



Electronic publishing and Open Access

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70s-90s : electronic publishing tools

- In 1972, engineer *Bob Khan* (DARPA) and computer scientist *Vinton Cerf* (UCLA) invented the *TCP/IP* protocol for the network *Arpanet* created in 1975.
 - In 1978, computer scientist *Donald Knuth* (Stanford University) published the *Open Software TeX* for typesetting research articles.
- In 1990, physicist and computer scientist *Tim Bernes-Lee* (CERN) created the *Open Protocol http* of *WWW* without patenting it in order that it could be adopted by anyone.
- In 1991, physicist *Paul Ginsparg* (Los Alamos National Laboratory) created the *Open Platform ArXiv* to share preprints for exact sciences.
 - In 1994, economist *Michael Jensen* (Harvard University) created the *Open Platform SSRN* to share preprints for social sciences, it was the largest repository in 2013 but *Elsevier* bought it in 2016.
- In 1998, the professor *John Willinsky* (Stanford and Simon Fraser Universities) released the *Open Software OJS* to manage editing, peer-reviewing and publishing, used today by more than 50 000 research journals.



2001, first revolt against publishers

Declaration of SPARC (Scholarly Publishing and Academic Resources Coalition) :

Please join me in DECLARING INDEPENDENCE from publishers and journals that do not serve the research community.

We scientists *can* exercise control of our journals. We can transform them from commercial commodities back to instruments of service to education and research. When we are in control, we fulfill our responsibility to ourselves, to society, to our institutions, and to our colleagues throughout the world.

In recent times, purely commercial interests have gained sway over too many of the journals that we depend on for research information. Maximizing profits has become the controlling goal. A system that should serve us is at the mercy of corporate acquisitions and profit-oriented planners. Disseminating scholarly research seems to be an afterthought.



Michael L. Rosenzweig
Editor-in-Chief, *Evolutionary Ecology Research*
Professor, Department of Ecology and
Evolutionary Biology, University of Arizona

2003, Berlin declaration on Open Access

The Internet has fundamentally changed the practical and economic realities of distributing scientific knowledge and cultural heritage. For the first time ever, the Internet now offers the chance to constitute a global and interactive representation of human knowledge, including cultural heritage and the guarantee of worldwide access.

Goals

Our mission of disseminating knowledge is only half complete if the information is not made widely and readily available to society. New possibilities of knowledge dissemination not only through the classical form but also and increasingly through the open access paradigm via the Internet have to be supported. We define open access as a comprehensive source of human knowledge and cultural heritage that has been approved by the scientific community.

In order to realize the vision of a global and accessible representation of knowledge, the future Web has to be sustainable, interactive, and transparent. Content and software tools must be openly accessible and compatible.

Among signatories

Bernard Larrouturou
Director General, Centre National de la Recherche Scientifique (CNRS)

