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Editorial

Why Research Retraction Due to Misconduct Should Be Stigmatized

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Many of us may remember Hester Prynne, the protagonist of Nathaniel Hawthorne's *The Scarlet Letter*, who was stigmatized for conceiving a daughter out of wedlock. The author's critical intent notwithstanding, the story shows the power of stigmatization. Stigmatization consists of "identifying and marking an undesirable characteristic in a way that narrows a person's social identity to that characteristic" [1] (p. 2706). It typically targets morally and physically undesirable traits. As a social force, it is powerful in marginalizing and containing individuals' behaviors because it can arouse shame in perpetrators and disqualify them from social acceptance. As Horwitz [2] notes, "informal sanctions are more powerful than formal ones because coercive social control is effective to the extent that it harms reputational status and social attachments" (pp. 224–225). While stigmatization usually has a bad name, we believe that it can be put to good use in curbing research retraction, a grave problem that is haunting the academic community.

Retractable research due to misconduct can give rise to various negative consequences for science and society. It can mislead subsequent research and impede scientific progress, waste rare resources, endanger a variety of stakeholders with decisions based on invalid research findings, and erode public trust in science. In recent years, there have been alarming increases in research retractions. As an illustration, a brief search of Nature Portfolio's database returned more than 100 retractions in last 12 months from this heavyweight science publisher's journals, including *Nature*, *Nature Communications*, and *Scientific Reports*. Covering a much wider spectrum of journals, the Retraction Watch Database documented over 4600 retractions in 2022, in comparison to 119 retracted papers in 2002 [3]. Although research can be retracted for a variety of reasons [4,5], most retractions are due to various forms of research misconduct such as data fabrication, data falsification, image manipulation, and plagiarism [6,7].

To facilitate the effective correction of tainted literature, the Committee on Publication Ethics (COPE) recommends against penalties for authors of retracted publications [8], and there are also calls for a shame-free environment to encourage proactive retraction [9–11]. However, as rightly pointed out by May R. Berenbaum, editor-in-chief for the *Proceedings of the National Academy of Sciences*, "simply publishing a retraction isn't an effective way to 'kill' a [retracted] paper" [12] (p. 2). Studies have found that retracted papers have continued to be cited in the literature, even more than 11 years after they were originally retracted [13–15]. It is an acknowledged fact that eliminating a retracted paper from the scientific literature is a mission that is impossible today [12,16].

Against the rising tide of retractions due to misconduct and because of the long-lasting consequences of retracted research in the scientific literature, we argue that a more effective solution to the problem is to pre-empt retractable papers in the first place. To achieve this goal, guilty authors should be stigmatized in the communication (e.g., retraction notices) and handling (e.g., confirmed institutional investigations) of retractions to leverage the power of stigmatization to deter misconduct effectively [17]. For example, retraction notices can stigmatize perpetrators by distinguishing guilty authors, highlighting their accountability for retraction, disclosing forms of misconduct warranting retraction, exposing a

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lack of cooperation in allegation investigations, revealing the poor publication record of the guilty authors, and censuring irresponsible individuals and negligent gatekeepers of research integrity [18]. We believe that COPE's recommendation and similar efforts to create a shame-free milieu represent a reactive approach to retraction that does not address the root of the problem. In contrast, stigmatization of retraction is a preventive approach. Prevention is better than cure.

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