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Critical study of the new ways of “editorialising”
open access scientific journals

Executive summary of the study piloted by BSN 4 and BSN 7

Produced by Pierre-Carl Langlais (June 2016)

Steering committee: Serge Bauin, Emmanuelle Corne, Jacques Lafait, Pierre Mounier

This report, commissioned by BSN 4 and BSN 7, is concerned with the new ways in which open access journals can be editorialised. The transition to open access has accelerated in recent years. Several countries have established a legal framework to secure the depositing of articles in open archives (in France, a provision of this type is included in the Digital Bill). In May 2016, the Council of the European Union called for open access to be made a “default option” in all Member States by 2020.

What type of open access?

While the conversion of scientific publishing to open access distribution appears to be a given in the short term, the ways and means remain uncertain: is the process confined to simply transferring budgets from subscription to the payment of publishing rights, without fundamentally changing the existing publishing structures (“journal flipping”)? Or does it entail new models that reconfigure the existing parameters as a whole (review procedures, writing practices, business models, governance)?

This dynamic of change opens up the prospect of large-scale reforms. The initial remit of the present study falls into this framework: what publishing forms can the state encourage in a digital age that is witnessing the transformation of scientific publishing and the failure of scientific peer review? In an ecosystem as “interdependent” as digital scientific publishing, this reform would imply the implementation of infrastructure policies which, above and beyond supporting specific usages and tools, would define the convergent linkages between mechanisms, actors and practices.

An attempt to map initiatives and emerging practices

This report maps four aspects of the emerging practices and initiatives:

- Publishing tools: scientific journals increasingly use standardised proprietary tools (Editorial Manager, Scholar One, etc.) in their editorial procedures. The large number of existing options and add-ins enables the coexistence of distinct publishing models and the maintenance of a certain “bibliodiversity”, while also ensuring a minimum degree of standardisation. The development of these tools, free software in particular, should be able to benefit from the support and increased involvement of scientific communities and national and European institutions.
- Writing forms: the opening up of research programmes and data contributes to the diversification of writing practices beyond the standard format of the scientific article.

At the same time, these different forms increasingly intersect and interact with the emergence of hybrid forms (code notebooks) and techniques to convert texts into data (with a view to text and data mining). In this sense, usages are out of step with the existing standards: the focus on the article in the administrative provisions regulating research, in terms of both peer review and valorisation, should give way to expanded support for other types of writing. In addition, some legal restrictions (the absence of a copyright exception for text and data exploration) currently hinder this process of diversification (in this area too, a provision of this type is included in the Digital Bill).

- **Review:** the standard peer review protocols are now displaying certain limitations. In particular, they are not able to guarantee the reproducibility of research (i.e. obtaining the same results by employing the same methods). Alternatives are emerging: open peer review, or rather, the different forms of open peer review. The publication of reviews takes different forms, depending on whether or not the reviewers' names are released and according to the writing methods used (comments, annotation, forum, etc.). These models appear to be complementary. Highlighting the different reviews in open archives would encourage a larger number of takes and critical points of view on a single scientific contribution. Support for platforms creating article-related discussion forums (along the lines of the Self-Journal of Science) would also enrich scientific debate and open up new prospects for the review of the scientific quality of publications and, ultimately, their authors.
- **Economics:** the digital transition and, in time, the conversion to open access are profoundly redefining the conditions of existence of scientific journals. Costs are closely correlated to the publishing model pursued: peer review – although performed by researchers on a voluntary basis – is the main expense. Potential resources are not confined to the receipt of subscriptions or APCs: large publishers such as Elsevier are massively reorienting their strategy towards data retrieval and metrics, while the supplementary services practised by an actor like OpenEdition contribute to revalorising editorial services. Lastly, the lowering of costs encourages the emergence of not-for-profit models based on volunteering and/or the optimisation of subsidies (which often already predominate in the standard subscription distribution model, particularly in the HSS). In light of these widening horizons, we call for the costs to be transformed into investment: a small levy on public budgets allocated to scientific publishing ought to contribute to the funding of new models.

From innovation to infrastructure

The different “dimensions” we have mapped are interdependent and raise common issues. Scientific publishing in the era of open access is characterised by its diversity and mobility: in the absence of legal and technical restrictions, scientific texts in the broad sense (articles,

data, codes, reviews) circulate widely from one platform to another. This dissemination does not imply the development of uniform publishing structures. With the development of appropriate standards, very different models are able to coexist and mutually exchange texts and information. Open archives could become the keystone of this burgeoning ecosystem by indexing all of the outputs associated with a given scientific contribution (review comments, replication attempts, extracted data, etc.).

The majority of actors interviewed as part of this study wish to see the development of permanent, interconnected infrastructures. The various European projects undertaken over the last few years (OpenAIRE, Zenodo) are heading in this direction. An intensification of this movement, with clear support from national institutions, appears necessary. We are in effect witnessing the parallel construction of captive ecosystems: the recent acquisition of the open archive SSRN demonstrates that an actor like Elsevier is moving to incorporate and develop services that cover most editorial practices.

Conclusion

Several simple initiatives can contribute to the construction of an open and sustainable ecosystem:

- Supporting the development of “open” tools and infrastructures and non-profit initiatives via the deployment of indirect assistance such as “in-kind” contributions to software improvement, funding mechanisms (systematic levies on subscriptions and APCs) and “bonuses” awarded to researchers who contribute (by publishing in such entities or participating in editorial development work).
- Encouraging and consolidating platforms and journals practising open peer review, or better still, establishing scientific forums to discuss manuscripts, thereby leading to a qualitative review of the scientific value of those manuscripts.
- Encouraging open infrastructures to do more than simply archive “articles” by highlighting open reviews, data and computer programmes in particular, and improving their interoperability.
- Facilitating the circulation of texts by removing legal constraints (a text mining copyright exception, etc.).
- Amending the administrative provisions regulating research to take into account the ongoing diversification of publishing models (in terms of how both “reviews” and “articles” are defined).

- Abandon biased metrics – such as the h-factor – in the review of researchers' work in favour of a more qualitative assessment of the intrinsic scientific value of publications (by making review comments more visible).
- Dovetailing these initiatives with European actions to promote bibliodiversity and the creation of interoperable open archives.
- Pursuing active, coordinated, think-tank-type reflection – for example, as part of the BSN – on the transition to these innovative practices.

Beyond these concrete measures, governance is becoming decisive in ensuring the development and consolidation of an open ecosystem. The emergence of digital commons (Wikipedia, OpenStreetMap, etc.) shows that it is possible to construct collaborative and self-regulating structures on a very large scale. The fundamentally global nature of scientific research calls for a global response, namely closer link-up between the main actors in open publishing in the broad sense (publishers, archives, institutions, libraries, communities, etc.) and the development of shared infrastructures under the aegis of collegial and collaborative governance.