

A charter for sustainable journal publishing

Bernard Teissier (CNRS, Institut mathématique de Jussieu, Paris)

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The French national network of mathematics libraries ([RNBM](#)) has the originality that it is composed of librarians and mathematicians ; it contains practically all the libraries of French Mathematics labs and departments. Its present director is Odile Luguern, head of the Mathematics library at ENS Paris and I am its scientific director. It was the first entity in France to initiate negotiations, with Springer, for a national consortium agreement (in 1997, for all French Mathematics libraries). It is currently engaged in promoting national acquisition of electronic Math. Archives and national subscriptions to Math. academic journals. It works very closely with the [Cellule MathDoc](#) which is certainly known to you through its project [NUMDAM](#). Let me point out that it has other very useful projects such as [CEDRAM](#) which gives access to journals and seminars and [MiniDML](#) which gives access to a large number of digitalized mathematical works.

The diffusion in space of mathematical results and ideas is now largely and successfully electronic. The success is so great that it tends to overshadow the validation of results and their diffusion in time (a.k.a. long-term archiving) as validated results, for which the only method is some version of journal publishing. It is not because validation by peers is not perfect that it should be disregarded, and I hope we all agree that judging the quality of a paper or book by the number of times that it is quoted is not appropriate for Mathematics.

I shall postulate that we should preserve and improve our journal publishing system, albeit with adapted goals (validation and time diffusion) and also preserve its diversity, which is not a luxury but a part of its adaptation to the diversity of mathematical inventiveness.

It is now quite clear that the big deals of some of the commercial publishers threaten to eliminate academic publishing of journals in Mathematics simply by gradually absorbing all the resources of libraries. It is also clear that their aim to sell e-only subscriptions and gradually make the printed version a luxury without providing a reliable long-term accessible archiving threatens the long-term preservation of our access to our own documentation. The big deal is not sustainable for us, scientifically or economically. We are (with our close neighbors of theoretical Physics and theoretical Computer Science) rather isolated within the scientific community, since other sciences have different methods and preoccupations concerning their documentation. We can therefore hardly hope for a spontaneous trend reversal. Nor can we continue to hope (for those who did) that tomorrow some new form of online publishing will play the same role as our current system for a nominal price. It appears that in Mathematics Open Access publishing is not really flourishing, perhaps because of the lack of guarantee of perennity and the reactions to author fees, which give to those who control the money the possibility to control publication. Anyway good publishing does have a non-negligible price, and so does long-term preservation, and subscription rates should not stray too far from that. On the other hand there is the need to make freely available to the public what it paid for in taxes is more and more recognized, and this trend can take forms which disregard the price of editing, refereeing, etc.

I propose that we should promote with great determination a system close to our present system of academic publishing, which is a very important asset for us, and delineate and publicize such an economic and scientific model, which is clearly different from the unsustainable ones of a part of the commercial system.

We should have the goal that an increasing proportion of mathematical papers are published within the framework of such a model, so that it becomes a stronger and stronger competitor for the big deal in

our field. I think that is the only way to make ourselves heard (if at all) in the boardrooms.

And in order to achieve that goal, we should make the postulates of academic publishing explicit : the aim is not to maximize profit, but to have an economically and scientifically sustainable system.

Here are some of the aspects taken into account by the academic publishing system : Our measure of quality for mathematical work is not by impact factor but by the educated subjective judgment of peers in the evaluation committees and indices adapted to the particularities of our field¹. Subscriptions to journals whose value/price ratio drops can be freely cancelled since clearly the absence of this possibility is scientifically noxious. Long-term preservation is guaranteed by a (probably more and more limited) number of archiving-quality printed copies in addition to the electronic archiving systems, etc.

The academic system does have its perils, such as the formation of cliques, and it is healthy that it should have some external competition. It is true also that the commercial system, which can more readily invest in scientifically meaningful but risky endeavors, has a positive role. But at this time the situation is much too unbalanced and we need to set up competition for the big deal and its business model as it stands.

The reason given to justify the very high price of some journals was the visibility which they give to their content, what I call the *browsing factor* and deem more significant than the impact factor for Mathematics. The validity of this argument diminishes rapidly as we get more and more of our information about recent work from the ArXiv.

The RNBM has been trying for years to encourage mathematicians (the established ones at least) to avoid dealing with journals with a low quality/price ratio. It is a long struggle, and I think part of the problem is that we cannot offer clearly defined options.

Right now we are trying to set up in France a system of permanent national subscriptions for some academic mathematics journals (not just the French ones!) and national acquisition of their archives. One of our goals is precisely to encourage academic publishers to develop by offering them some long-term stability. But we also worry that some large academic publishers, who now distribute more and more of the previously isolated academic journals, could come to be tempted by the business models of commercial publishing.

I propose that publishers of Mathematics journals should be given the possibility to adopt a precise « sustainable publishing charter » with commitments concerning in particular:

- the absence of author fees and the possibility of subscribing with appropriate rebates to selections of individual titles instead of publishers' bundlings/packageings,
- the determination of prices and of their increases (in particular in comparison with the increase of the quantity of published material).
- The quality of journals is maintained ; no increase of volume and price by lowering the quality. Subscriptions can be freely cancelled if the value/price ratio drops.

¹ Ranking journals as a means of evaluating mathematicians according to their publication record is a very questionable option, encouraging the fragmentation of work for publication. Moreover the value of a mathematical journal has a local component, its usefulness to a given community, and a global one. How can a ranking take this into account ?

- sending papers (copy of record) to an open access archive after a short time (say 3 to 5 years).
- providing paper copies of archiving quality or the files needed to print them, cooperation with archiving libraries and all systems of dissemination and organization of data concerning mathematical literature.

Obviously it would not be easy to formulate such a charter, but there are competent people to do it. Indeed a part of it could be a "charter" version of the best current practices recommendations of the IMU for journals (2010) and recommendations 11 to 15 of its 2004 document on this subject (see <http://www.mathunion.org/publications/reports-recommendations>). A roundtable of mathematicians, publishers, librarians and IMU experts could produce the desired charter. By and large, many academic publishers are already within its scope as I envision it, while the business models of some commercial publishers are clearly outside of this scope. The IMU could perhaps serve as a referee to check, with the help of librarians, whether those who sign the charter really respect it.

Of course, commercial publishers would be welcome to adopt it for some (or all) of their mathematical publications and I do believe that some could, especially as the competition from sustainable publishing grows. Hopefully more mathematicians would prefer to submit to (or referee for, or be editors for) the journals which respect that charter, and one may expect that in a few years many of these would react by significantly increasing their volume of publication. This respect of the charter could also come to be important in the policies of academic libraries and a tool in the negotiations of subscriptions. It could even be, in an ideal world, of some significance to hiring and promotion committees in the case of established mathematicians.

At least a clear choice would be offered to editors, authors, referees, librarians, and publishers.

Of course the same principle could be extended to the merchandising of e-archives and e-books, for which some publishers and distributors are right now trying to create again rent-based business models which are not in the interest of users. In particular in those models libraries get less easily accessible information (catalogues) on each e-book, to encourage them to buy packages. This is not acceptable.

In time the sustainable charter publishing of Mathematics journals may converge with an evolution of some of the current open access publishing models, but right now it seems to be both the fastest and the safest way to move towards sustainability.

Experimentation of new models is extremely useful but if we do not define as clearly as we can what we deem necessary for sustainability in our field, we cannot complain if those who make universal models for publication and access, whether they are commercial publishers or government agencies, do not take our needs sufficiently into account.