

June 2017

Making Open Access/Open Data/Open Science A Reality

Gemma Hersh

Elsevier, g.hersh@elsevier.com

Follow this and additional works at: <https://docs.lib.purdue.edu/atg>



Part of the [Library and Information Science Commons](#)

Recommended Citation

Hersh, Gemma (2017) "Making Open Access/Open Data/Open Science A Reality," *Against the Grain*: Vol. 29: Iss. 3, Article 43.

DOI: <https://doi.org/10.7771/2380-176X.7782>

This document has been made available through Purdue e-Pubs, a service of the Purdue University Libraries. Please contact epubs@purdue.edu for additional information.

Making Open Access / Open Data / Open Science A Reality: An International Overview

by **Gemma Hersh** (VP, Open Science, Elsevier, London) <g.hersh@elsevier.com> www.elsevier.com

The Collaborative Road Towards Open Access

If there's one thing we've all observed about politics in recent years, it's that while polarization makes for great soundbites, it doesn't lead to progress or results. Unfortunately, the same approach has been applied to scholarly publishing in the past, with some defining the industry — inaccurately, in our view — as comprising old-guard legacy publishers on one side and ideologically driven evangelists on the other. Such polarization was behind the slow initial uptake of open access, where green OA was fragmented at best and nonexistent at worst, and gold open access offerings were virtually absent in mainstream publishing.

Fortunately, in more recent years the ecosystem has moved past the rhetoric and begun to develop into a real market, and a more rational policy framework that encouraged the so-called old guard and the evangelists to work together to increase the volume of open access content, along with new technologies through which to use it.

This has been particularly true over the last year, when the scholarly research ecosystem has seen significant progress in making open access, open data and open science a reality. The volume of gold open access content globally now stands at 20%, and the remaining 80% of articles published under the subscription model are eligible for the green road to open access. This change has been driven by one key variable: collaboration.

The Benefits of Collaboration

As US federal funding agencies continued to explore how to implement their public access plans in line with the OSTP Memo published by the White House Science and Technology Office in 2013, the collaborative initiative CHORUS made great strides in coordinating publishers and funders. Today it enables access to about 75,000 articles on research funded by the Department of Energy, the National Science Foundation and others and is ready to enable access to many more.¹

CHORUS is a partnership between participating publishers and funders to use existing publisher infrastructure to effectively enable public access. The benefits of CHORUS are that it avoids duplication of effort (why should funders, often taxpayers, invest in and build additional infrastructure when much of it already exists?) and requires minimal effort on behalf of researchers (why deposit manuscripts when publishers have these and can open them at the right time?). And it ensures 100% open access compliance. CHORUS is currently monitoring and auditing for public-access status, reuse licenses and archiving arrangements close to

330,000 articles published by members such as AAAS, Elsevier, Taylor and Francis, Wiley and SAGE.²

Best of all, anyone searching for research funded by participating agencies is automatically directed to view the best available version of the paper. The final published article is available if the reader is an entitled user or if the article has been published gold open access; for others, the accepted manuscript is available after the embargo period.

CHORUS has already begun exploring how its system can be used to enable open access efficiently and effectively at the institution level. It is piloting its services with the **University of Florida**, which remains at the forefront of experimenting with innovative solutions for public access, and has attracted international interest, with pilots between the **Japan Science and Technology Agency (JST)** and **Chiba University** in Japan and, more recently between the **Australian Research Council** and **LaTrobe University** in Australia.

This all proves that publishers, institutions and funders can and do work together, and when they do the results are fantastic. One can also point to the UK which, thanks to the collaboration between stakeholders that were part of the **Finch Group**, is one of the leading open access nations: *Monitoring the Transition to Open Access*, published in 2015 on behalf of the Universities UK Open Access Monitoring Group, found that the UK was ahead of global trends in both gold and green open access.³ Stakeholders continue to work together in the UK through the Universities UK Open Access Monitoring Group.

Open Data

Collaboration has yielded excellent results for progressing science in the open data space too, most notably through **The Framework for Scholarly Link Exchange (Scholix)**, which provides a robust, sustainable infrastructure that connects published research with underlying data. Establishing links between data and the published literature is crucial to enhancing data discovery, visibility and utility, enabling articles and data to be read together in context.

