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About The Future of Mathematical Journals Jean-Pierre BOURGUIGNON (CNRS-Institut des Hautes Études Scientifiques, Bures-sur-Yvette, France)

Recently I was invited to take part in a workshop on "The Future of Mathematical Journals" held at MSRI at the initiative of the American Mathematical Society and the London Mathematical Society. We all know that this question is of paramount importance for the development of our discipline. It has many aspects, some quite technical, some economical and some political. The point I stressed in my presentation at the workshop was the need to approach the problem using a systemic approach, as it is typically a question in which secondary effects can have, in the long run, the same impact as primary effects.

As we all know, mathematicians developed a usage of mathematical journals that is, in many respects, specific to them. Journals are supported by the community in the sense that submitting articles to journals is free, and referees evaluate articles also for free, although this work is sometimes extremely time consuming as it requires thorough checking of content. Also, because of the long term value of published articles, mathematicians care about the long term accessibility to mathematical literature.

This model has been recently under great pressure for several reasons, all connected to the new possibilities offered by internet to access information. The question of "free access" has become a central issue. It is not an easy one as it challenges the economical models on which journals have been based in the last decade. It can actually be a threat to learned society or academy-based publishers, who do not have the financial plasticity of larger publishing houses.

My main concern is related to the fact that, in recent years, mathematicians have been working under an increasing pressure, like many other members of the academic community, because of the squeeze of free time, the increasing role of funding coming through projects, as well as the pressure to publish, their performance being more and more rated on the basis of bibliographic data.

In my view this introduces a real threat on content. Indeed, mathematicians can devote less and less time to it because the pressure to publish quickly is building up, but also because a lot of time traditionally dedicated to evaluating the content of articles is taken away by the demand for evaluating projects, structures, career development, etc; in the last twenty years, these demands have grown considerably at the expense of genuinely reading articles. The risk is that more and more articles are read less carefully.

Another aspect of the threat comes from the mathematical community itself: in the constrained environment we live in, more and more published articles tend to be "almost" correct in the sense that the true experts in the field can determine how some proofs (or some statements) have to be modified (most often slightly) to make complete sense, and to achieve what they promise.

The existence of "grey areas" in publications poses a real threat to the development of the mathematical enterprise, since it may prevent newcomers, and I think typically of young mathematicians from communities that are being formed in emerging countries, from participating in the advancement of mathematics at the right level. This is both unfair and unhealthy for the discipline. As responsible members of a scientific community, we should not tolerate that such a situation develops, and fight against this tendency with determination.