

Radiological journals in the online world: should we think *Open*?

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Abstract The scientific community is becoming increasingly web-based and the role of online communication is continuously expanding. In this setting, one fact and two trends should be considered. The fact is the decision by Britain's government and by the European Union to make all papers deriving from projects that were paid for using public funds freely available online for reading and redistribution (an approach already widely used in the US). The trends are the 'open review' process and the future perspective of having online-only scientific journals; the balance of advantages and disadvantages of such an approach is debated. These factors are challenging the scientific community worldwide and radiological scientific societies should play a relevant role in driving these processes.

Key Points:

- *Research funded by the EU and Britain's government will soon be freely available*
- *The open-review process has started in certain scientific communities, but not yet within radiology*
- *Online communication is increasing its power within the scientific community*

Keywords Open access · Open review · Online communication · Citations · Publication policy

The scientific community is becoming increasingly web-based. While the trend for newspapers to become online only has not been as fast as predicted during the 1990s [1], the printed version of medical journals seems to be a residual phenomenon. The policies regulating the access to scientific papers are crucial issues and online communication has had a great impact. Moreover, electronic file transmission and web-based journal platforms greatly facilitate the submission and review process. However, the possibility of modifying the traditional double-blind approach to manuscript review [2] needs to be discussed. In this context, one fact and two trends should be considered.

The fact is the decision of Britain's government and of the European Union to make all papers deriving from projects that were paid using public funds freely available online for reading and redistribution, as mentioned in a recent article published in *The Economist* [3]. This already happens for all projects funded by the *Wellcome Trust* and since 2008 also by the US *National Institute of Health* (NIH), which requires free availability of papers within 1 year from publication. The reason for this approach is easy to understand: research paid using public or charity funds must be available freely for the public good. Another way of expanding freely available results of medical research is the so-called 'open access', in which authors (or their institutions) pay a certain amount of money to guarantee everybody free access to their papers. In radiology, the situation is not homogeneous. Some journals guarantee free access to all papers older than a certain date (usually 1 year; e.g., *Radiology*, *Radiographics*, *American Journal of Roentgenology*), while others (e.g., *European Radiology*) keep their papers secured, releasing them only for those with regular or institutional subscriptions or those paying for the open-access option. Of note, *Insights Into Imaging*, the new publication of the European Society of Radiology (ESR), guarantees free access to all papers as soon as they are

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published, but authors who are not members of the ESR have to pay for the open-access option.

On the one hand, open access sounds wonderful for readers, as they do not have to pay for reading even high-level publications. On the other hand, who is going to pay the bill for publication services? If not the reader (or his/her institution), then should authors pay to publish their research? To some extent, this is not fair, as authors already put a lot of ideas, efforts, time, and often money into their research. At any rate, open access publication has interesting potential, but there will probably also be space enough for high-level journals paid for by the readers.

The relationship between open access and the impact factor is largely debated [4]. On the one hand, freely available papers may be more frequently read in full and cited. However, high-IF open access imaging publications are still to come. On the other hand, high-impact factor journals, independent from open access, are likely to attract high-quality articles that should be made available to the public for free. Interestingly, there is a substantial difference between American societies (e.g., the *Radiological Society of North America*)—which directly act as publishers of their journals—and European (e.g., the *ESR*) or Asian societies (e.g., the *Japanese Radiological Society*)—in which external publishers operate the editorial business on their behalf.

Then, there are the two trends.

The first is the so-called ‘open review’ process. Currently, most radiological journals use a double-blind, peer-review system, in which both reviewers and authors are blinded to each other. Sometimes, the reviewer knows the authors but not vice versa (single blind). The open review process implies that not only are the reviewers aware of the authors’ name/affiliation and vice versa, but also that the complete review process (i.e., reviewers’ comments, authors’ reply to reviewers, etc.) gets published online along with the final paper. This approach enables restricting at minimum the disadvantages of a non-blinded process (e.g., personal rivalry between authors and reviewers) while enhancing the advantage of a fully open review that encourages reviewers to elaborate in high-quality, well-written comments. However, a notable drawback of this system is the need to edit a review as adequately as other manuscripts, thus making the process even more time consuming than at present. Furthermore, upon publication, manuscript reviews are potentially citable, which is not the case in most peer-review processes.

The second trend is the increasing power of online communication. It is likely that, in the next 5 to 10 years, most scientific journals will be converted into online-only publications. A recent example of it is that in Italy, 100 years from its foundation (1914), *La Radiologia Medica*, the official Journal of the Italian Society of Medical Radiology (SIRM) will move to an online-only (and English only, too)

version [5]. This may imply that the overall costs of the publication process could be consistently cut and articles could be more readily available to a wider audience. The role of publishers in this is debated [6]. In an online-only setting, publishers may continue to offer their editorial services as usual (manuscript submission systems, copy-editing, and so on) with far fewer costs because of a relevant cut in paper and print expenses. However, we should be aware that publishers may apply a non-linear relationship between cost and subscription reduction, making us happy for the latter and concurrently increasing their profits.

It was reported [3, 7] that some of the main scientific publishers (i.e. Elsevier, Springer, John Wiley & Sons, and Informa) obtained profits ranging from 32.4 % (Informa) to 42 % (John Wiley & Sons) in 2011. These values are not common in other firms in the world in times of global economic crisis. Of note, this money is at least partially made by offering services to publish someone else’s ideas and hard work, obtained free of charge.

Another aspect of online (scientific and non-scientific) communication is represented by the possibility given to the readers to comment on published papers online. This is a quick and effective way to interact between authors and readers. In other branches of medicine, some journals (e.g. *Annals of Internal Medicine*) [8] allow registered users to comment on published articles. Among comments posted within 4 weeks from article publication, the editors decide whether and how many comments will reach ‘real publication’ and become *Letters to the Editor*. But aren’t they already published on a website and thus fully citable? This opportunity is offered by *Radiology* [9] and *RadioGraphics* [10], in which readers can select the article to which they wish to respond online. *European Radiology* occasionally publishes formal ‘letters to the editor’ aimed to comment on published articles, but also has an online forum [11] in which opinions, comments, and controversies can be posted and exchanged. Finally, we should also take into account that online publication offers the possibility of monitoring the number of downloads of a paper. Isn’t this the real ‘impact’ of a paper, which might be more read outside the restricted circuit of ‘science’ than cited by colleagues? This is increasingly taken into account by some ranking methods.

In summary, online publication should be regarded as a great opportunity to spread radiological knowledge throughout the medical and non-medical communities, also trying to provide easier and cheaper access to papers that can be downloaded and distributed for free. These facts and trends are challenging the radiological community worldwide. We should try to drive this technological development instead of being driven by it. With this aim, stronger direction from radiological scientific societies is desirable.

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