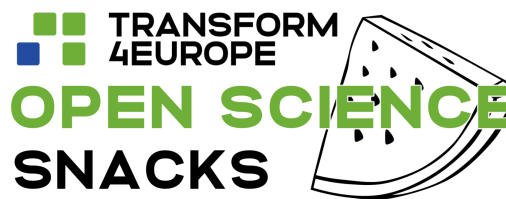


## T4EU Open Science Snack 02: Myths about Open Science



Dear Open Science Snackers,

Welcome to our second Snack. As promised, this time we will take a look at the truth behind common myths and misconceptions about Open Science. Some of the myths have a kernel of truth, but other myths are just that - myths! Let us take a look at five of them:

### **Myth 1: Open Science takes time - Time lost for my research.**

Learning new and open ways of working takes time - time spent making your research better. It will be more accessible, more transparent and more reproducible.<sup>1</sup> Yes, working openly will take some time at first, but it has many benefits and will save you time later!

- Open Science practices take time. Time to learn how to work openly, time to document your research plan before collecting any data (also known as [preregistration](#), stay tuned for Snack 05), time to prepare your data and materials for sharing. In many cases, however, they simply require you to do what you would have done some time later anyway. And they can save you from regrets: Well-documented data is useful even years later (to others - including your future self), and thoroughly prepared and registered research plans allow you to catch any errors before the data is in the box.<sup>2</sup>
- If you are a student or an early career researcher, you will have to learn research practices anyway - so why not learn the transparent, accessible and reproducible way of doing things from the start?
- More and more universities and funders require and reward the practice of Open Science.<sup>2</sup> Practicing Open Science will therefore increase your chances of a successful academic career.
- For more benefits of practicing Open Science for you as a researcher, [take another look at Snack 01](#).

### **Myth 2: If I practice Open Science, I will be scooped!**

Some researchers fear that openly sharing their preregistrations, methods, and data, and publishing preprints, will make them vulnerable to other researchers stealing their ideas. If everything is open, couldn't anyone just take my ideas and pass them off as their own? This is a very understandable sentiment. Fortunately, simple precautions can effectively prevent researchers from being scooped by others. Preregistrations can be kept private until the work is published. But once it *is* published you can demonstrate to the world *when* you had *what* ideas and claim full credit for them. Similar precautions can be taken for other aspects: Methods, materials and data can be kept private until the work is published and data sets that have not been fully exploited yet by the original researchers can be kept private for several years before being made fully accessible to the public. However, be sure to share the data that you report in research outputs, such as journal articles and preprints, for reproducibility.<sup>3</sup>

In addition, making your work accessible to others earlier, along with clear guidelines for attribution, increases the likelihood that it will be used and cited. This potentially expands its reach, and you can also benefit from valuable feedback from other researchers.<sup>4</sup>

Make sure your work gets a [DOI](#) (a persistent Digital Object Identifier) for easy sharing and tracking. This will also enable you to be cited for research outputs other than journal articles (materials, data, apps, etc.). Additionally, you can and should license your work. This empowers you to decide who can use your work, for what purpose, and under what conditions. One popular licensing solution is [Creative Commons](#). They also have a [license chooser](#) if you need assistance in choosing a license.

### **Myth 3: If I practice Open Science, I have to open up everything!**

True to the European Union's principle of "as open as possible, as closed as necessary", you can, of course, keep data closed if there are valid reasons against full open access. This may be necessary, for instance, to protect personal data or endangered species.<sup>5</sup> Rich data from larger projects may also be kept private for a limited period of time to allow researchers to fully exploit larger datasets before releasing the full data (see Myth 2).<sup>3</sup> In general, however, publicly funded research should also be publicly available. Therefore, make sure you share as much of your methods, materials, and data as possible at any point in time, at least rich [metadata](#) (data about data), so that others can discover your work and learn how to access and cite it!<sup>6</sup>

### **Myth 4: Open Science and Open Access are signs of lower quality.**

This is a complete misconception - and an unfortunate one! On the contrary, empirical evidence suggests that [registered reports](#) - a journal format that closely follows Open Science standards - are of higher methodological, statistical, and overall quality than the standard publishing model.<sup>7</sup> Plus, the more open your research, the higher your chances of receiving feedback and improving your work.

Where does the myth come from? Unfortunately, there are some [predatory publishers](#) who abuse the Open Access label and charge authors publication fees without providing significant editorial and peer review services.<sup>6</sup> By publishing almost all submissions without rigorous quality control, these publishers contribute to the impression that Open Access publishing is of lower quality than traditional publishing. High-quality Open Access journals, of course, implement peer-review processes that are as rigorous as those used by closed-access journals - sometimes even as [Open Peer Review](#) (for an index of high-quality Open Access journals, see the [Directory of Open Access Journals](#)).<sup>4, 8</sup> Initiatives such as [Think.Check.Submit](#), provide guidance on how to choose scholarly journals that can be trusted.

### **Myth 5: Open Science is just a hype - it will go away.**

Is Open Science just a temporary movement of a few that unlikely to gain more traction and will soon fade away? This is unlikely. Realistically, Open Science is here to stay.<sup>4</sup> More and more funders and journals are imposing Open Science requirements, and universities, other organizations and nations are developing Open Science policies. See, for instance, [this overview from the Council for National Open Science Coordination](#) of how Open Science is being addressed in different countries. As the global effort to combat the Covid-19 pandemic has shown,<sup>9</sup> Open Science is essential if we are to tackle global crises such as climate change.

Some would even say that Open Science is "just science done right": Openness, transparency, reproducibility, and accessibility are cornerstones of the scientific endeavor.



Melanie Imming, & Jon Tennant. (2018, June 8).  
Sticker open science: just science done right.  
Zenodo. <https://zenodo.org/records/2613332>

In the next Snack, we will take a closer look at perhaps the most prominent aspect under the Open Science umbrella: Open Access publishing.

Best regards,

The Science4All Initiative

[\[Transform4Europe research & innovation project T4ER!\]](#)

## Upcoming Snacks

- Open Access
- Open and FAIR Data
- Preregistration 101
- The value of replications

You can find all the Snacks also on our website: <https://transform4europe.eu/t4eri/science4all/>

## Sources used:

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## Further reading

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