Research Square

Preprints are preliminary reports that have not undergone peer review.
They should not be considered conclusive, used to inform clinical practice,
or referenced by the media as validated information.

Citation Reuse After Article Reinstatement: Evidence from Three Restoration Events

Shaoyi Miao

aoyamasho1989@gmail.com

Independent Researcher

Research Article

Keywords: retraction, reinstatement, citations, scholarly communication, research integrity, scientometrics

Posted Date: November 4th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-11320757/v1

License: This work is licensed under a Creative Commons Attribution 4.0 International License. Read Full License

Additional Declarations: No competing interests reported.

Abstract

The formal reversal of a retraction restores an article's publication status, but it is not known whether authors who previously cited that article reuse the citation in subsequent work. We followed prior-citing author units across three verified article-restoration events, using Crossref/Retraction Watch, publisher records, and OpenAlex. Of 27 locked author units, 15 cited at least one member of a prespecified, pre-retraction co-citation set during the interruption. Their first eligible post-restoration topical outputs yielded 12 author units with observable reference lists, represented by nine distinct publications; none re-cited the restored article (0/12 units). Three other author units, represented by two abstracts without observable reference lists, remained missing, giving a no-imputation bound of 0%–20% across all 15 selected units. Eight of the 12 observable units, represented by six distinct publications, cited at least one member of the same predefined set after restoration. No confirmed focal re-citation was observed within one or two years in the 27-unit cohort. By 1 October 2026, later indexed re-citation appeared for six author units (four publications), all in the GENOMICS event. These case-based results distinguish restoration of publication status from the timing and observability of subsequent citation reuse, without identifying functional substitution or causal effects.

1. Introduction

Retraction is one of the strongest formal interventions available for correcting the scholarly record. Yet the formal status of an article and its realized position in scientific communication are not the same thing. Retracted papers can remain searchable, accessible, and citable, and a large literature shows that they often continue to receive citations after retraction (Budd et al., 1999; Schneider et al., 2020; Candal-Pedreira et al., 2020; Kühberger et al., 2022; Schmidt, 2024; García-Romero et al., 2026). Some post-retraction citations fail to acknowledge the retraction; others use unaffected methods, historical context, or claims that citing authors continue to regard as informative. The result is that formal correction does not instantaneously reconfigure the network of scholarly references.

Research on this problem has examined citation decline after retraction, the content or rhetorical role of post-retraction citations, the visibility of retraction status across information systems, and factors associated with continued citation. A single retracted article can sustain a substantial downstream citation network for years (Schneider et al., 2020), while larger matched and database studies show that retraction reduces but does not eliminate citation activity (Candal-Pedreira et al., 2020; Kühberger et al., 2022). More recent work has examined why some retracted publications remain influential and how disciplinary and prestige-related factors shape post-retraction citation patterns (Schmidt, 2024; García-Romero et al., 2026). This literature treats retraction as a formal signal whose downstream uptake can be incomplete.

The reverse transition is less studied. Retractions are sometimes withdrawn, reversed, or followed by a formal reinstatement of the original article. The underlying reasons vary: a retraction may have been issued in error, a publisher may reverse an earlier decision after further investigation, or a procedural problem may be corrected without invalidating the scientific content. Reinstatement repairs the formal state of the article, but it occurs after a period in which authors, databases, and research communities may have adapted to the article’s absence or uncertainty. Frampton et al. (2021), for example, noted that temporarily removed and later reinstated articles can create ambiguity over which version is valid and how the corrected state is communicated. The broader research-integrity literature likewise emphasizes that scholarly-record status must

propagate through multiple metadata and discovery systems before it can reliably affect researcher behavior (Schneider et al., 2022).

This raises a question about citation reuse after an editorial reversal. Among authors who cited a focal article before its retraction, remained active in its topic, and cited at least one work from a prespecified related-literature set while the adverse status was in force, does their first eligible topical output after reinstatement cite the focal article again? If not, is reuse observed in later outputs?

We address this question through a retrospective analysis of three verified same-article restoration events. Persistent author identifiers define the observational units; event-specific sets of related co-cited works are constructed from pre-retraction reference structure, without using later outcomes. We condition the primary analysis on interval citation of at least one set member. The primary endpoint is focal re-citation in the first eligible post-restoration topical output, while separately recording outputs whose bibliographies cannot be inspected. Secondary measurements report later focal re-citation and continued use of at least one set member.

