

“Future of Scholarly Publishing and Scholarly Publication”



Response of the European Physical Society to the Report of the Expert Group to the European Commission (2019)

The European Physical Society (EPS) is the top-level representation of the European physics community. As a learned society, the EPS is concerned with research and teaching in all areas of physics. It gives continuous attention to policies and practice of scholarly publishing and scholarly communication, and is itself an actor in the scientific publishing market. In recent years, the EPS has published four statements on different aspects of scholarly publishing:

- Position paper on Open Access (2009)¹
- “On the use of bibliometric indices during assessment” (2012)²
- “Managing the Transition to Open Access Publication” (2013)³, jointly with the European Association for Chemical and Molecular Sciences (EuChemS)⁴.
- EPS Statement on “Plan S: Accelerating the transition to full and immediate Open Access to scientific publication” (2019)⁵

These statements anticipate and confirm many of the recommendations made in the Report of the Expert Group (hereafter “EG Report”). **More generally, the EPS broadly supports the analysis, conclusions, and recommendations of the Report of the Expert Group.**

In the following, we comment in greater detail on some of the observations and recommendations of the EG Report. Our remarks follow loosely the questions proposed in Annex I of the (undated) document “Stakeholder consultation on the future of scholarly publishing and scholarly communication”.

Actors and their function in the scholarly communication system: in this area, the EPS plays a double role as (a) an actor in the policy arena and (b) as a publisher of physics journals (in

¹ https://cdn.ymaws.com/www.eps.org/resource/collection/B77D91E8-2370-43C3-9814-250C65E13549/EPS_PP_OA_2009.pdf

² https://cdn.ymaws.com/www.eps.org/resource/collection/B77D91E8-2370-43C3-9814-250C65E13549/EPS_statement_June2012.pdf

³ https://cdn.ymaws.com/www.eps.org/resource/collection/B77D91E8-2370-43C3-9814-250C65E13549/EPS_Managing_the_Transition_to_Open_Access_Publication.pdf..

⁴ EuChemS has since been renamed the European Chemical Society (EuChemS)

⁵ <https://www.eps.org/news/437914/Plan-S-Accelerating-the-transition-to-full-and-immediate-Open-Access-to-scientific-publication.htm>

cooperation with other, national physical societies). In both roles, the EPS is concerned, in different ways, with all of the four key functions addressed in the EG Report – registration, certification, dissemination, and preservation. Registration is primarily the responsibility of the individual researcher, or group of researchers, and physicists have rarely failed to publish the results of their work in a timely manner. Needless to say, at this stage of the publishing process the EPS defends a strict code of conduct under which, *inter alia*, full credit is given to previous and competing work in the relevant field. In the area of certification, the EPS supports a principle of peer review that adheres to the highest standards of integrity, independence, and scientific competency; in fact, we consider that in the digital age, high-quality peer review is the most important core value added by journals to the scientific publication process. Finally, the EPS advocates a responsible transition to Open Access (OA) publishing which is affordable and accessible for authors and readers alike, protects the interests of learned society and other small publishers, preserves the diversity of the scholarly publication landscape, and ensures secure long-term archiving.

Evaluation of research: The EPS supports the principle that the quality of research and researchers must be evaluated on the basis of true scientific merit, not on the basis of bibliometric indices and even less on the basis of perceived journal prestige. In physics, recent developments illustrate the obsolescence of metrics-based assessment more radically than other scientific disciplines. An example is large research collaborations in high energy physics, cosmology and gravitational physics, and increasingly in astronomy and astrophysics. These collaborations federate several hundred, sometimes several thousand scientists, who collectively sign all publications from their project. In such an environment, indicators of the Journal Impact Factor (JIF) or h-index type lose all meaning for the individual author. Indeed the communities concerned are progressively abandoning such criteria, both for the choice of publication outlets and for the assessment of individual scientists. In these large collaborations, the importance of peer review for the recognition of scientific merit is on the rise, thus anticipating a key recommendation of the EG Report⁶. However, the physics community at large still has to embrace this change of paradigm.

Today's flood of publications puts the peer review system under heavy strain. It would therefore be advisable to better recognize the time and effort of reviewers, and also to encourage young researchers to participate in this process, providing them with the right skills. A paradigm shift must foster quality over quantity in the evaluation process, obeying to the rules of research integrity.

