

Improving the Correction and Retraction Process and Communication about It

Kathleen Hall Jamieson, Ph.D.

Corrections and Retractions: Upgrading the Scientific Record

June 17, 2025

Forecast

Background (increasing “retractions;” polarization)

The need for:

- Communicating clearly about the process of protecting the integrity of scholarly work
- Prompt retraction
- Substance of the retraction/correction

Appropriate coverage of the retraction/correction in the press

Protecting the publication record

- No longer cited
- No longer included in systematic reviews

Background: Retractions within the Past Decade

- The Retraction Watch Database documents **38,991** retractions, expressions of concern, corrections, and reinstatements within the past decade (June 17th, 2015 to June 16th, 2025). (Retraction Watch Database, via <http://retractiondatabase.org/RetractionSearch.aspx>)

The Retraction Watch Database

PLEASE NOTE: The best way to make use of this database is to download it from [here](#), thanks to the [acquisition of the database](#) by Crossref. We have also made changes to the search functionality to maintain reliability. For more information, read our [User Guide](#).

Please consider a U.S. tax-deductible donation to help us to continue to update and improve this important resource.

Retraction or Other Notices

Title/Subject(s)/Journal --- Publisher/Affiliation(s)/Retraction Watch Post URL(s)

50 Items Displayed Out of 38,991 Item(s) Found

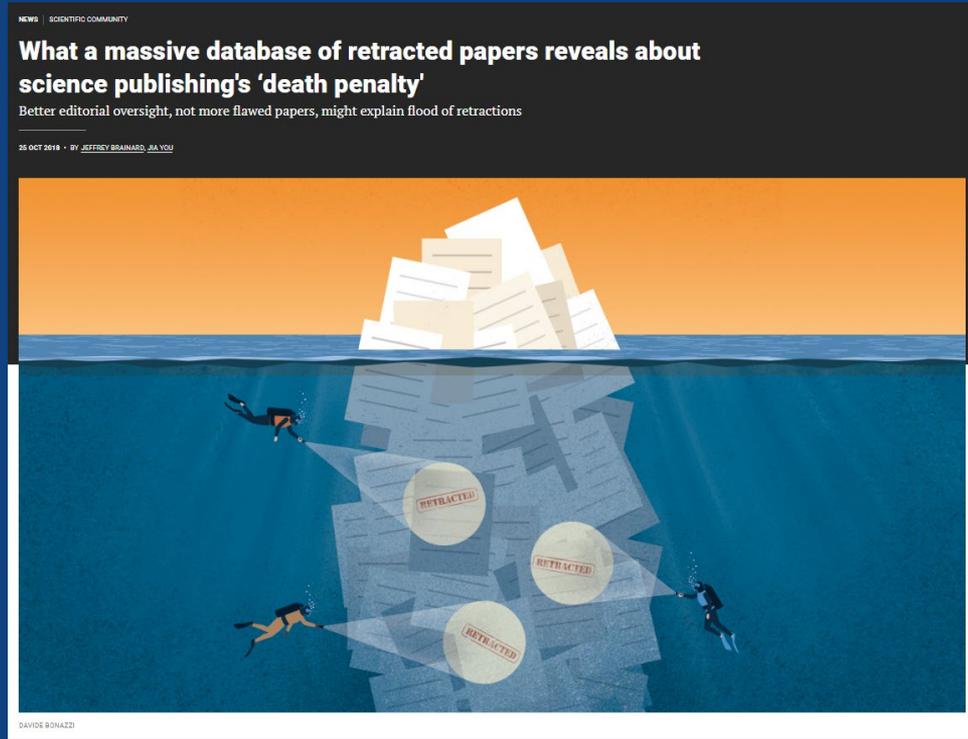
Background

“Although the absolute number of annual retractions has grown, the rate of increase has slowed.”

“Much of the rise appears to reflect improved oversight at a growing number of journals.”

“Relatively few authors are responsible for a disproportionate number of retractions.”

