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***Scientific Knowledge as a commons:
How to improve the peer review and dissemination of research outputs***

Scientific publication in peer reviewed journals is the backbone of the current research system. Nowadays the process of peer reviewing and the dissemination of articles are controlled and privatized worldwide by publishers, they own the journals, peer review reports, and articles they publish. Researchers are not paid by publishers for writing articles and referee reports, but research institutions have to pay huge amounts of money to publishers to access those articles, while the referee reports are non-disclosable and lost to research. Unfortunately researchers are kept in the dark about the business model of publishers and how much it costs to their institutions. The business model of publishers made sense when they were printing houses, but it has become harmful for research now that Internet can be used instead.

We will first describe the present system and then propose alternative solutions that take advantage of the digital revolution and consider scientific knowledge as a commons. This new approach is inspired by the work of *Elinor Ostrom*, the only woman having ever received the Nobel prize in economic sciences for '*showing how common resources can be managed successfully by the people who use them rather than by governments or private companies*'. [1]

Knowledge, like language, is not a merchandise to be traded but a commons that everyone should share worldwide and preserve for the generations to come. Scientific results that are not shared nor preserved are lost forever. On the contrary, when a researcher shows her results to a colleague she does not lose them but can thus improve them, correct errors and get new ideas. This is a positive sum game. Peer reviewing and publishing generalize such an exchange of results and ideas. This is why research outputs (*e.g.*, articles, data and codes) should belong to the *knowledge commons* one should collectively develop.

References

[1] Understanding Knowledge as a Commons: from Theory to Practice. Edited by Charlotte Hess and Elinor Ostrom, MIT Press, 2006

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