Types of scholarly contributions: Articles and journals are, and are expected to remain, the most important vehicles of scholarly publication and communication in physics. The physics community was amongst the first to adopt open repositories (especially arXiv.org) for reasons of speed and openness. At the same, it has continued to invest in journals, thus amplifying the importance and the added value of the peer review certification. While the EPS promotes a responsible transition to Open Access based on principles outlined earlier in this statement, viable business models must respect the fact that scientific publishing has developed into a global enterprise of remarkable quality. This is an achievement that

⁶ It is, however interesting to note that – in contrast to remarks in the EG Report – the move away from the JIF was initiated by the community and not mandated by funding agencies.

deserves to be recognised and protected. Seemingly straightforward OA models, where Article Processing Charges (APCs) replace paywalls for readers by paywalls for authors, ignore completely the fact that all major European scientific publications receive manuscripts from around the world, from non-European researchers who often are less OA-aware or have no access to funds to pay for APCs.

Designing sustainable business models which avoid the shortcomings and barriers of APCs is arguably the greatest challenge for a successful transition to Open Access. An example of an alternative approach is the SCOAP3 model⁷ developed by the high energy physics community which has converted an entire branch of physics to OA on a global scale, at no cost to authors while protecting the interests of all actors – authors, readers, funders and publishers – in a balanced way. While not easily scalable to scientific publishing at large, SCOAP3 has demonstrated that viable alternatives to APCs exist and can be put to work.

Another key building block of the research process are research data and their management when they follow the FAIR principle endorsed by several stakeholders, including funders, publishers and representatives of the research community, such as learned societies. The establishment and selection of trustworthy repositories for open data is underway and will be further developed. Already today, many research data are well structured and can be managed using metadata standards; however, a huge amount of unstructured data is also produced worldwide, generated by interconnected devices and machines within the Internet of Things (IoT) and following an exponential growth. These data will be filtered, analysed and used for both commercial and scientific purposes using technologies like Artificial Intelligence (AI) and Machine Learning. It will be essential to open a debate on this issue, in order to prevent that AI algorithms and economic reasons dominate the data ‘business’, delegating the decision process to machines. The research community must be attentive to these competitive developments which could jeopardize the quality of research output.

Even in the digital age, and next to scientific publications, traditional conferences remain an important vehicle of scholarly communication and networking. This is an area where the EPS holds a particularly strong position, organising many of the most important and prestigious European conferences across all disciplines of physics. Large numbers of attendees testify to their continued popularity. The EPS is implementing proactive measures to ensure a balanced and diverse representation at all levels of participation (delegates, organising committees, invited speakers, etc.)

Implementation of the EG Recommendations: The strong support of the European Commission has been instrumental and beneficial in advancing the Open Access and, more generally, the Open Science discussion in Europe. Physics is an archetype of a scientific discipline where progress relies increasingly on intercontinental cooperation, and more work will be needed to develop a *modus operandi* that can be embraced by the community and implemented on a global scale.

Leveraging the unique position of the European Commission in promoting cross-disciplinary science policy debates, and building on the model of the Open Science initiatives, the EPS welcomes a similar initiative to reform the scientific evaluation system, following the

⁷ scoap3.org

recommendations of the Expert Group. Reforming the scientific evaluation system, moving away from the Journal Impact Factor, is a necessary initiative in moving successfully towards Open Science.

As a concluding remark, a word of caution: for the implementation of its recommendations, the EG Report attributes a strong role to the science funders. A broader and more visible role of the funding agencies is desirable indeed: re-gaining authority over Open Access/Open Science business models is a central example. On the other hand, recent history shows that the most disruptive innovations, and the most successful new paradigms in scholarly communication, started from grassroots initiatives of the scientific community, from the development of the World Wide Web to open repositories, open data, and first OA journals. Traditionally, physics has been at the forefront of these developments. With continued support from all actors, the European physics community stands ready to contribute its creativity, experience and unique global networks to a successful implementation of the Expert Group's recommendations. This will help establishing the bases for the necessary policy developments in the area of Open Access and Open Science, notably by actively engaging its own constituents and partners, including its publishing partners.

About the European Physical Society (EPS)

The EPS, founded in 1968, is a grass roots, member-driven learned society, providing a European forum for physicists representing scientific, topical, and national interest. The EPS presently federates 42 national member societies, which in turn represent more than 130'000 individual members; about 40 Associate Members, which are mostly major research institutions, universities, and industry; and more than 3'500 Individual Members. The seat of the Society is in Mulhouse (France).