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Commentary

# A Fair Possibility of Tracking Scientific Retractions through Crossref for Sustainability of Science

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**ABSTRACT**

Crossref's acquisition of the Retraction Watch database, announced on September 12, 2023, heralds a transformative era in research integrity. This commentary highlights the pivotal role played by this acquisition in preserving the trustworthiness of scientific research. By creating the most extensive open-source retraction database, it streamlines the identification of retractions, enhancing transparency and accessibility. Open access ensures global availability, benefiting researchers, publishers, and readers. Financial support secures sustainability, enabling the expansion of investigative journalism on retractions. This acquisition demonstrates the collective commitment to upholding rigorous scientific standards and advancing the future of research.

**Keywords:** Retraction Watch, Crossref, Center for Scientific Integrity, Academic publishing, Scientific Misconducts, Retracted Publications, Sustainability of Science, Research Nexus, Research Integrity, Open-source database.

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## INTRODUCTION

"A man who has committed a mistake, and doesn't correct it, is committing another mistake." -attributed to Confucius.

Transparency and honesty are crucial factors in upholding the legitimacy of scholarly work within the dynamic realm of scientific research (Miguel *et al*., 2014; Fosang, and Colbran, 2015; Prager *et al*., 2019). An essential component of maintaining integrity is on the capacity to discern and monitor retractions within the realm of scientific writing. Retractions, although occurring seldom, play a crucial role in upholding the integrity of academic publishing and ensuring the reliability of scientific outputs. Throughout the years, various organisations and people have made concerted efforts to establish extensive databases of retractions, with the aim of providing assistance to researchers, publishers, and readers in their respective pursuits.

The retraction of scientific publications serves as a crucial process in the academic discourse. The rectification of publications plagued by significant deficiencies, such as inaccuracies in data, unnecessary duplication of content, instances of intellectual property infringement, unethical research methodologies, and various attributes that contradict the integrity of the academic community, is of utmost importance (COPE, 2019). In recent times, there has been a noticeable increase in the frequency of retractions (Fang, and Casadevall, 2011; Azoulay, Bonatti, and Krieger, 217; Wray, and Andersen, 2018), and the "Retraction Watch" plays crucial role in monitoring the integrity of academic publishing and building the trustworthiness of scientific outputs. The growing trend towards enhanced accountability and transparency in scientific practices has prompted scientists to enhance the manner in which they record and disseminate their findings (Cosentino, and Veríssimo, 2016).

On September 12th, 2023, a noteworthy achievement was attained in the realm of research integrity as Crossref, a global infrastructure facilitating research communications, acquired the Retraction Watch database. The mutual agreement between the two organizations will enable Retraction Watch to continuously maintain and keep the data accessible, while also facilitating publishers in directly registering their retraction notices with Crossref. The significance of this acquisition lies not only in the collaboration between two notable organizations but also in its implications for the sustainability and trustworthiness of scientific research. In this commentary, the author endeavors to outline the evolution of "Retraction Watch"-from its origins as a journalism blog to its current status as a dependable resource for tracking scientific retractions. Additionally, the commentary delves into the role of Crossref in monitoring scientific retractions and ensuring their accessibility to the public, thus contributing to the sustainability of scientific endeavors.

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## The Background of Retraction Watch

In order to gain a comprehensive understanding of the ramifications associated with this transaction, it is imperative to possess a thorough comprehension of the historical background of Retraction Watch. Retraction Watch was established in 2010 by Adam Marcus and Ivan Oransky, initially serving as a journalistic blog aimed at unearthing overlooked narratives and evaluating the effectiveness of scientific rectification processes. Despite experiencing significant growth in terms of visibility and traffic, the Retraction Watch team operated with a relatively small workforce and encountered numerous challenges during their journey, primarily due to low resources.

During the years 2014 and 2015, three charitable organisations, namely the MacArthur Foundation, the Arnold Foundation (formerly known as Arnold Ventures), and the Helmsley Trust, recognized the absence of a comprehensive retraction database in the world and acknowledged the significance of Retraction Watch's goal. They observed a substantial number of retractions missing from commonly utilized sources by researchers, which encompassed PubMed, Web of Science, Scopus, and others. Furthermore, they acknowledged their efforts to manually document these retractions in spreadsheets, a task that they found challenging to sustain. They provided support not only for the preservation of journalism but also for the establishment of a complete retraction database. Thus the Retraction Watch Database, officially launched in 2018.