The contribution is a traceable, conditional measure of whether an earlier citation relation reappears after the status of the same article is restored. It complements work on continued citation of retracted articles by following prior citers across the reverse formal transition. The observations describe citation reuse in these cases, rather than the effect of reinstatement on an otherwise expected citation rate.

2. Methods

2.1 Study design and data sources

We combined event histories from the Crossref-hosted Retraction Watch metadata and publisher notices with citation and authorship records from OpenAlex (Priem et al., 2022). Event dates and article identity were checked against publisher pages and PubMed where relevant. The observational sample was reconstructed from archived scholarly-record metadata; supporting derived author-level and event-level data are reported in Online Resource 1.

This retrospective study of historical restoration events used rules set before the focal-return outcomes were examined. Dated pre-outcome eligibility and unblinding records, including the fixed three-event cohort, are summarized in Online Resource 2. A separate result-blind validation reproduced the primary outcome and corrected one secondary first-work ordering (Online Resource 2, Section S2.5).

2.2 Restoration-event universe and event eligibility

We began from records classified as reinstatements or equivalent reversal events in the frozen Crossref/Retraction Watch scope. A registry label alone was not sufficient. A candidate event had to represent restoration of the same substantive article after a formal adverse article state. We excluded false-positive reinstatement labels, unrelated notice-link errors, retract-and-replace or republication cases, event histories for which the original article was not restored, and events whose chronology could not support the pre-specified analysis.

The frozen screening record identified 11 strict restoration families within its specified dataset and matching scope. These 11 are an analysis-specific screening denominator, not an estimate of all publisher reinstatements. Three cases subsequently met the combination of event-clock, citation-structure, persistent-author, interval-opportunity and topical-continuity criteria necessary for the author-level analysis.

The executable cases concerned a FASEB Journal article on Nogo expression, a Genomics article on pituitary development and a Circulation Research article on vascular calcification (Table 1). The downstream eligibility outcomes for all eleven screened families are reconstructed from dated pre-outcome checkpoints in Online Resource 2 (Table S2.1), with original row-level archive availability stated separately.

2.3 Focal events

FASEB. The focal article was *Molecular analysis of Nogo expression in the hippocampus during development and following lesion and seizure* (DOI 10.1096/fj.02-0453fje). The article was formally retracted in mid-2011 and reinstated through an Erratum and Addendum published on 1 August 2013. The reinstatement notice stated that the original article was restored with corrections and additional experiments.

GENOMICS. The focal article was *Discovery of transcriptional regulators and signaling pathways in the developing pituitary gland by bioinformatic and genomic approaches* (DOI 10.1016/j.ygeno.2008.11.010). The article was retracted on 21 March 2011 and formally reinstated on 1 November 2011 in the frozen event record.

CIRCRES. The focal article was *Ablation of Adenosine Monophosphate-Activated Protein Kinase α1 in Vascular Smooth Muscle Cells Promotes Diet-Induced Atherosclerotic Calcification In Vivo* (DOI 10.1161/CIRCRESAHA.116.308301). A formal retraction was issued on 13 October 2022; a retraction of that retraction was issued on 22 March 2023, restoring the article's status, followed by a correction.

2.4 Author units and topical continuity

The primary unit was a persistent OpenAlex Author ID (A-ID), not a name string. A candidate author had to carry the same literal A-ID on a pre-retraction work that directly cited the focal article and on the relevant interval opportunity. Names, ORCID identifiers, affiliations, and coauthor patterns were used only as corroborating information and never as substitutes for the persistent A-ID.

A complete unit required continued activity under event-specific actual-question topic gates, not generic disciplinary membership. The frozen topic branches, representative decisions and outstanding individual-source requirements are summarized in Online Resource 2 (Section S2.4).

Twenty-seven author units passed the complete pre-outcome design: seven in FASEB, eight in GENOMICS, and twelve in CIRCRES.

2.5 Interval decision opportunities

The design distinguished the date on which a paper appeared from the date on which the author could plausibly have made a citation decision. The preferred interval clock was an explicit received, submitted, or preprint date within the adverse-state interval. When such metadata were unavailable, publication date could serve as a fallback only after a 180-day buffer from the event boundary.