Brainard, J. & You, J. “What a massive database of retracted papers reveals about science publishing’s ‘death penalty,’” *Science* (2018).



Background

Commentary

The politicization of retraction

Samuel V. Bruton  

Received 08 Jan 2025, Accepted 23 Apr 2025, Published online: 28 Apr 2025

 Cite this article  <https://doi-org.proxy.library.upenn.edu/10.1080/08989621.2025.2498428>  Check for updates

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ABSTRACT

The retraction of flawed scientific journal articles is one of the most important means by which science “self-corrects.” The prevailing consensus is that retraction is appropriate only when the

Recently, however, retractions seem to be occurring for political reasons. This trend is exemplified by recent editorial guidance from *Nature and Human Behavior* which advises the retraction of works that risk significant harm to members of certain social groups.

public trust in science and may encourage scientists to self-censor their work, leading to the under-exploration of some important scientific issues.

Bruton, S.V. The politicization of retraction. *Accountability in Research*. (2025).

Background

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SCIENCE

When Do Scholarly Retractions Become a Form of Censorship?

Focusing on the handful of papers that are retracted for political reasons can obscure the more important problems afflicting the field of academic publishing.



Ivan Oransky

21 APR 2025 · 12 MIN READ

Oransky, I. Why Do Scholarly Retractions Become a Form of Censorship? Quillette [https://quillette.com/2025/04/21/when-do-scholarly-retractions-become-a-form-of-censorship/#:~:text=Even%20more%20so%20than%20in,science%20at%20Portland%20State%20University.\(2025\).](https://quillette.com/2025/04/21/when-do-scholarly-retractions-become-a-form-of-censorship/#:~:text=Even%20more%20so%20than%20in,science%20at%20Portland%20State%20University.(2025).)

Background: RFK Jr. Calls for “In-House” Publications

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News | Article | May 29, 2025

RFK Jr Suggests Creating “In-House” Publications for Government Scientists

Bonavitacola, J. “RFK Jr Suggests Creating ‘In-House’ Publications for Government Scientists,” *The American Journal of Managed Care*, <https://www.ajmc.com/view/rfk-jr-suggests-creating-in-house-publications-for-government-scientists>, (May 29, 2025).

STAT+ | POLITICS

‘Corrupt’ medical journals have to change, RFK Jr. says, or the NIH will publish in-house

Oza, A. “‘Corrupt’ medical journals have to change, RFK Jr. says, or the NIH will publish in-house,” *STAT*, <https://www.statnews.com/2025/05/27/rfk-jr-says-medical-journals-corrupt-so-nih-may-publish-in-house/> (May 27, 2025).



● May 29, 2025

RFK Jr. May Bar Scientists From Publishing in ‘Corrupt’ Journals

Palmer, K. “RFK Jr. May Bar Scientists From Publishing in ‘Corrupt’ Journals,” *Inside Higher Ed*, <https://www.insidehighered.com/news/quick-takes/2025/05/29/rfk-jr-may-bar-publishing-federal-research-top-journals> (May 29, 2025).

Key Ideas

Background (increasing “retractions;” polarization)

The need for:

- Communicating clearly about the process of protecting the integrity of scholarly work
- Prompt retraction
- Substance of the retraction/correction

Appropriate coverage of the retraction/correction in the press

Protecting the publication record

- No longer cited
- No longer included in systematic reviews

Communicating about the process of protecting the integrity of the scholarly record

Erratum: correction of journal's production error

Corrigendum: correction of author's error

Expression of concern: signals that there is a potential issue with a source (e.g. if an editor receives inconclusive evidence of misconduct, an investigation into the issue would be unfair or inconclusive)

Retraction: signals that a source is “seriously flawed or erroneous” and contains “conclusions [that] cannot be relied upon”

(Wager, et al., “Retractions: Guidance from the Committee on Publication Ethics (COPE).” Committee on Publication Ethics (COPE), 2009.)
Note these distinctions do not appear in the 2019 COPE retraction guidance.

