



EDITORIAL

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Wikipedia, the free (democratic) encyclopedia, cites the Oxford English Dictionary to define democracy as “a system of government in which all the people of a state or polity ... are involved in making decisions about its affairs, typically by voting to elect representatives to a parliament or similar assembly”¹.

Despite being widely advocated by international agencies, nations and individuals, it is popularly known that democracy is a flawed system and it allows abuses which fall far short of the ideal of *dêmos* (people) and *kratos* (power). However, there is no other system that has proven to be better (less bad) than this substitute for democracy: the election of people’s representatives.

In the scientific community, there is another system with a similar logic to democracy: peer-review. It could be defined, paraphrasing Wikipedia and Oxford English Dictionary, as “a system of government in which all the scientists of a discipline or field ... are involved in making decisions about science progress, typically through review by peers or a similar assembly”.

As in democracy, peer-review is also widely recognized as the gold standard to determine what can and cannot be published. However, the system has many shortcomings which have raised criticism, such as Richard Smith’s. The former Editor-in-chief of BMJ says “...it is time to slaughter the sacred cow”².

The question then arises as to whether there is a better system than peer-review and the answer is not simple. Many journals have a great number of serious peer-review failures since it is a difficult process which overburdens reviewers. Many times, it is illogical, long and it is impossible to achieve the goal of separating the wheat from the chaff².

Let’s return to democracy. The disadvantages of democracy are not in its more classic theoretical definition, not even in the definition of the substitute for representati-

Peer-review, like democracy, is not perfect but... is it a sacred cow?

ve democracy. The problems of democracy emerge in its implementation, in the concentration of power in a few people and the ignorance of the rest. The problem is the people participating in the system, rather than its design. However, other systems which may be more efficient in decision-making will generally have more problems with corruption and abuses. Review history and you will find only a few exceptions to this situation.

The outlook is very similar in the case of peer-review. In theory, the system does not appear to have problems, but the problems arise with the people who are in charge of the system: fraud, expensive processes, concentration of power in a few people or publishing companies, very low effectiveness, etc. However, it is difficult to think of a system which can eliminate all these problems when there are scientists who are corrupt or simply pressured to “publish or perish” and an oligopoly of publishing companies maximizing profits at the expense of everything else.

Post-publication peer-review could be an option to classic pre-publication peer-review. In this system, readers decide what does or does not account for scientific progress. Unfortunately, this argument has a fundamental error based on the same research used to support criticism of pre-publication peer-review.

In 2005, Ioannidis published his famous work “Why Most Published Research Findings Are False”³. In it, he pointed out serious problems of most published research, supporting the idea that pre-publication peer-review does not work well. However, it is difficult to believe a system of post-publication peer-review could work better. On the contrary, if “expert reviewers” did not detect serious problems during peer-review, what are the possibilities that “non- expert readers” could do so?

This would lead to millions of articles flooding scientific literature, and millions of readers who would trust



in their content only because they would be published with a scientific veneer. In fact, this is already happening with many predatory journals⁴ which are precisely corrupting the ideal of peer-review.

Certainly, the peer-review system has serious problems; but, such as democracy, it seems to be less bad. It is up to the people in charge of the system to ensure that it works with the least possible amount of biases; to continue improving the techniques, increasing the demands

and assume that there will be a percentage of type I error that will always be there, hopefully the least possible. It is time to check people's failures and not to blame the system for some people's bad behavior.

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