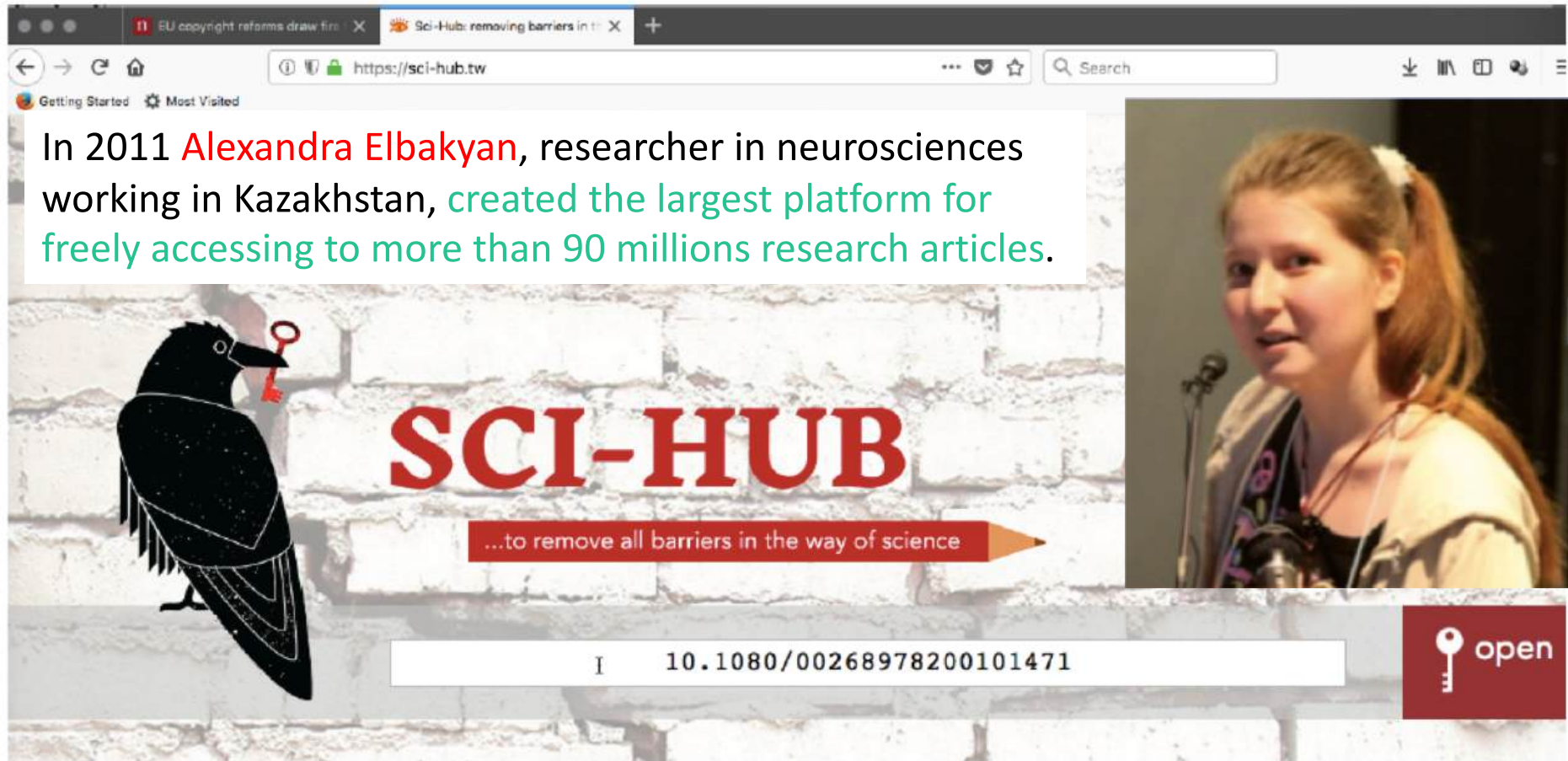
Christian Bréchet
Director General, Institut National de la Santé
et de la Recherche Médicale (INSERM)

*Declaration
signed in Berlin on
22 October 2003*

http://openscience.ens.fr/ABOUT_OPEN_ACCESS/DECLARATIONS/



2011, a young researcher innovated



In 2011 **Alexandra Elbakyan**, researcher in neurosciences working in Kazakhstan, created the largest platform for freely accessing to more than 90 millions research articles.

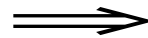
When an article is behind a pay-wall copy its *DOI (Digital Object Identifier)*, then open *Sci-Hub* and enter its *DOI*

<http://openscience.ens.fr/OTHER/SCIHUB/>



What is the legal framework today ?

Today publishers use electronic publishing but still register them under *Copyright Law (Statute of Anne, 1710)* and can thus require researchers to give them their Copyright for free, with the signature of one co-author engaging all of them.



Publishers have the exclusive possession of each article they publish for over a century (*Copyright Term Extension Act, 1998*) and they can sell articles at any price they wish.

Intellectual property laws vary from one country to another :

- in Continental Europe, Latin America, Japan and Korea they protect the authors' rights,
- in Commonwealth Countries and the United States they protect the publishers' rights,
- until recently, China, India and the former Soviet Union countries had no laws to enforce these rights, and authorized anyone to reproduce and distribute published articles.

Unfortunately today those rights depend on the rules of the *World Trade Organization*, and on various bilateral treaties, whose content is unknown, and for which there is not yet sufficient case law to judge what the situation is really in these countries.

2011, how I learned about publishers

As member of the COMETS (Ethics Committee of CNRS chaired by *Jean-Pierre Bourguignon*), I wrote the *'Recommendation on the relations between researchers and publishers'*.

To this end, I interviewed librarians in charge of negotiations with publishers and lawyers specializing in intellectual property. It was a shock for me to realize how brutal these negotiations are and how dramatic the lack of information researchers have about them.