For shorter interruptions, a publication date alone could not establish a citation-decision opportunity: received, submitted or preprint evidence inside the interruption was required, or the original 180-day publication-date fallback had to apply. The same principle governed post-restoration opportunity selection. Examples and the original clock rules appear in Online Resource 2 (Table S2.3); first-work dates for included units are reported in Online Resource 1.

2.6 Predefined related-work sets

For each event, we constructed a substitute set entirely from pre-retraction citation structure. Let i index distinct pre-retraction source publications that cited the focal article after DOI/title deduplication (independence therefore refers to distinct source works, not distinct authors), R_i denote the deduplicated reference list of source work i, and L_i=|R_i|. For a candidate work j, define

$c_j = \Sigma_i I(j \in R_i)$

and

$S_j = [\Sigma_i I(j \in R_i) / L_i] / [\Sigma_i 1 / L_i]$

A candidate related work had to predate retraction and have been co-cited with the focal article by at least three distinct pre-retraction source works (c_j ≥ 3). The frozen rule ranked works by normalized score S_j, source frequency and canonical OpenAlex Work ID. Co-citation establishes relatedness, not functional substitution. The original frozen TOP20 rankings are now preserved for all three events; the underlying source-work reference-membership matrices remain incomplete (Online Resource 2, Section S2.3).

Later citation outcomes did not enter the candidate-set construction. The documented pre-unblinding alias checks and CIRCRES duplicate-work correction are summarized in Online Resource 2.

2.7 Primary and secondary outcomes

The interval set-use indicator equaled one when an eligible interval output of a locked author cited at least one member of that event's frozen TOP20 co-citation set. This rule did not require first-time use of that literature or absence of the restored focal article. Authors satisfying this indicator formed the 15-unit conditional core cohort; the term 'set use' is employed to avoid treating co-cited works as proven functional substitutes.

The primary **restored-focal return** outcome asked whether the author’s first eligible post-restoration topical publication cited the restored focal Work ID. The first work was determined by the frozen date and topic rules, not by whether it cited the focal article.

A publication with no observable bibliography was not coded as a negative citation outcome. It was classified as bibliography-unobserved. This occurred for three GENOMICS meeting or supplement abstracts.

Secondary endpoints were: (1) set-level continued use, defined by citation of at least one TOP20 member in the observable first post-restoration bibliography, which need not be the same work cited in the interruption; (2) the next reference-bearing strict-topic work as a sensitivity analysis for the three unobservable first-output bibliographies; (3) confirmed indexed focal re-citation within one and two years; and (4) first confirmed indexed focal re-citation through 1 October 2026.

2.8 Outcome firewall and Independent Validation

The archived research workflow records freezing of event, author, topic, clock and co-citation-set conditions before the corresponding outcomes were read. This historical ordering should not be interpreted as prospective recruitment or external preregistration.

A separate result-blind validation reproduced the primary author-level finding with scope corrections. A validated first-work ordering repair for one CIRCRES author changed the set-level continued-use numerator from 7 to 8 of 12 observable author units without changing any primary focal-return classification. The derived workbook records the current validated author-level values; the correction and source-access qualifications are documented in Online Resource 2 (Sections S2.5–S2.6).

2.9 Analysis

All estimates are descriptive counts and proportions with explicit author-unit denominators. Three missing core first-output bibliographies generate a no-imputation bound of 0/15 to 3/15 (0%–20%) for the conditional cohort, not a confidence interval or a population rate. The original event-count criteria precluded the planned pooled analysis. Online Resource 1 contains the derived 27-unit ledger, 15-unit subset, three included event summaries, outcome tables, follow-up timing and missingness sensitivity. Authors sharing the same first eligible work contribute distinct author units but not independent publications; both counts are reported below.

Online Resource 2 provides the reconstructed eleven-family eligibility trace, selected decision-clock evidence, source-version notes and the final validation correction. The preserved TOP20 rankings for FASEB, GENOMICS and CIRCRES are included in the publicly released derived-data archive (https://doi.org/10.5281/zenodo.23251878), as described in Section S2.3. The historical raw citation graph, source-work reference-membership matrices and complete primary-bibliography captures remain partial; the deposited verification scripts do not claim full source-to-result reconstruction.

2.10 AI assistance

OpenAI ChatGPT (GPT-5.6 Sol) assisted with manuscript drafting and the preparation of Figs. 1 and 2.

