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The Open Science Cafe at the Open Science Fair

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In order for open science to happen, it is important to get out of your own bubble and connect to stakeholders with different interests in science, policy, research workflows and infrastructures. That is why LIBER hosted an Open Science Cafe at the Open Science Fair in Athens last September. The initiative was organised together with six European projects, and provided participants with the opportunity to talk about open science related topics in an informal setting.

How does it work, an Open Science Cafe?

In short, the organised Open Science Cafes were roundtable conversations ignited by statements on a set of cards. Participants could pick a card with a statement related to open science from a pile, talk about this for some time, and then move on to the next card. After half an hour the participants would move on to a new table and a new group of people. A moderator and notetaker kept track of the conversation and made sure that all voices were heard.

Notes were taken in two ways: most conversations on a specific statement or topic led to a mindmap. In case someone would come up with a brilliant remark that was just spot on, it could also be written down on a 'brilliant quotes and ideas' card.

Want to organise an open science cafe yourself? These things will help you get started:

- Instructions for moderators and note takers.
- Mindmap cards (to make notes on different topics)
- Brilliant quotes and ideas cards
- Playing cards with statements

Who were involved?

Around 30 people joined the Open Science Cafe in Athens, including researchers, managers, data storage specialists and librarians. The open science cafe was organized by LIBER, OpenMinTeD, FOSTER Plus, EU-DAT, FutureTDM, EOSC, LEARN and OpenAIRE. The following people were involved as chairs, note takers and for media support:

- Martine Oudenhoven, LIBER
- Simone Sacchi, LIBER
- Nancy Pontika, Open University
- Gwen Franck, EIFL
- Iryna Kuchma, EIFL
- Mappet Walker, Frontiers
- Daan Broeder, Meertens Instituut
- Marjan Grootveld, DANS
- Vasso Kalaitzi, LIBER

Results from the Open Science Fair

The topics that were discussed most and resulted in most mindmaps were Open Access, Open Data and Text and Data Mining (TDM). However, conversations on other topics also led to some interesting insights. Below is a summary of the opinions and thoughts, divided into different categories.

Text and data mining (TDM)

Most conversations on TDM evolved around the stakeholders, skills and education, legal and data & privacy. In general the participants did think that TDM is important for a lot of different stakeholders, even though there is still a lack of skills and no stable copyright law. There are also open ends when it comes to privacy aspects. Some more detail:

- **Stakeholders:** TDM is important for science, humanities, law.- Researchers don't always know how to share data, even if willing. - In the case of health, TDM should actually be a state matter, even though commercial players may be better at it.- Libraries have a role in TDM because of their connections to publishers, knowledge of publishing and they can provide access to data that can't leave the building.
- S**kills and education:** TDM does not seem to be on the radar of students yet, some good courses are not attended well. – Education has to start at a very basic level.
- **Legal:** Need for stable copyright law that allows TDM for research. Research is defined by the method rather than the affiliation.
- **Data & privacy:** Content mining in the case of diseases (for example Zika) does raise concerns. What about privacy? How are data handled? What if insurance companies get hold of the data? Who would be accountable?

Citizen science

The statement "It should be easier for citizen scientists to publish their work in a scientific journal." did raise some eyebrows. Even though in the TDM conversations some defined research "by the method rather than the affiliation.", some felt that this did not extend to scientific publishing.

- **Publishing:** Why would citizen scientists be interested in publishing results? They don't have a career to run do they? - Citizen scientists can just put their data in Zenodo.
- **Stakeholders:** Citizen scientists do often not walk alone, and can contribute to different levels of science (including data collection, promoting open science, a more sustainable science).

Open peer review

In general, the participants were in favour of open peer review and thought it would improve the quality of research and accountability.

- **Accountability:** Open peer review is about being accountable as a reviewer. - With blind peer review, researchers usually also know who reviewed their work (it's a small world)
- **Quality:** More discussion between researcher and reviewer would enhance quality of research - Publishers should think about a balanced mix in who reviews.
- **Status quo:** Anecdotal: someone asked for non-anonymity in a peer review process but that was considered to be strange as everyone else was anonymous.