A number of publishers have been working closely with data repositories for some time to enable bilateral linking between deposited datasets and articles. **Scholix** makes this process scalable and more efficient, enabling links to be shared with minimal effort and combined with links from other sources to develop a global standard and web of interlinked research datasets and publications. It also makes it easier for researchers to find and access relevant articles and data sets because increasing visibil-

ity and usage acts as an additional incentive for researchers to share their own data. **CrossRef**, **DataCite**, other organizations such as the **Research Data Alliance** and the **International Council for Science World Data System**, and of course publishers, have all collaborated and contributed to the success of this framework.

Open Science

A key driver of open science is improving research performance, and enabling researchers to collaborate more efficiently is central to this. Open access and open data are the most notable headline items associated with open science in many parts of the world, including Brussels, Tokyo and Washington, DC, but it can have other features too, for example collaboration. Publishers and scholarly collaboration networks have been working closely over the last year to give researchers a much clearer understanding of how they can get on with what they love doing — research — and collaborate without having to worry about access and usage rights.

Resources such as *howcanIshareit.com* help researchers understand how and where they can share responsibly and can also provide a springboard for further discussions around why responsible sharing is important for all stakeholders. Of course enabling seamless collaboration is a primary goal, but there are others. For example, when different versions of articles are shared across different platforms, it is hard for a researcher to know which version they are accessing and whether it is the definitive version of record published and maintained by the publisher. This can impact the integrity of the scholarly record and can also lead to (or result from) incorrect version sharing. Publishers worry about incorrect version sharing, as it impacts their ability to keep journals in operation — important for the progress of science.

Similarly, without a system in place to measure usage (and other metrics) of all the different versions on different platforms it is hard for a researcher to know how their work is being used and therefore to demonstrate impact — increasingly important for funding applications. Usage and other metrics also help publishers evolve their services for the research community.

A Look Ahead

Building on the successes of the last year, one likely area of focus is a proposal for Distributed Usage Logging (DUL): a systematized way of measuring article usage across different platforms while respecting privacy. Given how far we have come in enabling scholarly sharing through a distributed network of connections, a challenge is to ensure that sharing can be measured. Again, without a system in place to measure usage of the different article versions

continued on page 25

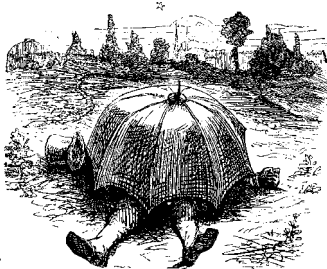


Sleepless Nights Imagining Blueprints and Cranes...

by Maggie Farrell (Dean of Libraries, Clemson University) <maggie4@clemson.edu>

During the day, the bustle of my position as Dean of Libraries keeps me running from meeting to task to email to project development and back to meetings. The juggle of activities can be overwhelming but typically energizing as our library program engages with the university to advance teaching, learning, and research. I am fortunate; the Libraries at **Clemson University** are center stage within campus life and are deeply regarded by the university community for outstanding librarians and staff. It is during the quiet of the night that worries appear as to if we can build the services that contribute to the education of our students, how we might construct a scaffold of research services, how we will build on traditional services to create a new structure that supports data manipulation and visualization, and how we repurpose limited budgets to take on new initiatives. The foundation of all these questions is how we might transform from traditional librarianship to create services, collections, and buildings that support the modern needs of our students and faculty. At night, visions of blueprints, scaffolding, cranes, and tools appear as I wonder how we will accomplish so much with limited time, funding, and positions. The only way to move forward is internal transformation of operations, employee skills, and eliminating good but less critical operations to embrace a new future. How are libraries able to truly evolve to meet current needs of our patrons?