Are other distinctions needed?

How well are these reasons for retraction signaled by the word “retraction?”

- Three reasons associated with misconduct, as defined by the Office of Science and Technology in 2000:
 - Fabrication
 - Falsification
 - Plagiarism
- Reasons associated with misconduct that do *not* fall under the federal definition of misconduct:
 - Forged authorship
 - Fake peer reviews
 - Failure to obtain approval from institutional review boards
- Reasons not associated with misconduct:
 - Honest error
 - Reproducibility issues

(Brainard and You, “What a massive database of retracted papers reveals about science publishing’s ‘death penalty.’” *Science*, 2018)

The need to incentivize correction

“Nearly 40% of retraction notices did not mention fraud or other kinds of misconduct”

(Brainard and You, “What a massive database of retracted papers reveals about science publishing’s ‘death penalty.’” *Science*, 2018)

“Reliance on the term ‘retraction’ may create a disincentive to act in the best interest of science. The word ‘retraction,’ with its negative connotation, covers withdrawal of scholarship both for inadvertent error and for misconduct... Alternative nomenclature such as ‘voluntary withdrawal’ and ‘withdrawal for cause’ might remove stigma from the former while upping it for the latter” (Alberts et al., “Self-correction in science at work.” *Science*, 2015)

INSIGHTS

Design principles for synthetic ecology p. 1425 •

Whacking hydrogen into metal p. 1429



SCIENTIFIC INTEGRITY

Self-correction in science at work

Improve incentives to support research integrity

By Bruce Alberts,¹ Ralph J. Cicerone,² Stephen E. Fienberg,³ Alexander Kamb,⁴ Marcia McNutt,^{1*} Robert M. Nerem,⁵ Randy Schekman,⁶ Richard Shiffrin,⁷ Victoria Stodden,⁸ Subra Suresh,⁹ Maria T. Zuber,¹⁰ Barbara Kline Pope,¹¹ Kathleen Hall Jamieson^{12*}

Week after week, news outlets carry word of new scientific discoveries, but the media sometimes give suspect science equal play with substantive discoveries. Careful qualifications about what is known are lost in categorical headlines. Rare instances of misconduct or instances of irreproducibility are translated into concerns that science is broken. The Octo-

ber 2013 *Economist* headline proclaimed “Trouble at the lab: Scientists like to think of science as self-correcting. To an alarming degree, it is not” (1). Yet, that article is also rich with instances of science both policing itself, which is how the problems came to *The Economist’s* attention in the first place, and addressing discovered lapses and irreproducibility concerns. In light of such issues and efforts, the U.S. National Academy of Sciences (NAS) and the Annenberg Retreat at Sunnyslands convened our group to examine ways to remove some of the current disincentives to high standards of integrity in science.

Like all human endeavors, science is imperfect. However, as Robert Merton noted more than half a century ago “the

activities of scientists are subject to rigorous policing, to a degree perhaps unparalleled in any other field of activity” (2). As a result, as Popper argued, “science is one of the very few human activities—perhaps

the only one—in which errors are systematically criticized and fairly often, in time, corrected”

(3). Instances in which scientists detect and address flaws in work constitute evidence of success, not failure, because they demonstrate the underlying protective mechanisms of science at work.

Still, as in any human venture, science writ large does not always live up to its ideals. Although attempts to replicate the 1998 Wakefield study alleging an association between autism and the MMR (measles,

Downloaded from https://www.science.org at University of Pennsylvania Libraries July 18, 2023

SCIENCE

The need to incentivize correction

“Retractions are a key tool for maintaining the integrity of the published record. We need to recognize and reward researchers, especially early-career researchers, who do the right thing in coming forward with a request to retract research that cannot be relied upon due to honest error.”