## A Quest for Sustainability

In pursuit of sustainability, Retraction Watch explored the possibility of granting licences for the database to various organisations, encompassing both commercial and nonprofit entities. These organisations would then be able to utilise the database to create products that facilitate academics in their efforts to locate retracted scholarly publications. The revenue from license fees, supplemented by various income streams, notably individual donations and a sub-contract from a grant awarded by the Howard Hughes Medical Institute (HHMI), has played a pivotal role in financially supporting Retraction Watch and its overseeing nonprofit organization, the Center for Scientific Integrity. Nonetheless, the aspiration has always existed to make the Database accessible to a broad audience, irrespective of their access to licensing tools, provided a financial model that is not contingent on such fees could be identified. The provision of data for scholarly research on retractions and related matters has always been conducted without charge. However, for a long time, the organization was suffering from constant financial difficulties in functioning smoothly.

## Crossref: The Ideal Partner

Under the circumstances, on September 12, 2023, the Center for Scientific Integrity and Crossref jointly announced the acquisition of the Retraction Watch database by Crossref, subsequently designating it as a publicly accessible resource (Hendricks *et al*., 2023). A collaborative agreement between these two organizations has been established to ensure the continuous population of data within the Retraction Watch database while maintaining unrestricted access. Simultaneously, this agreement facilitates the direct registration of retraction notices by publishers with Crossref. The agreement will establish a connection between data pertaining to the 42,000 retractions contained within the Retraction Watch database and Crossref's digital object identifier system in exchange for an upfront payment of $775,000 and an additional $120,000 each year, with an annual 5% increase, to be disbursed over a five-year period. This financial support will enable the nonprofit parent organization of Retraction Watch (the Center for Scientific Integrity), to hire an additional staff member. This addition complements the existing staff responsible for maintaining the database. Ivan Oransky, a co-founder of Retraction Watch and the full-time editor-in-chief of Spectrum, a news website with a focus on autism, mentioned that he and fellow co-founder Adam Marcus, who serves as a full-time editorial director at Medscape, will continue to forgo receiving salaries for their work on Retraction Watch. Oransky explains that he pursued financial backing from a nonprofit organization like Crossref to mitigate potential conflicts of interest. Previously, Retraction Watch accepted licensing fees from publishers to access Retraction Watch's data, all while publishing news articles that often entailed critiques of the publishers' retraction management practices.

Product Director Rachael Lammey says, “Crossref is focused on documenting and clarifying the scholarly record in an open and scalable form. For a decade, our members have been recording corrections and retractions through our infrastructure, and incorporating the Crossmark button to alert readers. Collaborating with Retraction Watch augments publisher efforts by filling in critical gaps in our coverage, helps the downstream services that rely on high-quality, open data about retractions, and ultimately directly benefits the research community.” However, the collaborative efforts aimed at establishing the most extensive single open-source retraction database mitigate redundancy, enhancing efficiency, transparency, and accessibility for all stakeholders.

## Key Highlights of the Acquisition and Impacts on Scientific Community

- After its acquisition by Crossref, The Retraction Watch Database will be made completely open and freely available to the scientific community everywhere. This free distribution guarantees that the information is available to researchers, publishers, and readers.
- Both Crossref and Retraction Watch share a common goal to enhance research integrity and trustworthiness. The

collaboration allows them to work together to create the largest single open-source database of retractions.

- Combining efforts to create this comprehensive database reduces duplication, streamlining the process of identifying and tracking retracted papers. This efficiency enhances transparency and accessibility for all stakeholders.
- Crossref's acquisition includes an acquisition fee and an annual fee for the next five years. This financial support ensures the sustainability of The Retraction Watch Database, a crucial achievement for any nonprofit organization.
- With sustainable funding for the database, the team behind Retraction Watch can focus on expanding their journalism efforts. This means more resources for investigative reporting on retractions and related issues, ultimately benefiting the research community.
- The availability of a comprehensive database of retractions enhances research integrity by enabling researchers to identify and avoid citing retracted work.
- Publishers can benefit from this database by registering their retraction notices directly with Crossref, contributing to a more efficient and transparent publishing process.

## CONCLUSION

The acquisition of The Retraction Watch Database by Crossref represents a notable advancement in the endeavour to uphold research integrity and credibility. The aforementioned statement demonstrates a dedication to promoting openness, inclusivity, and effectiveness in the dissemination of academic knowledge. Through this collaborative effort, the scientific community acquires a valuable asset that will assist in the identification and monitoring of retractions, so enhancing the credibility of intellectual endeavours. As we progress, it is imperative to acknowledge the significance of these activities in upholding the utmost standards of scientific study and publication. The acquisition of The Retraction Watch Database by Crossref exemplifies the efficacy of collaborative efforts and a shared objective in promoting the progress of scientific integrity.

## CONFLICT OF INTEREST

The authors declare no conflict of interest.

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