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Adaptations in Publishing--Publishers and Librarians Advancing Research

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is re-shaping user expectations, much like what the iPhone and Google's "material design" have done.

With the rise of the megajournal and Open Access, however, we're now recognizing a new issue—journal prestige is a holdover from the past...

The Conundrum of the Megajournal, Open Access, and Prestige

It is through the historical artefact of print that we developed the still current mechanisms of funding, tenure, and other facets of the academic world. In the resource-limited era of print, it made *some* sense to use the journal as a proxy for quality of the individual article. This was further exacerbated by a growing reliance on the Impact Factor in the late 1900s.

Individuals and organizations could afford to purchase, deliver, and find only a limited number of articles in the print and pre-Internet world. Journal names, and the "filter" they represented carried a lot of weight. Those limitations do not exist now as search engines, recommender systems, and boundless access to Open Access literature means we can virtually filter every journal. The only limitation is whether the article is Open Access and the quality of the filtering process.

Attitudes are shifting though — the brand name journals are no longer always the first choice for scientists, as Open Access is now frequently more important. Funders, and even entire countries, are also mandating

the research they fund find a home in Open Access venues.

And the traditional brand-name journals are increasingly failing due to the increasing pressure to always publish what is perceived as the most novel findings. These policies result in more retractions in the "top" journals.

Statistically, it makes sense that the best research and best authors are more and more likely to be found in megajournals and Open Access venues as they account for more than 10% of the literature.

However, hiring, tenure, and grant committees are struggling with these changes. For years they have relied upon just the journal name and, by extension, the Impact Factor to make decisions. The problem isn't so much that good research can't be spotted in Open Access journals, but it seems to be the uncomfortable acknowledgment, due to tradition, that good research isn't just published in "brand name" high impact journals anymore.

This isn't a problem necessarily solved by technology either. Even with the best of altmetrics, existing or yet to be innovated, we will still have this perception problem with Open Access and megajournals. These types of problems require a different set of solutions: research, policy, and education.

Open Access and megajournals have become a valuable asset and look like the future of scholarly communication. However, we recognize that comfortable traditions are being upended with these changes, and so we propose three strategies to smooth this transition:

1. Top-level research is needed to understand these changes more

thoroughly. For example, how are committees handling these changes — what examples of successful transitions are there, how were they implemented, or what else can be learned from them? What are the impacts of making decisions still based on the print era information? And how are organizations and individuals transitioning to fund Open Access?

2. From that research we should be able to start developing new policies at different governance levels to aid in the transition. We need to ensure better decisions are being made at the author and article levels, and that Open Access continues to have a sustainable future.
3. Finally, educational and influencer campaigns are a must if we are going to upend perceptions of where the best research is located and how Open Access can and should affect career progression and decisions. Senior researchers are a powerful influence, and should be encouraged to send their best work to Open Access journals.

In conclusion, the Internet has had a profound impact on scholarly publishing. It causes us to question much of how we decide what to fund, hire, read, and where to publish. There are many unanswered questions that will require a concerted strategy to understand and implement solutions in the Open Access world that we now live in. 🐙

Adaptations in Publishing — Publishers and Librarians Advancing Research

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

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Introduction

Research is improved when researchers are able to connect with other individuals to share results, concepts, theories, data, and disagreements. Researchers thrive in an open environment where theories and results are readily available. Researchers are motivated by scientific discovery, access for their informational needs, and promotion of their own and other's works. Non-researchers also gain expertise and knowledge when they have access to current research and science.

With the advancement of technology, publishers and librarians have an opportunity to create new environments that facilitate sharing and communication during the research process as well as access to final research results, supporting data, reviews, and ongoing work based on the research results. Researchers

themselves are also involved in creating new environments, for example by engaging social media to connect in new ways with new audiences. These new environments enable publishers, librarians, and researchers to work together in new ways to advance research and make it more efficient and impactful. Technology also provides an opportunity for publishers and librarians to create a new relationship in support of mutual goals of expanding research and supporting researchers throughout the research process.

Overview of Ways in which Publishers Support the Research Process

Publishers provide access to, and quality assurance of, content, data, systems, tools and analytics that help universities and researchers define, manage and achieve their desired

research outcomes, and to promote awareness of their impact. Well-designed technology underpins all of these services — and the largest publishers utilize high performance computing clusters to support robust analytics and big data processing. And publishing at its heart is a very social endeavor, relying as it does on human relationships. For example, here at **Elsevier** we work closely with over 7,000 editors, 70,000 editorial board members, 300,000 reviewers, and more than 1,000,000 corresponding authors every year. By working with librarians, more than 12,000,000 researchers at thousands of institutions and companies worldwide have access to our products.

Authors too want to be able to disseminate and share their research, and publishers actively provide tools and services to enable

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this. For example, we find that many authors are especially excited to share news about their publications, and so we provide them with training on how to use social media and also special Share Links to their article which will get anyone who follows the link — for example from **Twitter** — behind our paywall to access the full text. All publishers offer open access publishing options, enable authors to self-archive versions of their subscription articles if they would like to do so, and have access to programs to ensure articles are available in developing countries, to patients, and to members of the public. Many authors are very keen to track the impact of their article, and tools such as our My Research Dashboard can help them do this easily.