3. Results

3.1 Event screen and locked cohort

The strict screen contained eleven restoration families in its recorded scope; three supplied qualified author-level observations (Table 1). A reconstructed family-by-family execution trace is provided in Online Resource 2 (Table S2.1). Figure 1 shows the downstream author-unit and bibliography-observability flow.

The final locked sample contained 27 distinct persistent author units: seven in FASEB, eight in GENOMICS and twelve in CIRCRES. These are author-level observational units, not 27 independent publications or statistically independent citation decisions.

Table 1
Restoration events and locked author units

Event	Focal DOI	Adverse-state start	Formal restoration	Complete locked units	Core TOP20 set users
FASEB	10.1096/fj.02-0453fje	mid-June 2011	2013-08-01	7	4
GENOMICS	10.1016/j.ygeno.2008.11.010	2011-03-21	2011-11-01	8	7
CIRCRES	10.1161/CIRCRESAHA.116.308301	2022-10-13	2023-03-22	12	4
Total	—	—	—	**27**	**15**

3.2 Related-work set use during the interruption

Fifteen of the 27 locked author units cited at least one member of the prespecified related-work set in an eligible publication during the adverse-state interval: 4/7 in FASEB, 7/8 in GENOMICS and 4/12 in CIRCRES. This is interval set use, not an observed first adoption of a functionally substituting article.

The 15 core author units correspond to 11 distinct first eligible post-restoration publications. The other 12 author units remained in secondary follow-up analyses but not in the conditional primary denominator.

3.3 Primary return after formal restoration

Of the 15 core author units, 12 had observable reference lists in their first eligible post-restoration topical outputs. These 12 author units are represented by nine distinct publications, because coauthors may share the same reference list. None of the observable outputs cited the restored focal article (0/12 author units; zero of the nine distinct publications).

The remaining three core author units had first eligible outputs without an observable bibliography: one Biology of Reproduction supplement abstract shared by Sally Camper and Amanda Mortensen and one Endocrine Abstracts abstract by Daniel Kelberman. These are two distinct abstracts, not three different publications. The frozen first-output rule retained them as missing rather than substituting later reference-bearing articles.

The primary result is therefore 0/12 observed author-unit re-citations and three unobserved author-unit outcomes. Without imputing these three, the return proportion among all 15 conditionally selected author units is bounded from 0% to 20%. This bound is not a 95% confidence interval.

Event-specific observable primary results were 0/4 in FASEB, 0/4 in GENOMICS, and 0/4 in CIRCRES.

3.4 Continued related-work use and later focal re-citation

Eight of the 12 observable core author units cited at least one work from the prespecified TOP20 set in their first eligible post-restoration outputs: 3/4 in FASEB, 4/4 in GENOMICS and 1/4 in CIRCRES. These eight author units correspond to six distinct publications. The result measures continued set-level use, not necessarily persistence of the same citation edge or displacement of the focal work.

No indexed focal re-citation was confirmed within one year or within two years after formal restoration among the 27 locked author units. These are confirmed-record counts and must not be read as complete negative-citation verification across all possible bibliographic surfaces.

By 1 October 2026, later indexed focal re-citation was confirmed for six of 27 author units, five of them in the 15-unit conditional core. Those six author units corresponded to four distinct publications, all in GENOMICS. No such re-citation was confirmed for the seven FASEB or twelve CIRCRES units by the cutoff, although follow-up windows differ by event.

Table 2
Conditional author-unit outcomes by restoration event; counts sharing a reference list are not independent publications.

Event	Complete units	TOP20 set users	Observable core units	Missing core units	First-work focal re-citation	TOP20 set continued use	Later re-citation (all units)	Later re-citation (core)
FASEB	7	4	4	0	0/4	3/4	0/7	0/4
GENOMICS	8	7	4	3	0/4	4/4	6/8	5/7
CIRCRES	12	4	4	0	0/4	1/4	0/12	0/4
All	**27**	**15**	**12**	**3**	**0/12**	**8/12**	**6/27**	**5/15**

3.5 Missingness sensitivity and validation correction

In a sensitivity restricted to the next eligible reference-bearing topical output, the three originally unobservable GENOMICS author units contributed two focal re-citations (Camper and Mortensen, who shared one later publication) and one non-return (Kelberman). The resulting 2/3 author-unit sensitivity, or 2/15 if displayed alongside the 12 observable original outcomes, does not replace the prespecified primary endpoint and does not constitute two independent later publications.

