

# Open Science and Open Access

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Open Science is an evolving trend in scientific collaboration and dissemination of science. There is already a collection of tools and techniques which simplify the international collaboration on scientific projects, as well as amplify the dissemination of the research results.

The inspiration of Open Science comes from two sources. The first is the very successful community of programmers, which gave us GNU, Linux, Git, etc. The second source comes from scientific fields like biology, chemistry, neuroscience, which, faced with a huge quantity of experimental data and theoretical studies, discovered ways of openly sharing the data and validating the models, in order to prune the errors and better understand the valuable models.

Open Science is not an alternative to the usual way of doing science. It is an enhancement of it, by using the technical means available today in order to collaborate easier, to be able to validate other's models and to use the best scientific results which survive the scientific scrutiny.

There is some misunderstanding which comes from the confusion between Open Science and alternative ways of publication, for example in the trend called Open Access. Publication, especially rigorously peer-reviewed one, is an excellent tool for dissemination of scientific results. Alternative ways of publication try to enhance the publication process so that the research results are more easily available to more people (hence "open access").

Open Science is concerned not with publication, but with means to enhance collaboration during the research process, as well as to help the researchers to validate

scientific results by using the shared information (like experimental data, protocols, programs, etc.).

Therefore, while Open Access is designed to help the reader, Open Science concentrates instead on the writer. Because most of the scientific studies are written and read by researchers, it follows that Open Science and Open Access are complementary ideas.

In programmers community people learned the hard way that there is a clear difference between "open" and "free". In few words, the ideal is "free" and various other tweaks of the ideal come with the "open" denomination.

Likewise, the natural and technically "free" publication ideal was sneakily tweaked to become Open Access. This resulted in a 15 years delay, at least, of open access. All the mainstream OA ideas are not free and all of them are tainted by dishonest people and organisations which promote the interests of the dying legacy publishers and neoliberal academic management.

A significant part of the researchers became aware of that. However, the battle for OA turns out to be more and more irrelevant, because practically OA is achieved, even if it is not fully legal. More and more relevant seems to be instead Open Science. There are already attempts to tweak it, for example by sneakily accepting "open" data with DRM rights, or by promoting glorified, very expensive data hosting solutions as "open" science.

Corporate web has the technical capacity to efficiently host Open Science, but it failed to understand the value of scientific data. Indeed, counted in bits, scientific data as a whole are tiny compared with the daily data exhaust sucked by corporate web companies. Different from the data exhaust, scientific data has a long lasting value.

In my opinion, there is no high expectation for a corporate or academic (if there's any difference today) technical solution for Open Science. Instead researchers should adopt Open Science practices individually if they want their research to be relevant.

There is almost no point to take part to sterile conversation about OA, we can instead concentrate on the most powerful idea of Open Science: validation. The future is not cast in stone.