

How to make open science fair (not an acronym)

Thursday, 11 April 2024 12:45 (45 minutes)

Open science has been widely adopted as the key paradigm for modern science. However, to achieve this lofty goal, one needs to consider the additional work required to practically open all aspects of the scientific processes. Rapid advance on open access publishing is only one of the aspects, and even this solution has also created its own challenges to equity and fairness in the form of publishing fees. Even larger challenges come from opening up the rest of the scientific process, such as research data, software and teaching materials and content, particularly as opening up these outputs is often labour intensive, requiring additional documentation, and can lead to feeling (or sometimes even practice) of unfair use of the outputs.

These challenges have been approached this far from two key perspectives. First by improving the infrastructure and processes to reduce the additional work and resources needed from the output producers. This “infrastructure angle” has been supported by many global (e.g. RDA) and local organisations (universities, national networks, repositories, data stewards, etc.). Secondly, the researchers have been required to make their research more open, framing it as a requirement to their work, or even more generally, as an ethical value proposition, explaining the (often well documented) societal and scientific benefits of opening the outputs.

However, even with the additional support infrastructure, and the great advances on processes for openness, the additional time and effort is still required. As long as the openness of the research outputs is not properly valued in the practical evaluation of research, there is a danger of creating a dilemma for researchers: “should I spend my time and effort making science open and acting as a good member of scientific community, or should I instead concentrate on increasing the metrics which do support my career.” In the strict competition to faculty positions, we might end up in a situation where acting “unethically”, e.g. by spending minimal time to increase openness, is actually rewarded in the career progression. This comes even more challenging when considering the challenges for researchers from lower income countries, who might not have access to the infrastructure tools mentioned above.

It is thus critical, that we discuss and agree more widely how to value scientific openness in general, and (at least from my perspective) scientific outputs in particular. What makes a good dataset? What use of research software source code is of value to the community? What is the value of the openness for the organisations paying for the researchers’ salaries? Who should act first?

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Session Classification: Keynote