Result-blind validation identified an earlier eligible CIRCRES first work for Yabing Chen (DOI 10.1161/ATVBAHA.123.319198; 11 January 2024). It cited a frozen TOP20 work but not the restored focal article, changing confirmed set-level continued use from 7/12 to 8/12 while leaving the primary return result unchanged. The validation record documents this correction; supporting timing information and source-access limitations are summarized in Online Resource 2 (Sections S2.5–S2.6).

4. Discussion

4.1 Formal restoration and citation-path recovery are different states

Among previously citing authors who used the prespecified co-cited literature set during an article's adverse-status interval, the first eligible post-restoration output did not cite the focal article in any of the 12 observable author units (nine distinct publications). This is a specific observation about re-citation at a defined next output, not evidence that authors would otherwise have reused the paper or that the related works displaced it.

Later indexed focal re-citation was confirmed for six author units in four publications, all in GENOMICS. Neither FASEB nor CIRCRES contributed a confirmed return by the common cutoff, and their follow-up lengths differed. Thus the cases share a first-eligible-output observation but not a demonstrated common delayed-recovery trajectory.

Publication-state correction and reuse of a specific citation are distinct observables. Following previous citing authors across a restoration event adds information that aggregate citation counts or the publisher's current status field alone cannot provide.

4.2 Relation to post-retraction citation research

Previous work has repeatedly shown that retraction does not erase a paper from scientific communication. Retracted articles can remain cited for years, and citation decline after retraction is often incomplete (Budd et al., 1999; Schneider et al., 2020; Candal-Pedreira et al., 2020; Kühberger et al., 2022). Case-study and citation-context research further shows that post-retraction citations are heterogeneous: some reflect unawareness, some discuss the retraction, and some continue to use informational or methodological elements of the work (Bar-Ilan & Halevi, 2017; Schmidt, 2024).

The specific contribution here is the reverse event at the level of the same reinstated article and its earlier citers. Citation-context case studies show that a retracted work may continue to be referenced for multiple reasons (Bar-Ilan & Halevi, 2017; Schmidt, 2024), and post-retraction studies quantify continued citation at larger scales. Those results do not directly measure whether the same earlier citer references the same article in a first eligible output after its formal reinstatement. The present conditional measurement addresses that narrower question without equating non-reuse with failed correction.

García-Romero et al. (2026) study post-retraction citation patterns across disciplines; our smaller design follows prior-citing authors across the reverse formal status transition. Sample size and conditional selection limit generalization, while the author-level and distinct-work denominators make the recorded observation inspectable.

4.3 Continued related-work set use

In eight of the 12 observable core author units, the first eligible post-restoration bibliography still contained at least one member of the predefined related-work set. This indicates continued use of part of a preselected citation environment. The measure cannot determine whether that work served as a functional substitute, whether it was newly adopted during retraction, or whether its continued use delayed re-citation of the restored article.

Related-literature citation and re-citation of the restored article need not be mutually exclusive. In the next reference-bearing sensitivity, Camper and Mortensen (sharing a later publication) cited the restored GENOMICS focal alongside works from the fixed set. The documented pattern is co-use within later literature, not a proven mechanism of substitution or path dependence.

4.4 Implications for scholarly-record correction

Research-integrity infrastructure has devoted substantial attention to making retractions visible across publisher pages, bibliographic databases, reference managers, and other discovery systems (Schneider et al.,

2022). Reinstatement raises a parallel challenge. Correcting an erroneous or reversed retraction requires not only changing a publisher page but also propagating the restored state through the systems researchers use.

For a scholarly-record correction, a status field reports the editorial action while a previous-citer re-citation measure reports a different outcome: whether the original reference is present in defined later outputs. Applying both measures avoids treating a record's restored label as evidence of how its earlier users cited it. Missing or negative observations cannot by themselves identify awareness, motivations, or metadata transmission failures.

The event histories themselves illustrate why the distinction is useful. FASEB formally restored an article through an erratum and addendum after further institutional evaluation. GENOMICS reversed a retraction that had not reflected invalid scientific findings. CIRCRES issued a retraction of an earlier retraction. These are different editorial pathways, but each creates the same downstream question: after the formal state is repaired, what happens to the scholarly path that had been interrupted?