Breaking the stigma of retraction. *Nature Human Behavior* 5, 1591 (2021).
<https://doi.org/10.1038/s41562-021-01266-7>.

nature human behaviour

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Editorial | Published: 16 December 2021

Breaking the stigma of retraction

[Nature Human Behaviour](#) 5, 1591 (2021) | [Cite this article](#)

5091 Accesses | 44 Altmetric | [Metrics](#)

Retractions are a key tool for maintaining the integrity of the published record. We need to recognize and reward researchers, especially early-career researchers, who do the right thing in coming forward with a request to retract research that cannot be relied upon due to honest error.

It is by now common knowledge that, although retractions are overall rare, they have become much more frequent in the new millennium. Despite initial alarm, it is also now understood that this is actually a good thing rather than a sign of rampant fraud¹: the result of intensified efforts by journals, scientists and other actors (such as the Committee on Publication Ethics or initiatives such as Retraction Watch) to take active steps in a systematic way to ‘clean up’

Key Ideas

Background (increasing “retractions;” polarization)

The need for:

- Communicating clearly about the process of protecting the integrity of scholarly work
- **Prompt retraction**
- Substance of the retraction/correction

Appropriate coverage of the retraction/correction in the press

Protecting the publication record

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The need for prompt retraction

Wakefield

Date of publication:
February 28th, 1998

Date of retraction:
February 2nd, 2010

Obokata

Date of publication:
January 29th, 2014

Date of retraction:
July 2nd, 2014

THE LANCET

The Lancet, Volume 351, Issue 9103, Pages 637 - 641, 28 February 1998
doi:10.1016/S0140-6736(97)11096-0

This article was retracted

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

Dr [AJ Wakefield](#) FRCS a [EJ](#), [SH Murch](#) MB B, [A Anthony](#) MB B, [J Linne](#) PhD B, [DM Casson](#) MRCP B, [M Malik](#) MRCP B, [M Berelowitz](#) FRCPsych S, [AP Dillon](#) MRCPath a, [MA Thomsson](#) FRCP B, [P Harvey](#) FRCP d, [A Valentine](#) FRCP e, [SE Davies](#) MRCPath a, [JA Walker-Smith](#) FRCP a

Summary

Background
We investigated a consecutive series of children with chronic enterocolitis and regressive developmental disorder.

Methods
12 children (mean age 6 years [range 3–10], 11 boys) were referred to a paediatric gastroenterology unit with a history of normal development followed by loss of acquired skills, including language, together with diarrhoea and abdominal pain. Children underwent gastroenterological, neurological, and developmental assessment and review of developmental records, ileocolonoscopy and biopsy sampling, magnetic-resonance imaging (MRI), electroencephalography (EEG), and lumbar puncture were done under sedation. Barium follow-through radiography was done where possible. Biochemical, haematological, and immunological profiles were examined.

RETRACTED

Retraction Note | Published: 02 July 2014

Retraction Note: Stimulus-triggered fate conversion of somatic cells into pluripotency

[Haruko Obokata](#), [Teruhiko Wakayama](#), [Yoshiki Sasai](#), [Koji Kojima](#), [Martin P. Vacanti](#), [Hitoshi Niwa](#), [Masayuki Yamato](#) & [Charles A. Vacanti](#)

Nature 511, 112 (2014) | [Cite this article](#)

63k Accesses | 21 Citations | 415 Metric | [Metrics](#)

- The [Original Article](#) was published on 24 September 2013
- The [Original Article](#) was published on 24 September 2013
- A [Correction](#) to this article was published on 30 July 2014
- A [Retraction](#) to this article was published on 02 July 2014
- The [Original Article](#) was published on 29 January 2014
- This article has been [updated](#)

Nature 505, 641–647 (2014); doi:10.1038/nature12968

Key Ideas

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The need to communicate that retraction is evidence that error was caught and remedied

According to the [Committee on Publication Ethics](#), notices of retraction should:

- Be linked to the retracted (i.e., in all online versions)
- Clearly identify the retracted article (e.g. by including the title and authors in the retraction heading)
- Be clear (no ambiguity)
- Be published in the same journal (or journal website)
- Be freely available to all subscribers
- State what was retracted
- State the reason(s) for retraction
- Be objective, factual, and avoid inflammatory language

Not included: how the error was caught and/or remedied

(“COPE Retraction guidelines.” COPE Council, 2019)

The need to communicate that retraction is evidence that error was caught and remedied

Retraction Watch adds that notices of retraction should:

- Indicate which aspects of the paper are affected (i.e. which specific data or conclusions are invalid)
- Communicate swiftly to indexes (e.g. PubMed, Thomson Scientific's Web of Knowledge)
- Indicate when the error was caught and remedied
- Indicate whether the error was caught and remedied early from
- Indicate whether the error was caught and remedied
- Indicate whether other papers by the same group will be affected
- Only include statements about more recent replications if these have been validated by a third party
- Indicate whether the authors will be sanctioned by the journal
- Indicate whether any lawsuits have been filed regarding the case

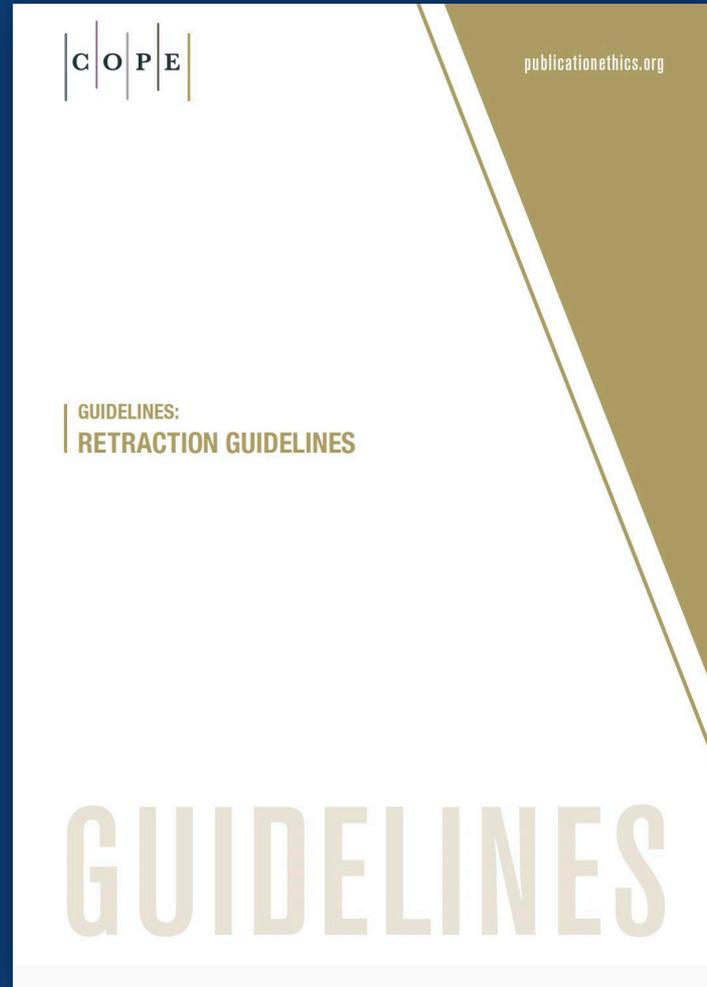
Not included: how the error was caught and/or remedied

(Oransky, "What should an ideal retraction notice look like?" Retraction Watch, 2015)

Communicating identity of agent initiating retraction

- Editors should have final say about the retraction process and statement
- There are certain instances in which the journal's owner will issue a retraction
- Importantly, the agent(s) initiating the retraction must identify themselves(self) in the statement of retraction

COPE Council. COPE Guidelines: Retraction Guidelines. November 2019.
<https://doi.org/10.24318/cope.2019.1.4>



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A focus on retraction as self-indictment rather than retraction as self-correction fueled a 2013-2019 media narrative asserting that science is broken or in crisis

