

## *Primum non nocere: authors or reviewers?*

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Currently, with a plethora of research and the increasing number of scientific articles been submitted, the time is opportune to reflect on the role of authors and reviewers on the quality of scientific information been published by the numerous scientific papers and journals available.

Articles submission to scientific journal goes through a confidential and self-regulated review by one or more individuals, experts on the subject at hand, the so-called peer review.

Who invented the peer review? Hard to know, but the father of peer review probably was Ishaq bin Ali Al Rahwi (854-931 AD). In his book, *Ethics of the Physician*, he suggested doctors to keep their notes for future review by a group of local doctors, in order to decide whether the patient had received the best treatment available in the event of his cure or death. It was not until 800 years later, around the seventeenth century, that Henry Oldenburg, the editor of the *Philosophical Transactions of the Royal Society*, adopted the first modern method of revision, which spurred intense debates among European scientists.

Currently, any journal that wants to be respectable must have a robust process of review and expert reviewers to perform these tasks. Ideally, once the article is electronically submitted to a secure database, the editor sends the manuscript to a reviewer. In this step, the manuscript may be rejected if deemed scientifically inappropriate for readers, non-original, or not sufficiently updated.

The Lancet rejects three quarters of the articles in this step, and if the article is considered a candidate for publication, it is sent to a statistical and three other reviewers, which are experts on the subject at hand and represent different research methodologies. These experts do not act as judges, but they send confidential comments to the editor with remarks for each session of the article, which are collected and are part of the decision to reject or initiate a discussion with the author on the suggestions submitted by the reviewers.

Authors and publishers recognize that the review process can be controversial, but aims to minimize the error in validating scientific discoveries with inadequate or questionable methods, such as those published by Andrew Wakefield who made an association between vaccination against mumps, measles, and rubella (MMR) and autism; or the work of Hwang Woo-Suk on the technique for cloning embryonic stem cells, which was published and later removed from the Lancet and Science, respectively. On the other hand, Lauterbur Paul, the father of magnetic resonance imaging (MRI), had his original article on MRI rejected when he first submitted it to Nature. However, Lauterbur subsequently received the Nobel Prize in Physiology or Medicine in 2003 for his work on MRI.

Revision is a process that can involve human errors and misinterpretations, and scientific journals are often responsible for the publication or not of information that may influence the reputation of scientists and academic institutions, which makes this process even more complex.

The scientific community has the ethical and moral obligation to improve the process of editing and publishing, and for that to happen all health professionals, scientists, and reviewers should receive a formal and compulsory training on the development, ethics, and publishing since graduation and during their academic and professional life.

Several journals, including RAMB, have used considerable amount of time, resources, and investment in this process in order to ensure that articles accepted for publication meet the requirements to ensure a sound scientific publication. In the future, it is expected that the review of scientific information starts and continues even after its publication in order to ensure a natural mechanism of criticism and continuous improvement.