4.5 Limitations

The case set is limited to three formally reinstated articles meeting restrictive event, author, time and topic requirements. The 15-unit conditional cohort was selected for interval use of predefined related literature, not as a representative sample of all scholars citing reinstated articles.

Authors and coauthors share source publications and bibliographies: 12 observable author units represent nine distinct first works, while six later returning author units represent four works. No independent-unit hypothesis test is performed. The findings do not establish expected next-paper re-citation probabilities or the effect of reinstatement on reference choices.

Three core first outputs (two abstracts) lacked observable bibliographies and remained missing; an alternative next reference-bearing endpoint is reported only as a sensitivity. The 0%–20% author-unit bound preserves this distinction.

Fourth, citation metadata can be incomplete. We used OpenAlex as the main citation graph, audited duplicate scholarly objects, and manually recovered publisher references when missing OpenAlex edges were material. These steps reduce false negatives in the audited cases but do not establish perfect coverage of every bibliography or every later citation surface.

5. Conclusion

Following three same-article restoration events, a defined cohort of previous citing authors showed no focal re-citation in the first eligible post-restoration works with observable bibliographies: 0/12 author units, represented by nine distinct publications, with three additional author units (two abstracts) remaining unobserved. Eight of the 12 observable units cited at least one member of a prespecified related-work set. These results capture conditional citation reuse, not demonstrated substitution or a causal response to reinstatement.

Later indexed focal re-citation was confirmed for six author units in four publications, all in GENOMICS, by 1 October 2026. Observing both a first-eligible-output absence and later re-citation in one restoration event

illustrates why publication-status restoration and the actual reuse of an earlier citation merit distinct measurement. Whether this pattern is common remains unresolved by these three cases.

Declarations

Competing interests

The author declares no competing interests.

Ethics approval

Not applicable. The study used publicly available scholarly metadata and did not involve human participants, animals, interventions, or private records.

Funding

This work received no specific grant from any funding agency, commercial or not-for-profit sectors.

Author Contribution

S.M. was responsible for research conceptualization and direction; study design and methodology; identification and screening of primary sources; case selection and eligibility criteria; data collection, extraction, cleaning and curation; software development and computational analysis; cross-source verification, quality control and validation; assessment of missing data and source limitations; interpretation of findings; preparation of reproducibility materials and data archiving; and final scientific decisions and approval of the manuscript.

Data Availability

The derived datasets, figures, and verification code are publicly available in Zenodo (https://doi.org/10.5281/zenodo.23251878). The deposit does not include all historical third-party source records.

Code availability

Python scripts to verify the deposited derived counts and regenerate the figures are available with the data at https://doi.org/10.5281/zenodo.23251878. They check reported outputs and figures; they do not independently reconstruct the complete historical citation graph from original upstream data.

References

1. Bar-Ilan, J., & Halevi, G. (2017). Post retraction citations in context: a case study. Scientometrics, 113, 547–565. https://doi.org/10.1007/s11192-017-2242-0

2. Budd, J. M., Sievert, M., Schultz, T. R., & Scoville, C. (1999). Effects of article retraction on citation and practice in medicine. Bulletin of the Medical Library Association, 87(4), 437–443.
3. Candal-Pedreira, C., Ruano-Ravina, A., Fernández, E., Ramos, J., Campos-Varela, I., & Pérez-Ríos, M. (2020). Does retraction after misconduct have an impact on citations? A pre-post study. BMJ Global Health, 5, e003719. https://doi.org/10.1136/bmjgh-2020-003719
4. Crossref. (2026). Retraction Watch metadata documentation. https://www.crossref.org/documentation/retrieve-metadata/retraction-watch/
5. Frampton, G., Woods, L., & Scott, D. A. (2021). Inconsistent and incomplete retraction of published research: A cross-sectional study on Covid-19 retractions and recommendations to mitigate risks for research, policy and practice. PLOS ONE, 16(10), e0258935. https://doi.org/10.1371/journal.pone.0258935
6. García-Romero, A., González-Mancebo, S., Espallardo-Ortega, C., & Concepción, M. A. (2026). The enduring influence of retracted research: determinants and citation patterns across three disciplines. Scientometrics, 131, 5685–5712. https://doi.org/10.1007/s11192-026-05699-7
7. Kühberger, A., Streit, D., Scherndl, T., et al. (2022). Self-correction in science: The effect of retraction on the frequency of citations. PLOS ONE, 17(12), e0277814. https://doi.org/10.1371/journal.pone.0277814
8. Miao, S. (2026). Citation reuse after article reinstatement: Derived data and reproducibility code (Version 1.0.0) [Data set]. Zenodo. https://doi.org/10.5281/zenodo.23251878
9. Priem, J., Piwowar, H., & Orr, R. (2022). OpenAlex: A fully-open index of scholarly works, authors, venues, institutions, and concepts. arXiv. https://doi.org/10.48550/arXiv.2205.01833
10. Schmidt, M. (2024). Why do some retracted articles continue to get cited? Scientometrics, 129, 7535–7563. https://doi.org/10.1007/s11192-024-05147-4
11. Schneider, J., Woods, N. D., Proescholdt, R., et al. (2022). Reducing the inadvertent spread of retracted science: recommendations from the RISRS report. Research Integrity and Peer Review, 7, 6. https://doi.org/10.1186/s41073-022-00125-x
12. Schneider, J., Ye, D., Hill, A. M., & Whitehorn, A. S. (2020). Continued post-retraction citation of a fraudulent clinical trial report, 11 years after it was retracted for falsifying data. Scientometrics, 125, 2877–2913. https://doi.org/10.1007/s11192-020-03631-1

