

## Norms in scholarly communication: changes brought by open science

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Michael Nielsen, the author of *Reinventing Discovery: The New Era of Networked Science*<sup>(1)</sup>, defined open science as the idea where “scientific knowledge of all kinds should be openly shared as early as is practical in the discovery process.”<sup>(2)</sup> This overly simple statement is equivocal and troublesome for those seeking to practice open science. Scientific knowledge can be available in a variety of formats, including publications, data sets, audio-visual materials, methods, software, and so forth. They may already have established ways for sharing; or they may have not been traditionally shared at all. The idea to share “as early as is practical” depends on the technical and organizational constraints that one might face. In addition, Nielsen leaves it indistinct whether “openly shared” means either simply putting on the public web or with some additional procedures required.

The public consultation conducted by the European Commission in 2014 denotes that open science is an umbrella term for a series of movements in research and related practices, referring to a system of related changes that must be considered in relation to one another. Three essential aspects of open science are: (1) its relation to digital technology, (2) changing research practices and their impact on the research system as a whole, and (3) a certain vision of science as a community of practice. The objective of this public consultation was to receive feedback from community stakeholders on ‘science 2.0’, which the majority of respondents agreed that ‘open science’ was a more appropriate term to describe.<sup>(3)</sup>

If we regard the scholarly community as a social group, its members share more or less mutual values, which in turn guide their behaviors as social norms. Such norms could influence not only members’ behaviors but also define goals and the means of achieving them. Scholarly publishing, or more broadly, scholarly communication is thus governed by social norms set by the research community as a whole. The visions distilled in Nielsen’s simplistic statement demand a reform of the shared values in the traditional scholarly community and the practices cultivated therein.

There are new infrastructures allowing scholarly outputs other than VoR or the version of record, such as preprints and conference presentations, to be openly shared. OA mega-journals, which simplify peer-review process and speed up the publication process only if scientific validity is met, are increasing by number and exceeding the volume produced by traditional peer-reviewed journals. Prevailing social media made it possible to quantify the online behavior of readers, leading to the wide adoption of altmetrics. These new forms of outputs and indicators have brought new perspectives to research performance evaluation.

In this presentation, we will discuss the various changes brought about by science 2.0 or open science in contrast to the perceived norms in scholarly communications.

### References:

(1) Nielsen, Michael. *Reinventing Discovery: The New Era of Networked Science*. Princeton University Press, 2011, 280p.

(2) Gezelter, Dan. (2011, July 28). *An informal definition of OpenScience / The OpenScience Project*. Openscience.org. <http://openscience.org/an-informal-definition-of-openscience/>

(3) European Commission. (2015, February). Validation of the results of the public consultation on Science 2.0: Science in Transition. [http://ec.europa.eu/research/consultations/science-2.0/science\\_2\\_0\\_final\\_report.pdf](http://ec.europa.eu/research/consultations/science-2.0/science_2_0_final_report.pdf)

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