Appropriate press coverage

Briefing | Unreliable research

Trouble at the lab

Scientists like to think of science as self-correcting. To an alarming degree, it is not



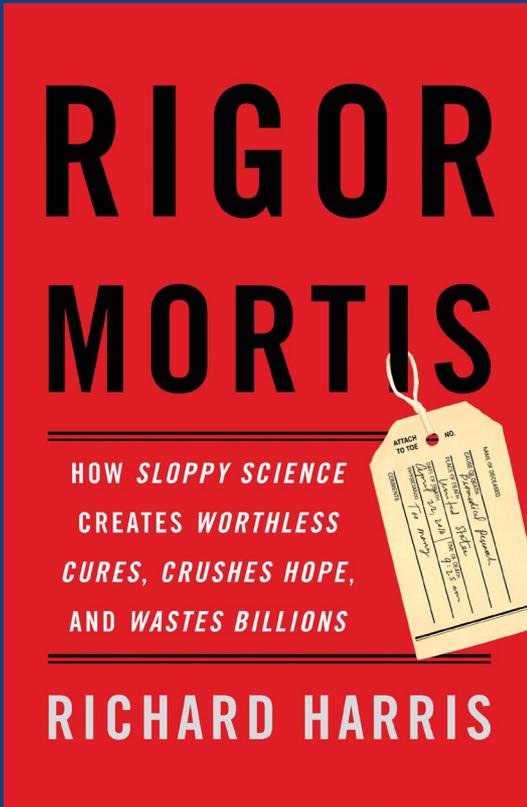
Oct 18th 2013

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Trouble at the lab. *The Economist*. <https://www-economist-com.proxy.library.upenn.edu/briefing/2013/10/18/trouble-at-the-lab> (2013).

RIGOR MORTIS

HOW SLOPPY SCIENCE
CREATES WORTHLESS
CURES, CRUSHES HOPE,
AND WASTES BILLIONS



RICHARD HARRIS

Harris, R. *Rigor Mortis*. Basic Books (2017).

A focus on retraction as self-indictment rather than retraction as self-correction fueled a 2013-2019 media narrative asserting that science is broken or in crisis

CHAPTER

8 Science as “Broken” Versus Science as “Self-Correcting”: How Retractions and Peer-Review Problems Are Exploited to Attack Science

Joseph Hilgard, Kathleen Hall Jamieson

<https://doi-org.proxy.library.upenn.edu/10.1093/oxfordhb/9780190497620.013.9>
Pages 84–92
Published: 06 June 2017

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Abstract

After showing that the frame “science is broken” is beginning to appear in mainstream media, this chapter examines the ways in which retractions and problems in peer review are characterized, both in media and by partisans, as confirmation that the scientific enterprise is untrustworthy. Media coverage of two widely reported retractions is examined to determine how the prevalence and meaning of retractions are framed. The role of the availability heuristic in prompting overgeneralization of scientific misconduct is noted. To promote trust in science, ways to communicate a “science as self-correcting” frame and to convey the rarity of retractions are explored.

Keywords: science as self-correcting, retractions, peer review, media, partisans
Subject: Social Psychology, Psychology
Series: Oxford Library of Psychology

Hilgard, J. & Jamieson, K.H. Science as “Broken” Versus Science as “Self-Correcting”: How Retractions and Peer-Review Problems Are Exploited to Attack Science. In Jamieson, K.H. et al. (Eds.) *The Oxford Handbook of the Science of Science Communication*. Oxford University Press (2017).