Figures

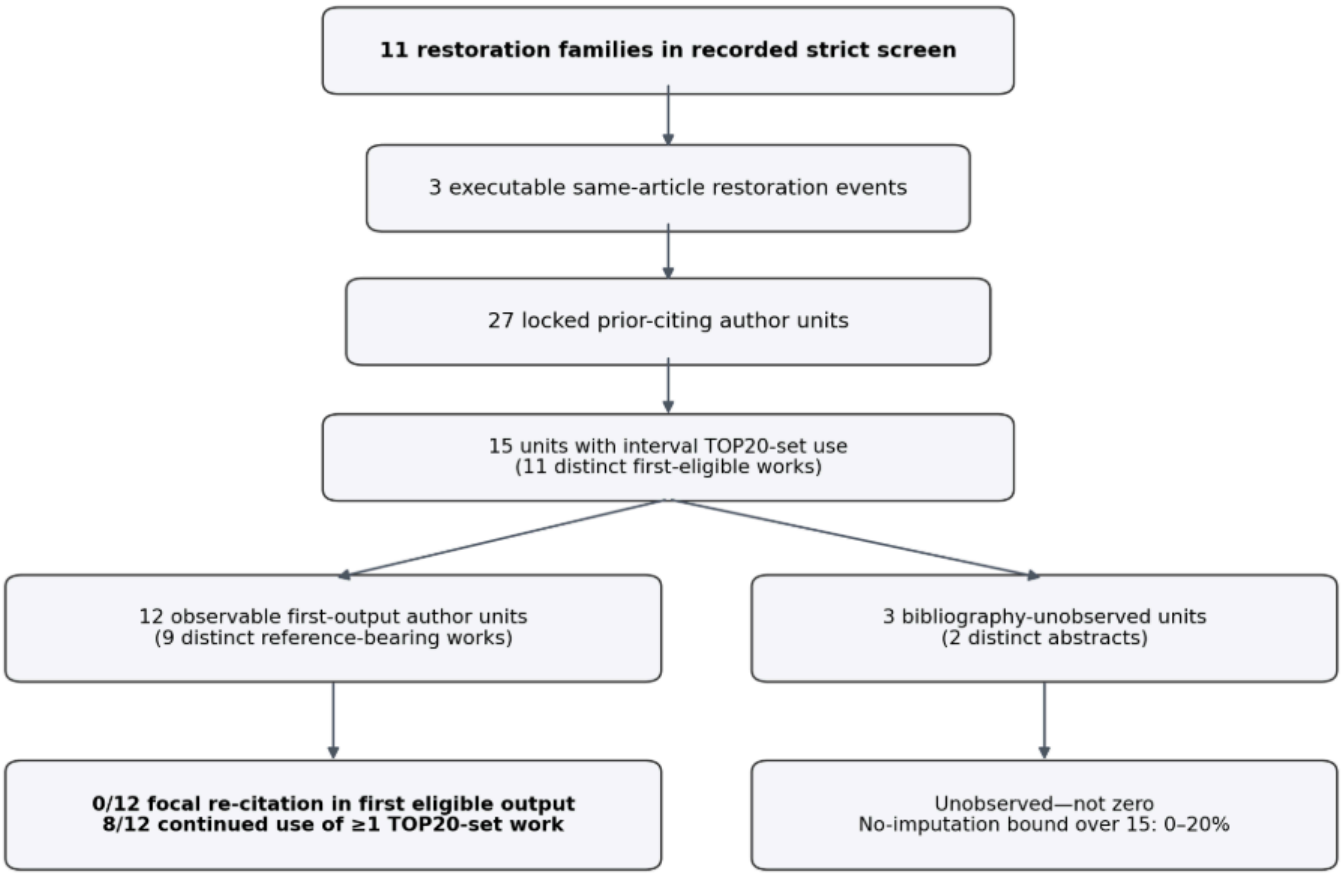


Figure 1

Case-screen and author-unit flow. Of 15 conditional core author units (11 distinct first eligible works), 12 had observable first-output bibliographies (nine distinct works); three were unobservable (two distinct abstracts). Counts are author units unless different works are specified. The source-checkpoint reconstruction of the screened families appears in Online Resource 2 — AI-assisted figure preparation; see Sect. 2.10

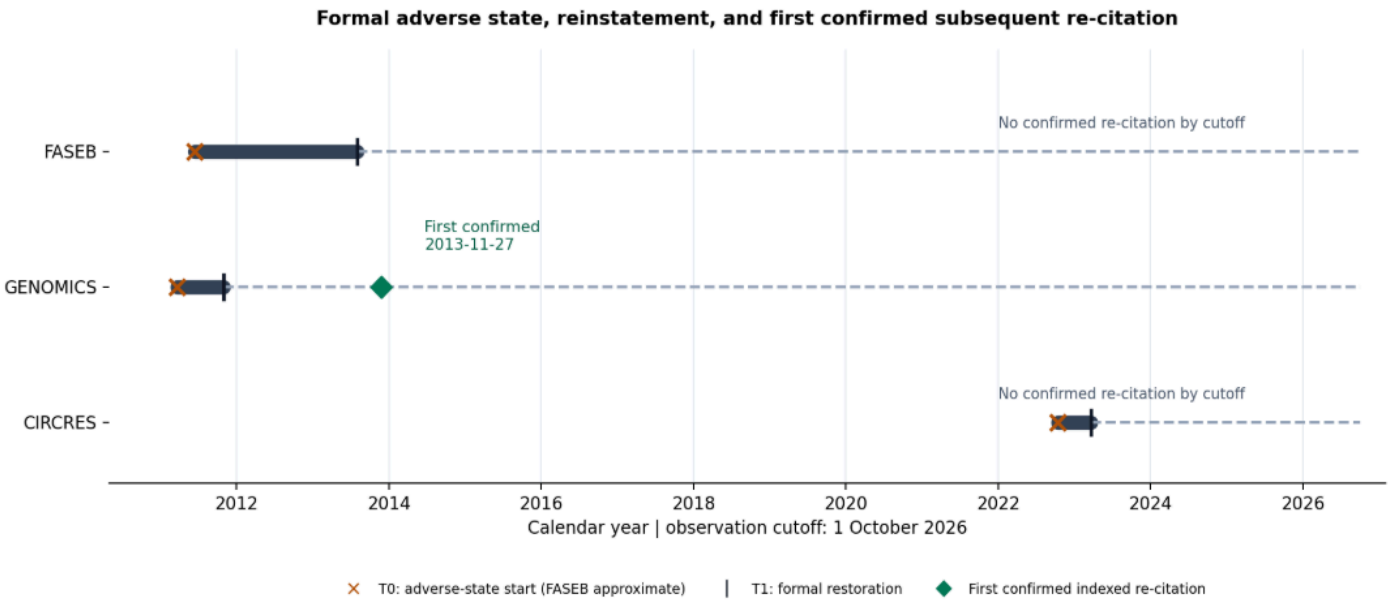


Figure 2

Event timelines. T0 marks the formal adverse article-status transition and T1 its formal reversal/reinstatement. The dashed follow-up interval ends on 1 October 2026; its length differs across cases. The figure depicts formal event clocks, not proof of the precise dates when authors selected references. FASEB T0 is plotted at mid-June 2011 only approximately — AI-assisted figure preparation; see Sect. 2.10

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- ESM1CitationData.xlsx
- ESM2Methods.pdf