



Editorial

Scientific Publications: Present and Future[☆]

Publicaciones científicas: presente y futuro

Óscar García-Algar,^{*} Oriol Vall Combelles

Unitat de Recerca Infància i Entorn (URIE), Instituto Hospital del Mar de Investigaciones Médicas (IMIM), Barcelona, Spain

In the field of biomedicine, scientists and clinicians translate their findings into publications, which are subsequently converted into research quality indicators and form the basis for quantifying merits for the assessment of professional careers, attracting academic proposals, offers in the industry or competitive allocation of funding.^{1,2} These publications must meet a series of conditions and must achieve the highest scores in journal quality indicators, such as the impact factor (IF), number of citations or immediacy index. However, the paper editions of the journals are finding themselves constrained in the face of the huge surge in the number of manuscripts, particularly those which have achieved and want to maintain their IF, which is related with the number of citations received and the number of certain types of article published. This editorial struggle between both figures can lead to probably unintentional manipulation of the information. As such, various high IF journals avoid publishing some excellent articles in order to prevent any “dilution” of their IF, some publish a negligible number of manuscripts and others increase their IF artificially by increasing self-citations.

The IF is currently the most widely used bibliometric index, and to possess it is indicative of the quality of the journal, its visibility and its prestige for authors and institutions. It measures the frequency with which the “average article” in a journal is cited in a given year. It has its limitations, such as the arbitrary 2-year period for the calculation, the database used (supplied by the *Institute for Scientific Information* [ISI], which does not include all scientific journals) and errors in the reference lists. *Journal Citation Reports* (JCR) calculate the IF by dividing the number of citations to articles published in the previous two years by the total number of articles and reviews published in that period. New indicators are being currently proposed which allow better measurement of the impact of biomedical journals: 5-year Impact Factor, *Eigenfactor*, *Scimago Journal Rank* (SJR), *Source Normalized Impact per Paper* (SNIP), *Article Influence Score*, Immediacy index, half-life of citations received, *Journal Ranking* or the h-index.

When a researcher obtains results from his or her work, he or she sends them in an original manuscript to a biomedical journal specializing in that specific subject, in which other researchers collaborate by reviewing the article free of charge. If the editorial committee decides to publish it on the basis of the relevance of the content, taking into account the physical space in the journal and editorial policy criteria on the impact of the publication, any healthcare professionals and scientists who wish to access it must pay an annual subscription, personally or via their institution, or else a certain sum for each article. Authorship rights are passed to the publishers and the author may not receive any financial compensation or post the article on his or her own website without their permission.

The emergence of the Internet has allowed the almost unlimited and irrepressible dissemination of information, while the traditional system of restricted access is practically contrary to the dissemination of knowledge and the advancement of science, particularly where knowledge sharing is concerned.

The open access movement has been fighting for years to achieve free access to the results of publicly funded research.^{3–6} The best examples of this idea are the publishers PLoS ONE and BioMed Central (BMC).^{7,8} This has changed the scenario of biomedical publications in pursuit of the ultimate objective (to increase the IF of the journal), avoiding the frequent string of rejections and restrictive or perverse strategies of the editorial committees (manuscripts with more or less impact are not “accelerated” or “delayed”; there is no space limit, so all quality scientific material is published; self-citation is not favored, etc.); funding is personal (authors pay for editing costs if their article is published); there is no pressure on the reviewers to accept or reject articles; and free access is available for all researchers. Moreover, the authors reserve the rights to the publication.

In this respect, two events have occurred that clearly favor the situation. Firstly, the main funding agencies in Europe and the United States require that research is publicly accessible for at least some time after the publication of the results, and that results are included in repositories, grouped, for example, in platforms such as *Recolecta* or *Dulcinea*.⁴ Secondly, a provision for the dissemination of results, and in particular their publication, is encouraged and has become almost a requirement for budgets for research projects.

[☆] Please cite this article as: García-Algar Ó, Vall Combelles O. Publicaciones científicas: presente y futuro. Arch Bronconeumol. 2013;49:503–504.

^{*} Corresponding author.

E-mail address: 90458@hospitaldelmar.cat (Ó. García-Algar).

At the same time, there has been a geometric progression in the number of publishers who are fighting to win their place in the field of biomedical publications: the number of published articles (online, of course) is multiplying along with the number of citations, thereby increasing the IF of the journal, which in turn acts as a device to attract authors with articles of increasing quality, thus leading to more citations and a higher IF.

Internet and recent technological advances have the potential to radically change the face of scientific publishing as we know it and to maximize the impact of research in a way that would be impossible to achieve with subscription- and paper-based procedures. The European Research Council (ERC) envisages full open access to all biomedical information which will be immediately available online.⁶

This is the future of biomedical publications.^{6,9,10} The field of biomedical research publications based on scientific impact lies in the hands of the journals with free online editions, implying that the future has already arrived and publishers should have already set out on the “open” path. Meanwhile, journals must switch directly to open access management or should adapt, by implementing editorial policies in this respect, for example, by increasing the content of original articles online and posting letters to the editor and brief original reports in the online section.

References

1. Pichini S, Pulido M, Garcia-Algar O. Authorship in manuscripts submitted to biomedical journals: an author's position and its value. *Sci Eng Ethics*. 2005;11:173–5.
2. Código de buenas prácticas científicas. Barcelona: Parc de Recerca Biomèdica de Barcelona; 2012.
3. MedOANet. Mediterranean Open Access Network. Available at: <http://www.medoanet.eu/home> [accessed 12.04.13].
4. DULCINEA. Derechos de copyright y las condiciones de auto-archivo de revistas científicas españolas. Available at: <http://www.accesoabierto.net/dulcinea/default.php?contenido=acerca> [accessed 12.04.13].
5. Swan A. Open access to research: benefits and policy. Available at: http://www.recolecta.net/buscador/documentos/102012/AlmaSwan_spanish_medoanet_seminar_oct_2012.pdf [accessed 12.04.13].
6. European Science Foundation. Open access in biomedical research. Available at: http://www.esf.org/fileadmin/Public.documents/Publications/spb47_OpenAccess.pdf [accessed 12.04.13].
7. PLoS ONE. Available at: <http://www.plosone.org/> [accessed 12.04.13].
8. BioMed Central. Available at: <http://www.biomedcentral.com/> [accessed 12.04.13].
9. García-Algar O. El proceso editorial y el proceso científico. In: Libro de Ponencias del 60.º Congreso de la Asociación Española de Pediatría; 2011. p. 81.2. Available at: http://www.aeped.es/sites/default/files/AEP.Ponencias_2011.pdf [accessed 12.06.13].
10. García-Algar O. Futuro de las publicaciones biomédicas. In: Libro de ponencias del 61 Congreso de la Asociación Española de Pediatría; 2012. p. 269–71. Available at: https://www.congresoaeop.org/2012/readcontents.php?file=webstructure/01_sesiones.pdf [accessed 12.06.13].