A researcher, *Jacques Lafait*, who advised the president of UPMC (Paris VI University), had the courage to testify on the conflict his university had with *Elsevier*. In 2011 UPMC refused to renew its subscription to *Freedom Collection* (bundle of all journals owned by *Elsevier*). I appended his testimony to my report, but CNRS removed it from the published version :

The proposed new contract stipulates that the historical sales figures of the establishments must be maintained, thus preventing any documentary policy tailored to the university's needs. The President of UPMC then officially informed Couperin's negotiators of his decision to withdraw from the consortium.

A marathon of negotiations then began between January 14 and 19, 2011, through Couperin. After several round-trips, UPMC obtained:

- (i) a €125,000 reduction in subscriptions in 2011 and a €100,000 reduction in 2012 (i.e. a 21.6% reduction),
- (ii) a contractual commitment by the publisher to provide Couperin and UPMC with a new business model by December 15, 2012 at the latest, initiated in 2011 with pilot establishments including UPMC. Should Elsevier fail to comply with this clause, any institution wishing to do so will be entitled to leave the group for 2013.

http://openscience.ens.fr/MARIE_FARGE/ARTICLES/2011_06_27_AVIS_POUR_LE_COMITE_D_ETHIQUE_DU_CNRS



2012, some mathematicians revolted

On 9 February 2012, *Tim Gowers* and 33 mathematicians published *The Cost of Knowledge* calling to boycott *Elsevier* and stop the *Research Works Act*, a bill in the U.S. Congress owed to *Elsevier's* lobbying to repeal open access policies. On 27 February, *Elsevier* withdrew its support.

⇒ *Tyler Neylon* set up a website for researchers to sign up:

<http://www.thecostofknowledge.com>

20576 Researchers Taking a Stand. [See the list](#)

Academics have protested against Elsevier's business practices for years with little effect. These are some of their objections:

1. They charge exorbitantly high prices for subscriptions to individual journals.
2. In the light of these high prices, the only realistic option for many libraries is to agree to buy very large "bundles", which will include many journals that those libraries do not actually want. Elsevier thus makes huge profits by exploiting the fact that some of their journals are essential.
3. They support measures such as SOPA, PIPA and the Research Works Act, that aim to restrict the free exchange of information.



*Sir Tim Gowers,
Cambridge University
and Collège de France,
Fields medal 1998*



2012, Diamond Open Access model

Publishers and their lobbying agency *STM* were imposing *Gold* and *Green OA* to *EC* in Brussels.

http://openscience.ens.fr/OPEN_ACCESS_MODELS/DIAMOND_OPEN_ACCESS/2012_06_07_Mail_Marie_Farge_to_Tim_Gowers_to_propose_Diamond_Open_Access.pdf

To counter them, I proposed to our group *CoK* to name *Diamond OA* a publishing model where :

‘Neither author nor reader should have to pay and a journal should no more belong to a publisher but to its editorial board. Peer-reviewing and publishing are done using public infrastructures where articles are archived and accessible online for free.’

June 29th 2012, Marie Farge, Note for the French minister of higher education and research

http://openscience.ens.fr/MARIE_FARGE/ARTICLES/2012_06_29_NOTE_POUR_LA_MINISTRE_DE_LA_RECHERCHE



I was inspired by the ‘Diamond Sutra’, a treasure of the British Library from China, which is the oldest dated printed book. Its colophon mentions that ‘on May 11th 868 Wang Jie had it made for universal distribution’.

<https://www.bl.uk/collection-items/the-diamond-sutra>



2016, Europe wants a legal *Sci-Hub*

On 4 April 2016 *Carlos Moedas*, the European commissioner for research, science and innovation launched the *Amsterdam Call* :



"We must create infrastructure. Europe's final transition must be one from fragmented datasets to an integrated European Open Science Cloud. By 2020, we want all European researchers to be able to deposit, access and analyse European scientific data through a European Open Science Cloud"

Commissioner Carlos Moedas, Amsterdam, 4 April 2016



http://openscience.ens.fr/DECLARATIONS/2016_04_04_EC_Amsterdam_Call_for_Action_on_Open_Science.pdf

2017, OA peer-review and publishing

At the request of Carlos Moedas I wrote the chapter on open access to peer-reviewed research publications in a book published by the Commission in 2017.



