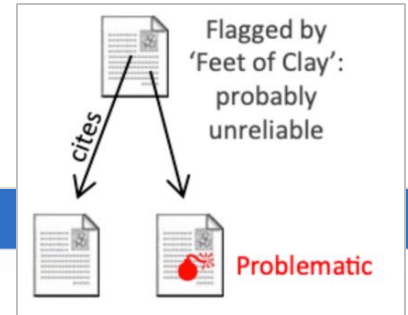
1. Algorithmic Text Generation: SCiGen
2. Plagiarism and Tortured Phrases
3. Peer Review Hacking
4. Paper Mills
5. Citation Hacking

CONSEQUENCE

1. Feet of Clay Literature

Detector Feet of Clay →

science contributes to the wall of knowledge



☰ **Problematic Paper Screener**

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 - 📄 SBIR
 - 🔍 Suspect
 - 🔍 Seek&Blastn
 - 🔍 Problematic Cell Lines
 - 🔍 Citejacked
 - 🔍 **Feet of Clay**
 - 📄 Journal Cases

Feet of Clay Detector

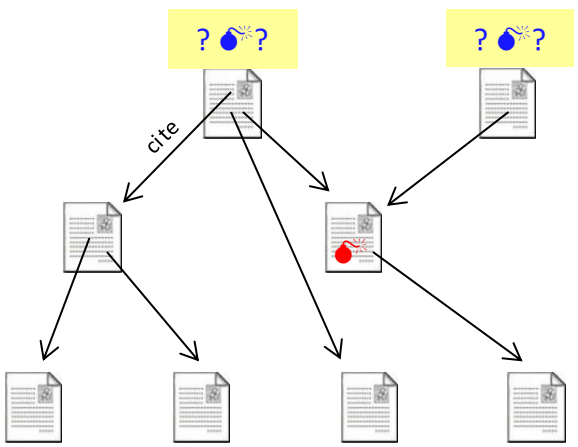
These papers may be unreliable as they cite problematic papers tabulated on the PPS (more on the [origin of](#) **Feet of Clay**).

👤 Please post True Positives on [PubPeer](#): the last column will link to your PubPeer comment.

🗣️ Report True/False Positives, ideas, or else using the [Feedback](#) feature.

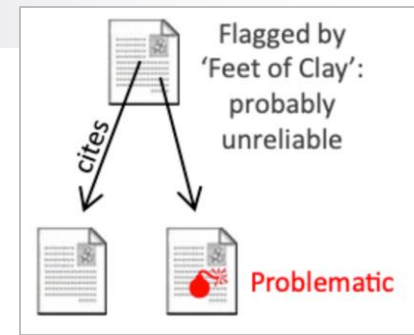
1. Primary Report Rows 20

Year	Doctype	Publisher	Venue	Title	Citations	Altmetric	Tips ↓
2019	article	Springer Nature	<i>Clinical and Translational Oncology</i>	miRNA signatures in childhood sarcomas and their clinical implications	14	3	58
2012	article	SAGE Publications	<i>Journal of Vibration and Control</i>	RETRACTED: On dynamic access control in web 2.0 and cloud interactive information hub: trends and theories	3	0	56



time passing: knowledge accumulation

Feet of Clay: Stopping error propagation



Guillaume Cabanac (@gcabanac@s... @gca... · 28 Sep

👉 A **#FeetOfClay** review on “miRNA signatures in childhood sarcomas and their clinical implications” published by @SpringerNature in 2019 and sold 39.95 €. It cites 51 (now) retracted papers and 6+ questionable ones. Is this article still reliable? pubpeer.com/publications/0...

#2 Guillaume Cabanac commented September 2023

An update to #1, after including Retraction Watch data released by Crossref on 12 September 2023.

Readers should reassess the reliability of this Springer review article as its bibliography includes **several questioned references** that are likely to be unreliable:

- 51 retracted or withdrawn references
- 6 questioned references

So far, the following have been spotted:

Questioned References Cited	Details
10.3727/096504017x14907375885605 retraction	[2017] <i>Oncology Research Featuring Preclinical and Clinical Cancer Therapeutics</i> : Long Noncoding RNA LINC01133 Functions as an miR-422a Sponge to Aggravate the Tumorigenesis of Human Osteosarcoma. Hai-Feng Zeng • Hai-Yan Qiu • Fa-Bo Feng
10.3727/096504017x14982578608217 retraction	[2017] <i>Oncology Research Featuring Preclinical and Clinical Cancer Therapeutics</i> : Dexmedetomidine Inhibits Osteosarcoma Cell Proliferation and Migration, and Promotes Apoptosis by Regulating miR-520a-3p. Xiaoyan Wang • Yongguang Xu • Xinlei Chen • Jianmin Xiao
10.1371/journal.pone.0119225 retraction	[2015] <i>PLOS ONE</i> : MicroRNA-153 Inhibits Osteosarcoma Cells Proliferation and Invasion by Targeting TGF-β2. Guangfeng Niu • Bin Li • Li Sun • Chenggong An
10.1371/journal.pone.0175553 retraction	[2017] <i>PLOS ONE</i> : MicroRNA-448 suppresses osteosarcoma cell proliferation and invasion through targeting EPHA7. Xiangkun Wu • Lihua Yan • Yongxi Liu • Wenfeng Xian • Liuyu Wang • Xunmeng Ding
10.1371/journal.pone.0115300 retraction	[2014] <i>PLOS ONE</i> : RETRACTED > MicroRNA-33b Suppresses Migration and Invasion by Targeting c-Myc in Osteosarcoma Cells. Ning Xu • Zimu Li • Zhanghe Yu • Feng Yan • Yang Liu • Xiaofeng Lu • Weiliang Yang
10.1371/journal.pone.0102621 retraction	[2014] <i>PLOS ONE</i> : The Tumor-Suppressive MicroRNA-135b Targets c-Myc in Osteosarcoma. Zheng Liu • Guangwu Zhang • Jian Li • Jiabang Liu • Pengfeng Lv
10.1371/journal.pone.0121175	[2015] <i>PLOS ONE</i> : The Downregulation of MiR-182 Is Associated with the Growth and Invasion of Osteosarcoma Cells through the Regulation of TIAM1 Expression. Jun Hu • Guohua Lv • Shuguang