It is undeniable that the world of research is rapidly changing. Researchers, research managers, and librarians are acutely aware that they find themselves in an ever more demanding and sometimes highly competitive environment. In order to deal with these challenges and to increase the impact of research on society, academics need technology and tools that enable workflow efficiency, sharing and collaboration. Publishers have a key role to play in helping to address these challenges and increasingly this extends beyond the publication phase to include providing solutions for doing research, managing data, and sharing conclusions and outputs. We help research institutions target their investments, identify funding opportunities, and comply with funder policies.

At an institutional level, we support librarians as they add services to support researchers' data management needs, and implement research and institutional repositories. The results of these collaborations are inspiring a new generation of tools, platforms, pilots and programs designed to address the challenges of the future. This is, for example, the context in which the **Mendeley Data Service** has been developed.

Overview of Ways in which Librarians Support the Research Process

Librarians are increasing their contributions to research and partnering directly with faculty in the grant and research processes. Librarians bring their expertise to bear on the research process — not just by identifying critical research and resources that assist a faculty member in their work, but by being a partner who develops data management plans and advises on intellectual property (IP) rights. This expanded role provides researchers with increased expertise for managing information and dissemination within a dynamic information ecosystem. Librarians are able to contribute to the research process in support of a robust academic research program.

Librarians are developing ways to be fully engaged with the research process and may be critical partners in the formation of research through the dissemination process. Particularly for academic institutions, librarians are working closer with faculty in the grant

application process including the development of data management plans, plagiarism reviews, providing background research, and assisting with future publication options. Librarians are demonstrating their value in the development of data management plans as they are able to understand the technical requirements, storage issues, storage options, security, and intellectual property issues for a set of data. These skills complement the information technology operations within a university and facilitate the decisions that a faculty member must make in the development of their research projects.

Once faculty members have finalized their research, they have a variety of options for publishing their research. There may be funder requirements and a librarian can assist faculty in determining their publishing options, for example, requirements for green or gold open access, and can facilitate the dissemination of outputs via one or more repositories. Many universities support open access through publishing fees or the grant may pay for open access. A librarian can provide guidance to a faculty member for these choices. Librarians can also assist with PR to promote research results. This might include library announcements on recent research, feeding social media with highlights of university research, and honoring faculty publications and research for the university community.

Librarians also support the research process through their work with graduate students and programs. As students set forth their research programs, librarians are excellent guides in teaching the research process and working with students to identify the research ecosystem in which they will operate throughout their academic careers. This process may begin at the undergraduate level as more universities define a research experience at the baccalaureate level. A thorough knowledge of the research process is not just about the final dissertation but encompasses the entire graduate experience.

A growing need for universities is assessment and providing metrics that measure research impact, faculty productivity, and comparisons with peer institutions. Librarians may work in concert with research and academic offices to determine what measurements are appropriate for a particular institution, and the measurements may be used as a way to benchmark a university or department. The academic library may provide a set of tools for this purpose or may develop reporting tools within an institutional repository to provide impact metrics. As social media increases, librarians may provide direction on how social media complements traditional citation impact factors. Librarians are bringing their usage expertise, developed through years of working

within the information environment, to assist the university in understanding how research is being used around the globe.

Librarians have significant expertise that contributes to the research lifecycle and these skills contribute to university needs in advancing their research education and programs. The foundation for these skills is the relationship between librarians and faculty. Librarians know the power of a robust information environment and strongly support the advancement of research through their work with faculty, universities, agencies, and publishers.

Common Values in Support of the Researcher

In examining the lists of activities, there is a significant overlap in activities that publishers and librarians conduct within the research process. It is clear that both are very passionate about supporting researchers. We all are harnessing technology to innovate the ways we provide support. Librarians and publishers are symbiotic, and we support researchers best when we work together. Despite this great synergy, we sometimes focus more on what separates us than what unites us and can allow this to become a barrier and distraction.

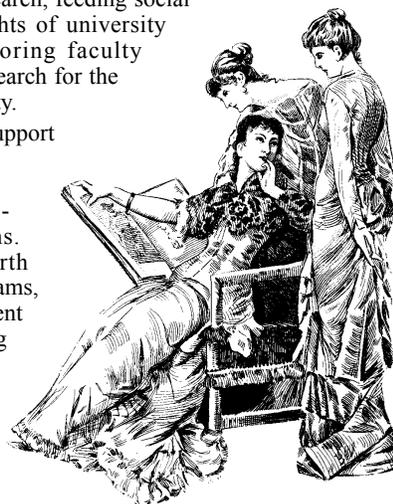
Perhaps chief here can be a concern that the financial models of publishers is the only thing that motivates them, rather than the very real shared concern in supporting the researcher and contributing to the world's knowledge.