Scholarly publishing and peer-reviewing in open access¹

Marie Farge,
CNRS and Ecole Normale Supérieure Paris
<marie.farge@ens.fr>

I argued that **research articles**, as well as **peer review reports**, should be **available free of charge**, for both authors and readers, **to ensure that published results** have been **validated** and are **reproducible**.

http://openscience.ens.fr/MARIE_FARGE_ARTICLES/2017_05_15_BOOK_CHAPTER_FOR_THE_EUROPEAN_COMMISSION



2018, open science policy of MESR



http://openscience.ens.fr/ABOUT_OPEN_ACCESS/DECLARATIONS/2018_07_04_Plan_National_Francais_pour_la_Science_Ouverte.pdf



2018, open science policy of CNRS



http://openscience.ens.fr/ABOUT_OPEN_ACCESS/DECLARATIONS/2019_11_18_Feuille_de_route_du_CNRS_pour_la_Science_Ouverte.pdf



2018, Diamond OA platform *Mersenne*



Mersenne employs 15 part-time persons and its production cost is on average 700 € per article and 35 €/pages, which is financed by French public research funding institutions (CNRS-INSMI, Université Grenoble-Alpes, MESR).

THE CENTRE MERSENNE ▶

An open access publishing platform for scientific publications.

The centre Mersenne is a diamond open access scientific publishing infrastructure developed by **Mathdoc**, a support and research unit of the **CNRS** and the **Université Grenoble Alpes**. The centre Mersenne provides all the publishing tools and services that enable editorial teams to manage, produce and disseminate their publications.

The journals, books, proceedings or seminars are from all scientific disciplines, composed in LaTeX and distributed in open access.

[MORE INFORMATION](#)