As one contemplates the future of the library, vision is critical. What are the goals? Where does the library want to go in supporting the university or community? How does the library fit within the broader institutional goals and objectives? The first step in building the future is to establish the vision for the library. This will guide the or-



ganization in determining their direction. The supporting objectives will create the blueprint for building library services. Just as with any construction plan, the plan will outline what resources are necessary and for libraries, those resources include funding, staffing, technology, equipment, and facilities. Most construction projects are developed with a team of experts and the same applies to libraries as librarians and library workers need to be engaged in the development of the blueprint. Their expertise is essential to develop realistic objectives in addition to securing employee buy-in to the future of the library. Before starting any project, the vision and plan will be fundamental as it will outline the work that needs to be undertaken.

With any construction or renovation project, one must decide what should be removed in order to make space for an initiative or new service. This takes skill as it is difficult to imagine a different set of services or to eliminate a process or service regardless of its usefulness. Home renovation projects are fascinating as the expert determines that a wall can be removed or a door relocated. Librarians should be assured that it is difficult to see beyond the daily responsibilities to eliminate a process that might open up a new initiative. And it might be a perfectly good process just as the wall in a house might be a perfectly good wall but tearing down a wall may open up space just as eliminating a service may open up staff to different services. External consultants, brainstorming, and seeking constituent input

are some methods that may assist librarians in imaging different services and determining if any existing services or processes are not as vital. The blueprint also helps in such situations as it focuses operations on priority goals and helps librarians to imagine the finished work.

Every construction job requires unique skills and expertise. In building a home, an electrician does not work on the plumbing. The building plan determines what expertise is necessary for the construction. So too in libraries — we need a variety of experts that can support our work and the challenge is likely in the developing areas in which librarians are innovating new services. Currently, libraries are expanding digital collections, developing data management plans, implementing services that visualize data, connecting with patrons through online services, developing new metadata schemes, electronically connecting disparate collections, and delivering information from around the globe to the desktop. Just as our homes have changed from manual furnaces (remember having to light the furnace?!) to home temperatures controlled by your phone, these services do not sound like your dad's library. It is an exciting time to be a librarian but it is also daunting as new services and types of collections either add to existing services or replace services. Catalogers are challenged to describe data including new information such as rights management. Reference librarians connect with patrons virtually and may never guide a student face to face. Libraries are purchasing less print materials but have to manage a complex information environment to connect disparate databases and citations for desktop delivery. Librarians are connecting digital objects to GIS and to other digital collections. To build the library of the future, we need specific skills and expertise to enable our construction.

Unlike construction in which contractors are hired for particular jobs, libraries are already staffed and a library cannot, nor should not, just replace existing personnel with different employees. How does a library transition to new skill sets? What incentives do libraries have to assist librarians and library workers to take on new challenges or to reward outstanding initiatives? What professional development opportunities exist for personnel to develop new skills? Just as it is not easy for a plumber to become an electrician, a cataloger may need support in moving from cataloging print materials to cataloging digital objects and data sets.

Perhaps developing and keeping expertise is one of the most significant challenges facing library management today. Certainly declining budgets are a primary concern but within our budget authority, how do managers motivate and encourage personnel to learn new skills? Going back to the construction blueprint helps. Librarians and library workers who understand the vision and objectives of the plan are more likely to contribute toward its success. The planning process should be inclusive so that personnel are engaged in developing the strategies to advance the libraries. With clear direction and support from within the organization, libraries can make significant strides

continued on page 26

Making Open Access / Open Data ... from page 24

on different platforms, it is also hard for a researcher to know how their work is being used and therefore to demonstrate impact.

Measuring usage is also important for librarians who want to know how their subscribed content is being used. For publishers, the signals we get from how researchers interact with content helps us enhance our platforms and services for the wider research community. These considerations have motivated **CrossRef** and **COUNTER** to look at DUL to enable parties to transmit sensitive data on user content interactions directly to authorised end points. The technical infrastructure needed to support

this is in development now, alongside multiple stakeholder dialogues, to ensure the relevant standards and protocols to make DUL a success are taken into account.

There's a tremendous amount of progress being made in scholarly publishing today as more head down the collaboration road together. Is your institution going along for the ride? 🌧️

Endnotes

1. <https://www.chorusaccess.org/>
2. <https://www.chorusaccess.org/>
3. <https://www.elsevier.com/connect/open-access-policy-propelled-the-uk-ahead-of-global-trends>