PNAS

RESEARCH ARTICLE | SOCIAL SCIENCES

Crisis or self-correction: Rethinking media narratives about the well-being of science

Kathleen Hall Jamieson | [Authors Info & Affiliations](#)

Edited by Richard M. Shiffrin, Indiana University, Bloomington, IN, and approved September 25, 2017 (received for review June 16, 2017)

March 12, 2018 | 115 (11) 2620-2627 | <https://doi.org/10.1073/pnas.1708276114>

23,946 | 39

PDF/EPUB

Abstract

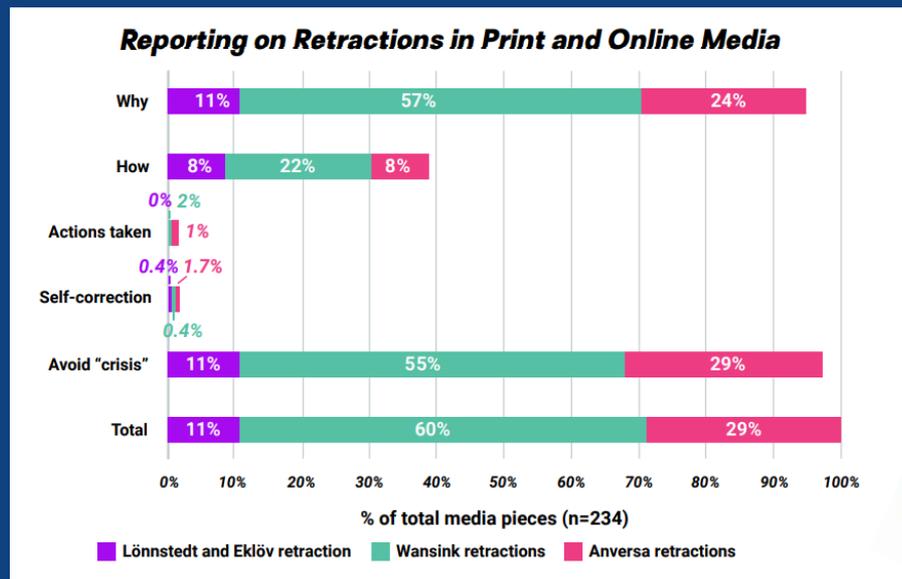
After documenting the existence and exploring some implications of three alternative news narratives about science and its challenges, this essay outlines ways in which those who communicate science can more accurately convey its investigatory process, self-correcting norms, and remedial actions, without in the process legitimizing an unwarranted “science is broken/in crisis”

Jamieson, K.H. Crisis or self-correction: Rethinking media narratives about the well-being of science. *PNAS* (2018).

Unless retraction highlights how the error was caught and/or remedied, media coverage will focus on the problem

APPC Science Media Monitor analyzed 234 news pieces from 2016 to 2019 covering the retraction of three scientific publications.

- **Why:** 92% of sources noted the reason for retraction
- **How:** 38% indicated how the error was identified
- **Actions taken:** 3% described measures the scientific community is taking to avoid similar errors
- **Self-correction:** 3% noted that retractions are evidence of science as a self-correcting process
- **Avoid “crisis”:** 95% avoided arguing that science is in crisis



“Problems Explored: Media Coverage of Science Identifies Problems – and Solutions” Annenberg Public Policy Center, 2020.

Key Ideas

Background (increasing “retractions;” polarization)

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Indicators of whether retractions protect the publication record: citations

“Retraction led to a decrease in average annual citation frequency from about 5 before, to 2 citations after retraction... Put differently, we found only a limited effect of retraction: retraction decreased citation frequency only by about 60%, as compared to non-retracted papers. Thus, retracted papers often live on.”

Kühnberger, et al., “Self-correction in science: The effect of retraction on frequency of citations.” *PLoS One*, 2022

PLoS One, 2022; 17(12): e0277814. PMID: PMC9728909
 Published online 2022 Dec 7. doi: [10.1371/journal.pone.0277814](https://doi.org/10.1371/journal.pone.0277814) PMID: [36477092](https://pubmed.ncbi.nlm.nih.gov/36477092/)

Self-correction in science: The effect of retraction on the frequency of citations

