

THE CHALLENGE OF OPEN SOURCE: THE DIFFUSION OF KNOWLEDGE VS THE EVALUATION OF THE RESEARCH

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Abstract

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Keywords

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My focus is on the (difficult) balance between the necessity of quickly and widely spreading the results of the scientific research and the importance of evaluating the quality of the research itself.

On the one hand, communicating the results aims not only at establishing priorities, but also at avoiding duplicates (which would lead to losing resources) and at accelerating the whole research process.

The main requirements to ensure the quality and the efficiency of communication is the verification of the results and the speed of publication.

On the other hand, the growth of the research activities and active groups, and the subsequent growth of applications for funds, requires an efficient ranking of the researchers and of the research groups that apply for financial support or personal advantages on a competitive basis.

It is also worth noticing that the fast growth of items to be considered has recently led to the search for automatic procedures of evaluation and ranking. Great publishing houses have been very fast in reacting.

The process of peer reviewing has been accelerated by the platform-based procedure of submission, distribution to the editors and referees and report downloading. The ranking problem has been tackled by the same actors through the creation of very big data bases where an automatic ranking comes from a citation based analysis of journals, articles and authors.

This seemingly efficient and neutral solution has nevertheless some more or less evident drawbacks.

First of all, it relieves a considerable amount of cost from the publishers to the research institutions while the profit of publishers is preserved. In fact, the refereeing process is ensured for free by the researchers (who often do not gain any reward even from their own institutions), membership in editorial boards is always not remunerated and the typesetting itself is done by the authors.

Moreover, the self-referential handling of all the bibliographical (meta)data produces further incomes for the publishers. But, all of this did not produce any reduction in the subscription fees thus far.

This rapid and efficient reaction of the publishing houses has undoubtedly given some initial advantages to the scientific community, which is now approaching a turning point. Indeed, the cost of the publishing procedure is growing fast, in terms of work required (which is often not considered in the scientific institutions financial reports), subscription fees and the growing number of scientific journals, and the ranking procedure, after an initial enthusiasm, shows all the limits of any automatic procedure going on without a direct human intervention.

A further issue is the need of a fast, low-cost diffusion of the new achievements, as the ultimate goal of the scientific activity is the progress and the communication of the knowledge. Briefly, we

are led from a standing regime of well-established and sustainable publishing industry, under the direct control of institutions and academicians, to the expensive and uncontrolled growth of editorial activity, basically governed by the publishing companies.

One of the unpleasant and anti-cultural effect is that everyone is pushed to look for editorial-guided, rather than curiosity-guided, choices. As a consequence, the feeling of dependence from external agencies, perceived in the past as performing relatively low-level works and now raised to the role of masters, is pervading the scientific community.

This feeling requires an answer by the community itself as a whole, but of course the question is: how to react? Here is where the Open Access issue comes into the play.

What is definitely not sustainable is the increase of publishing costs to ensure open access. In principle, devoting the funds presently used to support the present state of the editorial activity to the maintenance of non-profit academic publishing companies and of self-managed data bases would be an easy but likely oversimplified solution.

If I am allowed to refer to my personal experience as a mathematician, I call the attention of the reader to the MathSciNet database, a well-established repository of mathematical publications founded and maintained by the American Mathematical Society since over than 70 years. For Mathematics, this data base is universally recognised to be much better than WoS or Scopus, both for the completeness and reliability of ranking.

In my opinion, eventually the wished solution is available, but a great effort is needed. First of all, the international scientific community has to get a strong and global agreement on the project and go ahead compactly.

What is definitely not sustainable by most of the research institutions is an extra cost for the open-access publications.

Therefore, in my opinion the only possible reaction of the community is the complete reappropriation of the whole maintenance of the publishing activity, as well as the evaluation and ranking of the products.

Unfortunately, it seems that the general attitude goes in the opposite direction: people follows the outcoming rules. Everyone tries to publish on high-reputed journals looking at

increasing his/her own scores.

Moreover, at least in Italy, the policy dictated by the government and the evaluation agencies goes in the same direction, pushing committees to judge according the same parameters. The result is a self-improving system whose dynamics goes towards a publishing and evaluation system whose rules come more and more from outside.

It goes without saying that such a reaction of the community, if there is a general agreement, has to come from the strongest research groups and institutions.

This strenght should be used not to self-improve the leading positions of these actors, but rather it should be used first of all against the external interlocutors, such as political agencies and institutions, with the aim of guaranteeing the survival of the freedom of research activity, i.e., the science itself.

Before getting a steady state of self-maintenance of evaluation processes based on internally accepted criteria, we are going to face a difficult transient age where only the open mindness of more autoritative actors can play a positive role.

Indeed, the first step is to stop the imposed use of ranking rules coming from outside in competitions (for financial support or recruitment).

The next step is the creation of an alternative framework of diffusion of the knowledge (through a publishing system directly controlled by the community) and ranking, which eventually could become again more or less automatic, as the present data bases are intended nowadays.

After the Workshop that originates the present contribution has been held, in my field of research, Mathematical Analysis, an open access new journal completely independent of the commercial publishing system and completely supported by the Academy has been established, see the first item in the Reference list. This goes exactly in the direction I am describing.

The final goal (or dream) is to gain an effective open access (which means free access) diffusion of knowledge.

I am aware that such a perspective goes against the natural competitive attitude of many actors, but I think that everyone should feel engaged in the protection of the scientific community as a whole. The alternative could be the distraction of more and more energies and

money from the research work. Nobody will gain from a general failure or implosion of Science.

As Virginia Valzano said in her speech, there are many problems related to Open Access and Open Science, often complex and evolving very fast. I am glad to take this opportunity to express her my appreciation for organising the present, very interesting Workshop on Open Science in cooperation with the Dipartimento di Matematica e Fisica “Ennio De Giorgi” of the Università del Salento, and my gratefulness for inviting me to contribute. I would also like to recall her precious engagement in favour of open access and open science.

Our University owes her the introduction of the ESE-Salento University Publishing system, a cutting-edge open access electronic scientific publishing system which is free for all the researchers.

The Dipartimento di Matematica e Fisica “Ennio De Giorgi” (that I have represented in the Workshop) has always supported this system, since its foundation. I recall that our journal “Note di Matematica” has been the first open access European Journal.

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