Open data

Data management is a challenge, in part because of practices, skills and time, in part because of the amount of different stakeholders involved and confusion about ownership of data. Where to start? The discussions seem to indicate on both levels: policy and practice, and top down as well as bottom up.

- **Stakeholders:** A lot of stakeholders (not just researchers) - Researchers shouldn't be just data providers. - Listen to what researchers have to say about open data. - Data are very discipline specific. - Researchers tend to think about research data management only when it's imposed upon them. - Open data is the responsibility of the data owner, but who is the data owner? - We need both, horizontal (government, funders) and vertical (discipline, project) support.
- **Legal:** It is difficult to make sharing of research data mandatory, because of licences, it's not a finished product.
- **Policies:** There are degrees of formalities in data management plans. - RDM policies enable practices. - Should there be an embargo period on shared research data? - Most researchers are not interested in a policy, but in good practices. - Let's first change the sharing attitude and answer legal questions, after that we can talk about open data policies - Yes, research data management has to be imposed - For an open science plan you need bottom up as well as top down initiatives. Right now there is not a lot of pressure or support in the university to do it.
- **Practice:** A negative result is still a result. - There is a lack of data curators and infrastructures
- **Skills and education:** It's difficult to keep track of my own data, how can it be structured in a way that others would understand it? - There's a lack of education. - As a researcher, I need help with open data. - Where is not the issue, but the actual process of sharing data is.

Open access

A large part of the open access conversation focused on incentives for researchers to publish open access. Incentives seem to lay in a change in the whole research evaluation system, and in money as "a researcher follows the money."

- **Research evaluation:** Impact factor of journal vs. citations of individual article. - There is a need for qualitative metrics. - Open is not considered a value by all scientists. - We need different incentives, a different research evaluation process. – The return of investment on open access publications is not clear on an individual level immediately. - There is still a high pressure to publish a lot.
- **Money:** Researchers are often unaware of budgets. - A researcher follows the money. - Commercial publishers are double dipping right now, but their business models won't change overnight. The business models should be made clearer for researchers. – Where should the extra money for open access publishing come from? And is it a good thing to feed the behavior of publishers? The same money could also be used to fund universities and research institutes.
- **Benefits and disadvantages:** Can open access help research progress faster? No doubt, yes! - Open access could not just benefit the developing world but also freelancers, lawyers

and citizen scientists. - Open access contributes to the data deluge. - Open access button can be useful, but a lot of people have never heard of it.

- **Ethics:** We cannot go on like this towards tax-payers. Something has to be done!
- **Policies:** Research politics get in the way of policies. - Researchers don't like to be told what to do. - Policies should support self-archiving and publishing

Open lab notebooks

Although some people didn't see the value of sharing lab notebooks, others thought it could avoid repeating failed experiments, provided it could be mined and had the right (meta)data.

- **Why share lab notebooks?** What is a lab journal? They are not used in all disciplines. - It is not useful to share lab notebooks, as it is not reproducible. - Sharing lab notebooks should not be mandatory. – I don't see a purpose in sharing lab notebooks - This would be good, as it avoids repeating failed experiments.
- **Who owns the lab notebook?** Lab journals are personal. - Lab journals are property of the research group.
- **Technical:** Handwriting can be a problem. - Sharing lab notebooks is only useful if it's connected to a device that explains the history. - Lab notebooks should be in a shared and mineable space, as long as there is still evidence of ownership and it is connected to a physical device that includes history, access and results.

Other topics:

Some other topics were discussed that did not fit any of the topics above. There were no strong conclusions, but this gives you an impression of what was said:

- **Open science, too much talk too little action?** Talking is an important part.
- **Licensing:** Obligatory CC-BY and CC0 licences would lead to the opposite of open. - All publicly funded output should be open access by default - People are not aware of the implications of CC-BY and CC0, so they avoid it. - How should software be licensed?
- **Reasons to attend Open Science Cafe:** Collect new ideas – Network - Push sustainability in Open Science - Learn

Brilliant quotes and ideas

Some interesting remarks were made during the conversations, and they were collected on the 'brilliant quotes and ideas cards'. The favourite quote of the organisers was turned into a visual for dissemination purposes: