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**Editorial: Has Science started to go wrong?**

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## **Has science started to go wrong?**

The idea behind science is “trust, but verify”. This practise has led to an immense body of knowledge, to the flourishing of our societies, and it has contributed to our health and well-being.

The growing pressure that the ever accelerating rhythms of modernity impose on each of us, and the economic interests behind science and publishing, increasingly lead, however, to a situation where the scientific community trusts much and verifies very little. The verification of results is hard and thankless. Journals want novel results - in order to have papers which are quoted, producing impact factor - and show little interest in publishing replicated results - though this has been and is an essential part of science.

There is growing evidence that this development did not evolve by chance. The increasing number of scientists worldwide - now estimated to being more than seven millions - dominates academic life, making the obligation to “publish or perish” more and more urgent. There is no doubt that the increasing pressure to publish to move forward in one’s career encourage in some persons exaggeration, lead to fake, to double publication or even to fraud. Many examples could be made in medicine (and also in other disciplines) in which verification failed - and lastly the scientists admitted to have committed the fraud (see e.g. [https://en.wikipedia.org/wiki/Scientific\\_misconduct](https://en.wikipedia.org/wiki/Scientific_misconduct)).

On the other side, editors and authors often have very little instruments to detect plagiarism or fraud. In some instances, even after several rounds of review, a suspect cannot be completely ruled out and the editors are left with the dilemma

whether to reject a potentially flawed paper because its results appear "to good to be true" or to accept it, therefore implicitly endorsing it. It needs to be admitted that even the best review system may not always be successful.

Admittedly, not all journals are the same. A number of uncorrected flaws can occasionally be found in published manuscripts, and such cases have exponentially increased in the last years, given the number of new journals – many of them open access journals – which emerged at the lower tier. This issue recently made the news as John Bohannon, a biologist and science journalist, submitted a fake scientific article, written by made-up researchers from non-existing universities, to fee-charging, open-access journals. The result was acceptance in as many as 157 out of 304 of the cases despite the errors interspersed in the study design, in the analysis and the interpretation of the results. The conclusion of the authors is that sloppiness (to use an euphemism) is quite frequent among editors. The article was published in the section "news" of the journal *Science*, and immediately a number of (many legitimate, some others admittedly biased) comments, both in support or against this approach, were posted.

In this issue, a letter from Pavlovic et al. [1] debates further on this issue. We decided to publish this piece uncensored, without any form of peer-review to stimulate further discussion on the evolution of academic publishing, plagiarism being only one of the relevant themes along with the interaction between science and economic interests, the evaluation of the quality of papers and journals and many other ones. We wish the readers a nice read.

[1] Dragan Pavlovic, Taras Usichenko, and Christian Lehmann, The last bite was deadly - About Responsibility in Scientific Publishing, *Clin Hemorheol Microcirc* 57 (2014), 3-7.

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