

Protecting Peer Review: Revolutionaries in the Fight for Quality and Against Scientific Misconduct

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PII: S0735-1097(20)36487-1

DOI: <https://doi.org/10.1016/j.jacc.2020.08.055>

Reference: JAC 27645

To appear in: *Journal of the American College of Cardiology*

Please cite this article as: Fuster V, Turco JV, Protecting Peer Review: Revolutionaries in the Fight for Quality and Against Scientific Misconduct, *Journal of the American College of Cardiology* (2020), doi: <https://doi.org/10.1016/j.jacc.2020.08.055>.

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**Protecting Peer Review:  
Revolutionaries in the Fight for Quality and Against Scientific Misconduct**

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Journal Pre-proof

“In a time of universal deceit, telling the truth is a revolutionary act.” ~ George Orwell (1).

Peer review has received a great deal of scrutiny recently—some of which has been warranted. Criticism, when justified and logical, can serve to improve a system or process, especially one as weary as peer review. However, even though a process is imperfect and slightly antiquated does not mean we need to destroy it altogether, as some have recommended. We as clinicians and academicians tend to be perfectionists, which means that we are fundamentally uncomfortable with flaws. We are healers and fixers. Also, in these roles, we have been trained to rely on the integrity of our colleagues in the peer review system, as we communally support the care of the cardiovascular patient.

Thus, whenever faced with the more complicated considerations within peer review over the years, we, along with the entire *JACC* Board, have attempted to identify its purpose. At its core, peer review is supposed to help improve the quality of a submitted manuscript and distinguish whether the quality of the manuscript meets the expectations and/or priority of the journal. It is not intended to uncover fraudulent behavior or intentional misconduct—even though you would be surprised how often that occurs. Maybe it is sometimes obscure what takes place behind the peer review process, but every one of our paper undergoes at least a triple-layer of peer review at minimum (even those that are rejected without review). All the *JACC* Editors browbeat themselves to ensure its quality and integrity. If a manuscript is eventually sent for peer review, it undergoes a **minimum** of two clinical peer reviewers, at least 1 thorough statistical review, a full Editorial Board discernment and discussion, and another round of edits and review. The Board members and *JACC* staff undertake this painstaking process to enhance the scientific literature and the care delivery to the CV patient.

Unfortunately, the data confirm that the absolute number of retractions has risen over the past few decades, from <100 annually before 2000 to nearly 1,000 in 2014 (2). In part, that trend reflects a rising denominator. Thus, the total number of scientific papers published annually more than doubled from 2003 to 2016 (2). However, during the same period, the number of retractions tripled. While retractions are not always caused by scientific misbehavior, in one 2018 analysis of ~10,500 retracted manuscripts, approximately half of them “appear to have involved fabrication, falsification, or plagiarism—behaviors that fall within the U.S. government's definition of scientific misconduct” (Figure). The other half were retracted because of mistakes, problems with reproducibility, and other issues (2).

Many high impact biomedical journals, such as *JACC*, have mechanisms in place to protect the journal, including multiple layers of clinical and statistical review. However, if a researcher manipulates data or fabricates an image, it ultimately reflects the flaw and malice of the individual, not the process. Unfortunately, *JACC* has currently issued a retraction for two recent publications—a process that is exceptionally rare for the *Journal*. In fact, this is the second retraction in six years at *JACC*, and the Board’s continued efforts to protect the readers and the literature has protected from such instances. While this is disheartening, we remain conscious of the tremendous value that peer review provides to our community.

As the former Editor-in-Chief of *JAMA* and *NEJM* Drummond Rennie wrote in 2010: “The fact remains, however, that while every journal finds the business of creating and maintaining a vigorous peer review system exhausting, expensive and contentious, the scientific and academic community is voting for it with their time and money, and justifying it on the general basis that—like democracy—it is, despite its [imperfections], the best system there is” (3).

Peer review continues to be the best system to provide an avenue for high quality manuscripts due to the thoughtful, honest scholars, clinicians, and scientists who value and cherish the need for integrity. If fraud is truly increasing, as the data suggests, then we need to serve as revolutionaries in this fight to defend quality and prevent misconduct.

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2. Brainard J, You J. What a massive database of retracted papers reveals about science publishing's 'death penalty'. *Science*. Oct. 25, 2018.  
<https://www.sciencemag.org/news/2018/10/what-massive-database-retracted-papers-reveals-about-science-publishing-s-death-penalty#>
3. Rennie D. Integrity in Scientific Publishing. *Health Serv Res*. 2010;45(3):885-896.

**FIGURE. Retraction Trends Related to Misconduct.**

The majority of retractions have involved scientific fraud (fabrication, falsification, and plagiarism) or other kinds of misconduct (such as fake peer review).

Source: Reference 2

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