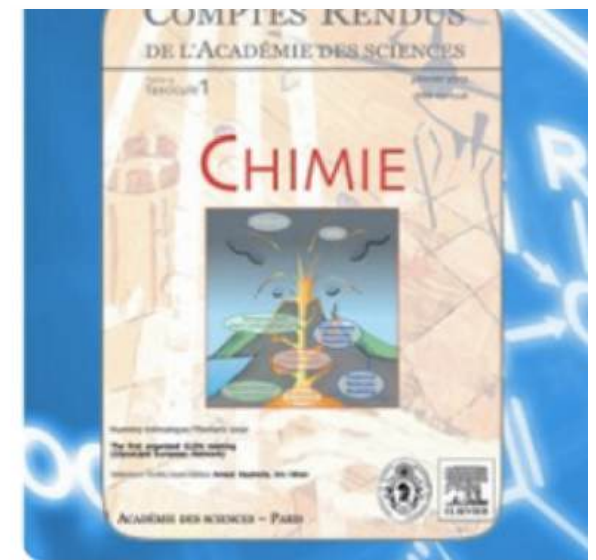
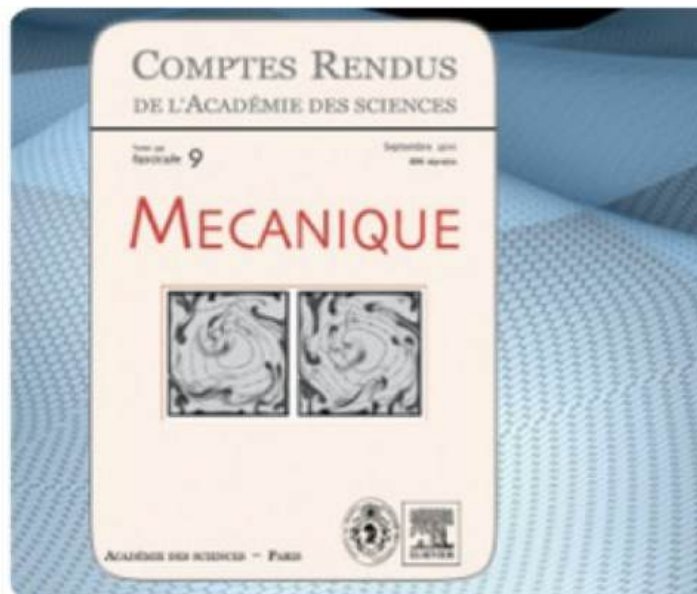
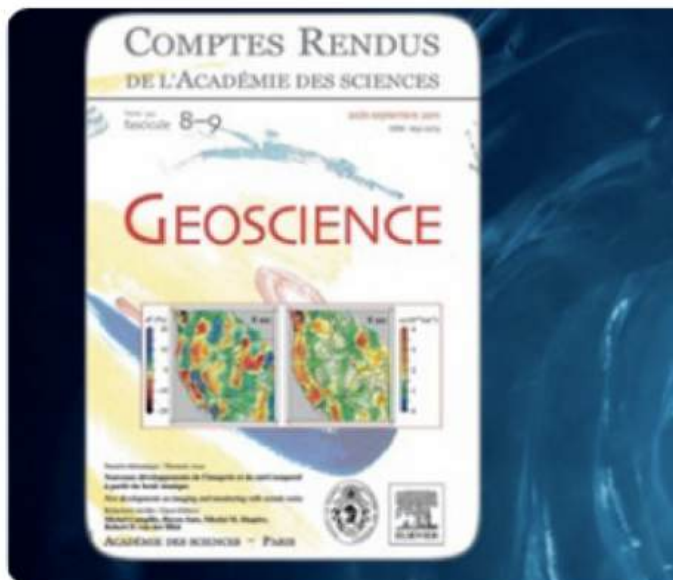
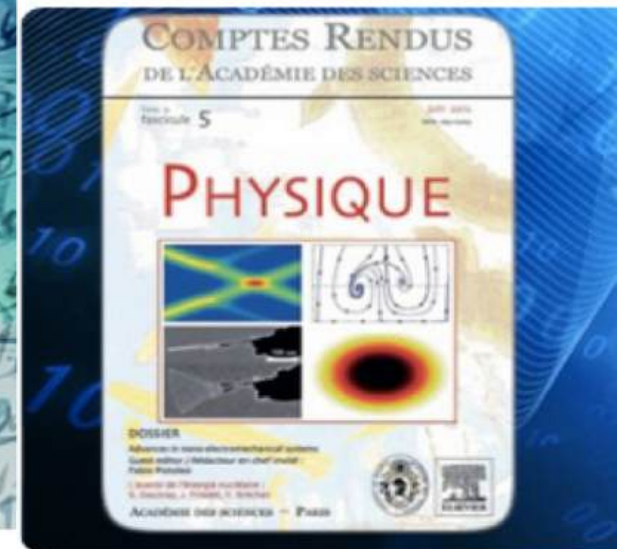
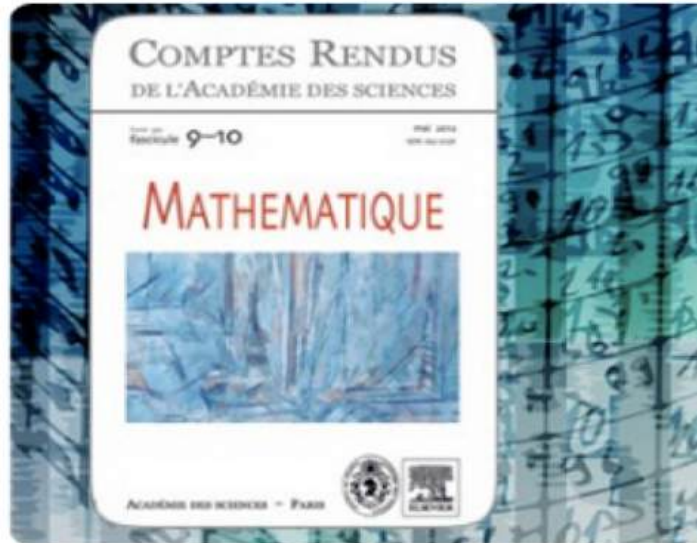


Cienpies Design

<https://www.centre-mersenne.org/>



2020: CRAS emancipated from Elsevier

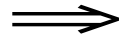


<https://www.centre-mersenne.org/>



Conclusion

Ideas are not of the same nature as material products because when you give an idea you do not lose it, therefore no need to be paid. Sharing ideas is a positive-sum game, because you loose nothing while if an idea is not shared, it is lost forever!



Knowledge is not a product to be traded, but a common good to be shared.








In 2009 Elinor Ostrom got the Nobel prize in economic sciences for: *'her analysis of economic gouvernance, especially the commons, showing how common resources can be managed successfully by the people who use them, rather than by governments or private companies'*.

*Charlotte Hess and Elinor Ostrom,
Understanding knowledge as a Commons,
MIT Press, 2006*



For more information about open access

<http://openscience.ens.fr>

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