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Editorial

The impact factor in peril?

As the month of June draws to a close each year, editors of scientific journals impatiently await. . . the Impact Factor. The "IF" ranks journals in a given specialty, testifying to their renown and scientific attractiveness. With an IF of 1.036 on June 30, 2018, the *European Annals of Otorhinolaryngology, Head and Neck Diseases* has held its position, since first being attributed an impact factor in 2015.

Created by Eugene Garfield [1] in the 1960s and for decades the property of Institute for Scientific Information (ISI) then Thomson Reuters before being taken over in 2016 by the private investors of Clarivate Analytics, the IF is a very big fish in the little pond of French university and hospital medicine. Originally designed to rank journals covering 95% of the science that "counts" [1], in France it has become the centerpiece in the files which the National Universities Council uses to assess applicants for a university career and track their progress through the administrative ranks, which determines how much they are paid. Since 2007, the IF has also served as a basis for calculating "scientific publications analysis and management system" (SIGAPS) scores, which govern how 60% of the funding for teaching, research, referencing and innovation ("MERRI") is distributed between 126 French health establishments [2]. In 2018, the SIGAPS budget allocated by parliament under the health insurance financing law amounted to € 935 m, (http://circulaire.legifrance.gouv.fr/index.php?action=afficherCirculaire&hit=1&r=43338). In 2015, a published article could "bring in" from 1 to 32 SIGAPS points according to the IF of the journal in which it appeared and the ranking of the author, with 1 point being worth € 549 (www.ifct.fr/index.php/en/la-recherche/item/2065-sigaps-pour-quoi-faire-et-pour-qui). In 2017, a study reported that getting SIGAPS points was a motivation for article writing for 17% of practitioners in the Paris Hospitals [3]. In the private sector, the IF is also attractive; in 2016, a press release by Ramsay *Générale de Santé*, a private group, announced that it would be handing on to its physicians one third of the MERRI subsidy obtained from its SIGAPS scores [4]. The rest of the world is just as susceptible to the financial possibilities of the IF. In China, a system of payments to authors was set up in the 1990s to "valorize" academic teams that published. A study of the impact of this policy since the turn of the century reported that, while an article in PLoS One brought in $ 400 to $ 1600, an article accepted by *Nature* or *Science*, which have far higher impact factors, boosted the payment to anywhere between $39,000 and $63,000 [5]. The same study also reported that smaller Chinese universities paid more for publications than the more prestigious universities–while the mean annual income (before publishing!) of a Chinese professor was between $ 3100 and $ 8600 [5].

The financial attraction of the IF may at first sight suggest that it has become a permanent fixture, especially as rival indicators (CiteScore, Eigen, H-index, Scimago, SNIP) that came on the scene in the early 2000s failed to budge it. In fact, they share its limitations: narrow time-window, biases related to editorial policy and self-citation, and no access to the raw data underlying the calculation. However, the survival of the IF and its rivals is in peril: at a time when the quality and reproducibility of science have become burning ethical, political and economic issues, all these indicators are coming under attack for failing to reflect the quality or quantity of original scientific information actually delivered by any given journal, while payments based on these metrics skew proper assessment of research.

DORA (http://www.sfdora.org), named for the Declaration On Research Assessment rather than Dora the Explorer of the cartoon series from the early 2000s, is the spearhead of this campaign for "better science", which, among other issues, seeks to put IF et al. back in their place as simply bibliometric indicators. The Declaration was issued in 2012 at the San Francisco Congress of the American Society for Cell Biology, and advocates assessment of the actual quality of science, countering the use of inappropriate indicators. It was signed by 75 organizations, including the European Association of Science Editors, and amplified by a scathing editorial in the journal *Science* condemning the Impact Factor as destructive for science, encouraging "me-too" research and driving publication ahead of real innovation. This was echoed in the press across the world, and backed up by the 2015 Leiden Manifesto published in *Nature*. Then, in 2016, an editorial entitled "ASM Journals Eliminate Impact Factor Information from Journal Websites", jointly published by several prestigious biomedical journals enjoying high impact factors, declared that the IF would no longer feature in their websites or be used for promotional, purposes. The movement has recently taken off in France too: early this year, Inserm signed up to DORA (www.inserm.fr/actualites-et-evenements/actualites/evaluation-recherche-inserm-signataire-declaration-san-francisco-dora), while the Court of Auditors (www.ccomptes.fr/sites/default/files/2018-01/20180117-role-des-CHU.pdf) published a report entitled "The role of University Hospitals in higher education and medical research" which severely criticized the present way of using the SIGAPS system writting: 'The main weakness of the SIGAPS and SIGREC systems is that they are based on declarations and lack controls. The SIGAPS score is based on the directory of agents as declared by the establishment, while the SIGREC score is based on clinical trial data, likewise declared by the establishment itself. Some health establishments game the model by using

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short-terms contracts, or even just a single short-term contract, to employ outside practitioners who have published articles as part of their research activity for their main employer. Since 2014, establishments have had the right to benefit from articles published by practitioners after the first week of a short-term contract. The metric obtained in this way is disconnected from the establishment in which the research is question is actually carried out. There are no controls on this point. Given the weight of the "Publications" indicator in the MERRI subsidy, the financial impact of abrogating this rule is considerable. The effect is especially strong in the Paris region, as practitioners for the AP–HP Paris hospitals board work on a very part-time basis in several public and private establishments, which thus take undue advantage of the research that is carried out, notably for the AP–HP. Many small establishments, in the provinces too, also take advantage of this means of funding. Finally, this rule enables university hospitals to lay claim to all of the publications of Inserm and CNRS researchers who have an interface contract if they are employed by the health establishment'.

In the long run, only time will tell whether the great god Impact Factor and its angels SIGAPS and SIGREC will survive us... Meanwhile, read, sign, apply and distribute DORA!

Disclosure of interest

The authors declare that they have no competing interest.

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