[Anton Kühnberger](#), Conceptualization, Data curation, Methodology, Project administration, Resources, Supervision, Validation, Writing – original draft, Writing – review & editing,^{1, 2,*} [Daniel Streit](#), Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Software, Validation, Visualization, Writing – original draft,¹ and [Thomas Scherndl](#), Conceptualization, Data curation, Formal analysis, Methodology, Project administration, Resources, Software, Supervision, Writing – review & editing¹

Venkatesh Shankar Madhugiri, Editor

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Abstract [Go to: ►](#)

We investigate the citation frequency of retracted scientific papers in science. For the period of five years before and after retraction, we counted the citations to papers in a sample of over 3,000 retracted, and a matched sample of another 3,000 non-retracted papers. Retraction led to a decrease in average annual citation frequency from about 5 before, to 2 citations after retraction. In contrast, for non-retracted control papers the citation counts were 4, and 5, respectively. Put differently, we found only a limited effect of retraction: retraction decreased citation frequency only by about 60%, as compared to non-retracted papers. Thus, retracted papers often live on. For effective self-correction the scientific enterprise needs to be more effective in removing retracted papers from the scientific record. We discuss recent proposals to do so.

Indicators of whether retractions protect the publication record: citations

“[R]etracted papers receive more attention after publication not only on social media but also, on heavily curated platforms, such as news outlets and knowledge repositories, amplifying the negative impact on the public.”

“[R]etraction is not an effective tool to reduce online attention to problematic papers.”

Peng, H. Romero, D.M., & Horvát, E. “Dynamics of cross-platform attention to retracted papers,” *PNAS* 119 (25) e2119086119, <https://doi.org/10.1073/pnas.2119086119> (2022).



The image shows the header of a PNAS research article. It includes the PNAS logo, the text 'RESEARCH ARTICLE | SOCIAL SCIENCES', an 'OPEN ACCESS' icon, and a 'Check for updates' button. The title of the article is 'Dynamics of cross-platform attention to retracted papers'. The authors listed are Hao Peng, Daniel M. Romero, and Emőke-Ágnes Horvát. Below the authors, it states 'Edited by Susan Fiske, Princeton University, Princeton, NJ; received October 18, 2021; accepted April 19, 2022'.

PNAS RESEARCH ARTICLE | SOCIAL SCIENCES OPEN ACCESS Check for updates

Dynamics of cross-platform attention to retracted papers

Hao Peng^a, Daniel M. Romero^{a,b,c,1}, and Emőke-Ágnes Horvát^{d,e,f,1}

Edited by Susan Fiske, Princeton University, Princeton, NJ; received October 18, 2021; accepted April 19, 2022

Indicators of whether retractions protect the publication record in systematic reviews



Retracted randomized controlled trials were cited and not corrected in systematic reviews and clinical practice guidelines

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Accepted 24 June 2022; Published online 30 June 2022

Abstract

Background and Objectives: To investigate whether and when the correction is done in Systematic Reviews (SRs) and Clinical Practice Guidelines (CPGs) when included Randomized Controlled Trials (RCTs) have been retracted.

Methods: In this meta-epidemiological study, we included SRs and CPGs citing the retracted RCTs from the Retraction Watch Database. We investigated how often the retracted RCTs were cited in SRs and CPGs. We also investigated whether and when such SRs and CPGs corrected themselves.

Results: We identified 587 articles (525 SRs and 62 CPGs) citing retracted RCTs. Among the 587 articles, 252 (43%) were published after retraction, and 335 (57%) were published before retraction. Among 127 articles published citing already retracted RCTs in their evidence synthesis without caution, none corrected themselves after publication. Of 335 articles published before retraction, 239 included RCTs that were later retracted in their evidence synthesis. Among them, only 5% of SRs (9/196) and 5% of CPGs (2/43) corrected or retracted their results.

(Kataoka, et al., "Retracted randomized controlled trials were cited and not corrected in systematic reviews and clinical practice guidelines." *Journal of Clinical Epidemiology*, 2022)

Key Ideas

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