

Open Access, impact and quality: an even harder future for gatekeepers?

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With the advent of open access publishing, coupled with easy electronic access to journals, many of the historical constraints towards access to the literature – both as an author and as a reader – have recently been reshaped, and are still changing, raising among others issues about the quality of what is published. Many aspects are being looked at very carefully, but so far the role of the media has only occasionally been investigated.

On one side, more and more scholars oppose the current use of the impact factor as a measure of quality of the single article or the researcher, and for instance the American Society for Cell Biology (ASCB) recently promoted the San Francisco Declaration on Research Assessment that states that «it is critical to understand that the Journal Impact Factor has a number of well-documented deficiencies as a tool for research assessment» and proposes a long list of recommendations [1, 2]. In parallel, there have been in recent years many attempts at evaluating whether and how the new scenario that is taking shape will affect not only the impact factor but also the citation counts and the several sophisticated methods based on citations that have been designed to provide a more reliable picture of quality (for a rich bibliography, see The Open Citation Project [3]).

QUALITY AND QUANTITY

These issues were also debated in a symposium on Open Access held last May in Vienna by the European intergovernmental organisation COST (Cooperation on Science and Technology) [4], where a few issues specifically relevant for the quality of publications in the biomedical area have been raised. Observing that much hope surrounds the advent of Open Access policies, the participants of the Vienna symposium agreed that the use of a journal's impact factor as a measure of the value of a journal – more and more common also for marketing purposes – is simplistic and insidious, and the move towards Open Access publishing will most likely have no direct influence on this situation.

On the other hand, cost of publishing will remain an issue, and the possibility for the publishers of electronic journals of collecting article processing charges without any constraints in terms of printing and shipping costs might further increase the absolute number of published articles, reducing the reasons for a stricter gatekeeping. One example that was raised concerns the otherwise exemplary Public Library of Science, and specifically PLOS ONE, whose peer-reviewers only verify that a work is «done

to high scientific and ethical standards and is appropriately described and that the data support the conclusions». The review process makes no judgement about the importance or relevance of the work or whether it is a duplication: all issues that are important in research that has potential clinical implications [4].

The same issues also reflect on the press coverage, which in turn creates a circle that more and more often risks to turn vicious.

THE ROLE OF THE LAY PRESS IN SHAPING THE IMPACT

The relationship involving science – and particularly research in medicine and public health – the media and the public is a rather complex one. One seminal piece of research – still very little known – showed as far back as in 1991 that the coverage in the «popular press» (in that case, the *New York Times*) influences the perception of peer-reviewed research not only by the general public, but even by the members of the scientific community: that study proved that for a study published in the highly respected and well-known *New England Journal of Medicine* the fact of being cited in the *New York Times* significantly increased the number of citations in the scientific literature in the following years [5], all other factors considered. The results of this study were not interpreted – as most science journalists probably would – like the evidence of the key role that good science journalism plays even for scientists; instead they were interpreted, from the point of view of those doing and publishing science, as an invitation to increase the efforts to influence (and even manipulate, in extreme cases) the media.

The recent advent of open-access publishing didn't modify this picture: «The promotion of scholarly journal articles to journalists and bloggers via the dissemination of press releases generates a positive impact on the number of citations that publicized journal articles receive» [6].

Today scientific societies and scientific publishers continue – along with industry – to invest more and more money in promoting their own research, flooding the mailbox of journalists to grab their attention, often with self-promotional hype. These distortions particularly affect pharmaceutical companies' press releases [7], but don't spare academic

medical centres: «Press releases from academic medical centers often promote research that has uncertain relevance to human health and do not provide key facts or acknowledge important limitations» [8].

According to a recent estimate by the well known marketing company Business Wire, the cost of a single corporate press release has grown in recent years, reaching the astonishing figure of 7 500 US dollars [9]. It's a real investment, which is expected to produce an appropriate return, often with the help of an embargo: journalists are offered materials to work on in advance of publication, in exchange for the agreement to wait until the embargo date expires. The embargo system was originally designed to provide more time to reporters to contact and interview trusted sources, but it is often used to make any content appear more exclusive – and hence interesting – for reporters, and to maximise the impact in the news.

FROM EMBARGO TO MANIPULATION

In specific cases, the embargo system was used in a way condemned as improper – and manipulative – by science journalists' organisations. In September 2012, a controversial paper by Seralini et al claiming to have found evidence of health risks deriving from the use of genetically-modified maize was published on a well-respected journal (advertised impact factor 2,999) [10]. Before publication, it was distributed to selected journalists who accepted to sign a non-disclosure agreement barring them from asking the opinion and comment of independent experts before the embargo date. The paper's methods and conclusions were vehemently contested by many experts who published eleven letters on the March 2013 issue of the same journal [11], but they were able to set the record straight only after the message that «dangers for the health have been scientifically proven» was out in the media without cross-examination.

The non-disclosure clause was condemned by the European Union of Science Journalists' Associations in a statement: «Such non-disclosure agreements go against the rationale for embargoes, and transform them from a useful tool to help science journalists to better inform the public into a tool for manipulating

the media, and must then be condemned as unacceptable and unethical for journalists and for scientists. Science must be open to outside scrutiny by the society, and by the press» [12]. That statement was then followed by a similar one by the French Association of Science Journalists [13].

IS HEALTH JOURNALISM USEFUL TO PUBLIC HEALTH?

In this scenario, only a very naïf approach might propose a depiction in which the purity and intrinsic usefulness of the science published in peer-reviewed journals is then corrupted by the distortions of the media, but still some researchers look down at the popular press and raise «the fundamental issue whether popular media is detrimental rather than useful to public health» [14].

From a journalist's perspective, the role that independent – and popular – media have in public health consists mostly in debating publicly, with a critical approach, how effective governments and health authorities are in spending public money. The crucial role of independent media, no matter how popular, should consist in strengthening the democratic process, so that decisions – about personal health, public policy or public money – are taken by well informed citizens and decision-makers of all levels. But this seems to be a cost that not even the open-access publishing model is taking into account.

CONFLICT OF INTEREST: *The Author was invited and fully reimbursed by COST to attend the meeting on Open Access in Vienna, where he acted as Rapporteur for the Biomedicine and Molecular Biosciences (BMBS) workshop.*

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