ALT



Guillaume Cabanac (@gcabanac@sc... @gca... · 9 Sep

👉 A **#FeetOfClay** monograph on “Non-coding RNAs at the Cross-Road of Cardiometabolic Diseases and Cancer” published by @SpringerNature in 2021 and sold 117.69 €. It cites 18 (now) retracted papers and 5+ questionable ones. Is this monograph still reliable? pubpeer.com/publications/9...

#1 Guillaume Cabanac commented September 2023

Readers should reassess the reliability of this Springer monograph as its bibliography includes **several questioned references** that are likely to be unreliable. So far, the following have been spotted:

Questioned References Cited	Details
10.1090/15384101.2018.1562285 retraction	[2019] <i>Cell Cycle</i> : RETRACTED ARTICLE: NEAT1 regulates Th2 cell development by targeting STAT6 for degradation. Shuman Huang • Dong Dong • Yaqian Zhang • Zhuo Chen • Jing Geng • Yulin Zhao
10.1090/15384047.2019.1596762 retraction	[2019] <i>Cancer Biology & Therapy</i> : A regulatory circuit of circ-MTO1/miR-17/QKI-5 inhibits the proliferation of lung adenocarcinoma. Binbin Zhang • Maolin Chen • Nan Jiang • Kefeng Shi • Runlin Qian
10.1090/15384101.2018.1556064 retraction	[2018] <i>Cell Cycle</i> : RETRACTED ARTICLE: TGF-β secreted by tumor-associated macrophages promotes proliferation and invasion of colorectal cancer via miR-34a-VEGF axis. Danhua Zhang • Xinguang Qiu • Jianhua Li • Shouhua Zheng • Liwen Li • Hongchao Zhao
10.1016/j.biopha.2018.05.078 retraction	[2018] <i>Biomedicine & Pharmacotherapy</i> : Long noncoding RNA PVT1 enhances the viability and invasion of papillary thyroid carcinoma cells by functioning as ceRNA of microRNA-30a through mediating expression of insulin like growth factor 1 receptor. Kun Feng • Yu Liu • Li-Juan Xu • Ling-Fei Zhao • Chao-Wen Jia • Ming-Yan Xu
10.1016/j.yexmp.2020.104436 retraction	[2020] <i>Experimental and Molecular Pathology</i> : LNCRNA Gas5 suppression protected HI-1 cells against hypoxia injury by sponging Mir-222-3p. Jie He • Henhua Dai • Qian Zhao • Jiانشu Guo • Chi Chen
10.1016/j.gene.2018.08.065 retraction	[2018] <i>Gene</i> : Long non-coding RNA LUC1 targets miR-185-5p and regulates cell mobility by affecting epithelial-mesenchymal transition in melanoma via Wnt/β-catenin signaling pathway. Xige Chen • Juan Gao • Yanhua Yu • Zhengjuan Zhao • Yingli Pan
10.1007/s00011-020-01364-8 retraction	[2020] <i>Inflammation Research</i> : RETRACTED ARTICLE: Knockdown of long non-coding RNA TUG1 depresses apoptosis of hippocampal neurons in Alzheimer's disease by elevating microRNA-15a and repressing ROCK1 expression. Xia Li • Sheng-Wu Wang • Xi-Ling Li • Feng-Yuan Yu • Hai-Ming Cong
10.1016/j.omtn.2020.02.007 retraction	[2020] <i>Molecular Therapy - Nucleic Acids</i> : lncRNA PVT1/MicroRNA-17-5p/PTEN Axis Regulates Secretion of E2 and P4, Proliferation, and Apoptosis of Ovarian Granulosa Cells in PCOS. Gelin Liu • Shengxian Liu • Guanlin Xing • Fang Wang
	[2016] <i>Cancer Cell International</i> : RETRACTED ARTICLE: Long noncoding

ALT



MODUS OPERANDI

1. Algorithmic Text Generation: SCIgen
2. Plagiarism and Tortured Phrases
3. Peer Review Hacking
4. Paper Mills
5. Citation Hacking

CONSEQUENCE

1. Feet of Clay Literature



Actors: *scammers* who are pseudo-authors
gatekeepers failing to enforce peer review
publishers not monitoring their products
policy makers promoting Publish or Perish

Motive: promotion, recognition, symbolic capital

Modus operandi: plagiarism, journal hijacking, buying of citations

Consequences: pollution of the literature
erosion of the trust society places in science

Detectives: professional and scientists and hobbyists
volunteers contributing *pro bono*

Aim: curative decontaminate the literature
preventive anticipate new manipulations

Means: Decentralised re-assessment supported by the
Problematic Paper Screener



[https://fr.wikipedia.org/wiki/Dépollution](https://fr.wikipedia.org/wiki/D%C3%A9pollution)

Volunteers decontaminating a beach after the *Prestige* spillover of 2002.