



EDITORIAL

## A new form of fraud in scientific publishing: Supplanting or hacking the scientific review process



Biomedical fraud is an unfortunate reality, and one with serious consequences, in some cases terrible ones. For instance, British researcher Dr. Andrew Wakefield set off scandal and fear surrounding the use of vaccination against measles, mumps and rubella. He accomplished this through a publication based on spurious and corrupt research. Wakefield was sadly known for fraudulent research published in 1998, supporting a now discredited thesis. The thesis claimed there was a link between the administration of the triple vaccine – measles, mumps and rubella – and autism, as well as intestinal diseases.<sup>1</sup>

After the publication of his article, several independent researchers tried unsuccessfully to reproduce his findings, with the sole purpose of confirming the hypothesis linking this triple vaccine to autism and gastrointestinal diseases. In 2004, research revealed the existence of a financial conflict of interests on Wakefield's behalf, whereupon most of his co-authors withdrew their support to the interpretations of the study. Wakefield's study led to a decline in vaccination rates in the US, the UK and Ireland, and consequently, a rise in the number of cases of measles and mumps, some of them severe, some even fatal. His continuous warnings against vaccination created an atmosphere of mistrust towards all vaccines, thus contributing to the reappearance of other diseases which were thought to be under control.

Science is a communitarian enterprise built on truth and trust. The referees and editors who review and study articles sent for publication, usually take the data at face value, and assume the authors obtained and analyzed their results in an honest manner. Reviewers are asked to judge whether or not the conclusions are based on solid data, but not judge the data itself or identify whether or not the data is fraudulent. The system is not established to work in any other way; if the editors and referees did not trust the authors and assumed each result could potentially be fake, few articles would be published. There is not enough known data of fraud to justify the cost (time, money or experimental animals) that would require all data to be duplicated by independent laboratories.

Nevertheless, a recent article published by The New England Journal of Medicine pointed our attention towards a

new form of fraud.<sup>2</sup> Before a biomedical article is accepted for its publication, scientific journals sent the material for its evaluation in pairs (peer review), so experts in the area could criticize it, make suggestions to improve it and recommend to the editors whether the paper should be accepted or rejected. An author, whose article is rejected by a journal, should not be discouraged and usually tries to publish it in different journals in descending order of importance. Judgement is time-consuming, and it is not uncommon that editors of journals like The Lancet or the New England Journal, to name a few, can hardly find experts in all areas. Editors of smaller journals do not have the necessary resources to find these experts; moreover, there is the fact that editors are judged on their speed in responding to and publishing these manuscripts. Scientists are always anxious to publish their results as fast as possible, because other colleagues in their field may publish before them. This competition is welcomed. However, it may cause problems, unfair competition, corruption, etc.

Because of this super specialization, it is becoming increasingly common to ask the authors of these papers to suggest referees for the judging process of their own work. This, of course, opens the possibility of fraud. The pressure of academics to publish, independently of whether they have something of relevance or not, to advance in their professional careers, or just to keep their reputation, makes easy targets for dishonesty.

Recently, two major scientific journal editorials, Sage and Springer, were forced to withdraw over 100 articles because they discovered that the judging process was spurious. In August 2015, Springer withdrew 64 articles from 10 different journals after the editorial department discovered "spurious electronic addresses" and an internal investigation exposed that the judging reports had been fabricated. In other words, the researchers "created their own evaluation". This occurred just months after BioMed Central, an open access publisher also owned by Springer, withdrew another 43 papers. The pressure to publish is significant for scientist around the world, and competition for space in the most prestigious journals is harder than ever before. A reason for this is the fast-growing research and the number

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of scientists in developing countries, such as Brazil, India, Turkey and China. When the gratification of publishing is also high (academic promotion, money) this makes taking the "easy road" or shortcuts to get their work published more desirable.

This circumstance alerts us, as an editorial group in "Medicina Universitaria", to the new form of fraud. Luckily, in our judging process, authors are not allowed to suggest experts. Also, this is done in a blind way, thus preventing this form of fraud from happening.

## References

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