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Trial by peers comes up short

Sophie Petit-Zeman examines the 200-year practice of peer review
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When US President Benjamin Franklin wrote "nothing can be said to be certain, except death and taxes", he should have checked with a scientist. A recurrent ordeal for all is the tribulation that follows the triumph. For the "eureka" moment, when the years spent poring over test tubes come good, is not the end of the road to fame or even professional respect.

For first, researchers must bare their methods and results to the scrutiny of their peers. In this way, the prestigious scientific journals decide what gets published and, hence, what breakthroughs we hear about. But a report out this month from a well-respected international collaboration of scientists will reveal that this time-honoured system of peer review, which has existed in some form for at least 200 years, is possibly bunk.

According to Dr Tom Jefferson, from the Cochrane Collaboration Methods Group: "If peer review were a new medicine, it would never get a licence." As he explains: "Peer-review is generally assumed to be an important part of the scientific process and is used to assess and improve the quality of submissions to journals as well as being an important part of the process of deciding what research is funded.

"But we have found little empirical evidence to support the use of peer-review as a mechanism to ensure the quality of research reporting, and there's even more depressing evidence about its value in deciding what should be funded."

Jefferson adds: "Our review focused on biomedical research, but there's no reason to assume that the inefficiency of this system would not pertain across other scientific disciplines." Jefferson's team scrutinised 135 studies, designed to assess the evidence that peer review is an effective method of deciding what should be published.

He said: "We had great difficulty in finding any real hard evidence of the system's effectiveness, which is disappointing, as peer-review is the cornerstone of editorial policies worldwide."

He added: "Scientists compete with each other for space to publish in the most prestigious and most widely read journals, space is allocated by editors, and peer-review plays a big part in the process. Publishing is the key to advancement and research riches. Nobel prizes have hinged on peer review, yet it may be seriously flawed. The problem is compounded because scientists can't agree about how the quality of peer review should be measured."

These findings come in the wake of four international congresses on peer review that have promoted research into all aspects of it. Jefferson and colleagues are now calling for a large, well-funded programme of research on the effects of peer-review. But does their work cut the mustard? Asked whether it was peer reviewed, Jefferson says: "Yes, and it was done through collaboration rather than in the adversarial way that can happen. Editors can usually only publish about 10% of what they receive, so they're looking for reasons to reject papers. Furthermore, peer review is actually 'competitor review' and they may be trying to find reasons to shoot down their rivals."

Sir Iain Chalmers, founder of the Cochrane Collaboration, the international organisation that assesses effective healthcare and within which this research was conducted, told the Guardian it was important not to be too negative about the results. But, he added: "The acquiescence of the scientific world in the threadbare empirical evidence base for the process needs challenging." He encouraged readers to access the Cochrane reviews and submit their criticisms, through www.nelh.nhs.uk.

The following correction was printed in the Guardian's Corrections and Clarifications column, Friday January 17 2003

The reference to President Benjamin in this article was misplaced. George Washington was the first president of the US. At the end of his presidency, in 1797, Franklin had been dead for seven years.