While publishers and librarians both support and advance research, there can be disagreement — particularly during renewal negotiations — on prices for access to published research and tools. Price increases above inflation rates have angered many librarians who believe that the publishing industry benefits too much from the uncompensated or limited

compensation of university researchers who edit, review, and promote published materials. Many believe that libraries have borne an unfair burden caused by the pricing policies of highly profitable publishers, and they have not benefited from the efficiency gains of technology. On the flip side, publishers are often highly efficient at controlling costs (and thus their profitability), are also coping with increasing workloads (article submissions grow in double-digit percentages each year), compete with other businesses with similar or higher profit margins, and price their services to reflect their value rather than their costs (as do many service providers). This most sensitive of topics could be discussed in calm and rational ways, but too often is so highly emotive this proves impossible.

Let's return to what unites us! We all agree that publically-funded research should be readily accessible to the taxpaying public. Taxpayers fund the research itself, and reports

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and so forth of that research should be available to them. Members of the public are also interested in accessing publications, but here the publication costs have not been paid by the taxpayer but instead by the publisher. So the ways that public-funded research *articles* are made available need to enable publishers to recover those costs. This happens in a variety of ways. Under the gold open access model publication costs are paid upfront by the author, funder, or institution or by a sponsoring organization. Costs can also be recovered through subscriptions and in these cases a version of the article is made available under the green open access model — through self-archiving in discipline, governmental, or institutional repositories or via publisher services such as **CHORUS**. Taxpayers should have the ability to see the results of their investment, and publishers and librarians need to work on ways that honor the public investment in research.

A growing responsibility for academic libraries is the development of repositories that promote access to university research, including student research. Certainly this is essential as universities promote their impactful research. Digital repositories are excellent methods to collect, promote, and make accessible university research. These repositories also support public accountability as universities provide statistics on faculty productivity and outreach and sometimes connect repository systems to faculty activity reports. Open access and scholarly repositories serve a critical reporting function for many universities. It is therefore unsurprising that most publishers support and provide services for digital repositories.

Most importantly, open systems of sharing results, data, and reviews can foster innovation and collaboration. Technology enables new ways of working across disciplines, universities, and geographical distances to discover new methods and to apply research in diverse applications. Researchers can connect in new ways with other researchers and with users of the research, for instance doctors with remote

patients. Research advances by sharing quality results and is a public good available as widely and easily as possible.

Moving Forward Together

How might librarians and publishers move forward better and together given that we have common interests in supporting the advancement of research and yet very different views on pricing? While difficult at times, librarians and publishers must continue the collaboration conversation in order to move forward, perhaps at times on parallel tracks, but the relationship must be maintained. Differences in opinions should be clearly stated in a professional manner with common goals at the center of conversations. Embargo periods are an example where compromise is possible between librarians and publishers — librarians might wish these to be 0-6 months and publishers 24-36 months — but clearly compromise is possible. This will require attention to data and careful dialog, after all no two journals or subject areas are exactly the same.

Librarians and publishers may jointly develop tools that help researchers work across institutions. Researchers require tools that are simple, discoverable, seamless, intuitive, free, and where any IP restrictions are managed transparently. Librarians well understand how faculty work and their immediate needs, and publishers have a wealth of research about their behaviors and needs too. Working with publishers, librarians can help to develop value-added tools that may complement their institutional repositories. In addition, universities require tools and assessment on faculty research supporting their accountability requirements. Librarians can be a strong contributor in this process working with publishers on university needs in the development of reporting and statistical tools.

Higher education funding is an ongoing challenge throughout most of the world. In the USA, states are challenged with mandated costs for prisons, health care, and K-12 education, resulting in less funding for higher education and restrictions on tuition increases. Librarians feel strongly that publishers should work with librarians on ways to mitigate price increases for information resources — for example granting credits for faculty involvement

in editing and reviewing, liberal policies for interlibrary loan and consortial purchasing, reduced embargo policies, and national purchasing agreements.

Publishers and librarians can further their collaboration through the development of joint standards for tools that support research. **National Information Standards Organization (NISO)** is an example where publishers and librarians are able to have an impact on research through the joint efforts to standardize such activities as researcher identification, object identifiers, metadata elements, and usage statistics. Such forums are effective to continue various conversations that build on common goals in support of the research process.

From a library perspective, it can be unfortunate when a particular publisher will develop a great tool for researchers and that tool does not reach a competing publisher. The research ecosystem benefits from tools that are publisher agnostic. There are some terrific examples — identifiers such as **FundRef** and **ORCID**, services such as **CHORUS**, or cross platform text and data mining services such as those from **CrossRef**. Librarians can be key to the development of these sorts of tools that support a variety of publishing companies: by specifying requirements on what services are needed by researchers or what tools or publications need to be linked to be more effective, and as neutral third parties that can work across publishers to support the joint goal of furthering research.

Conclusion

This is an exciting time as technology enables new ways to communicate, conduct research, connect with a global research community, and disseminate research results, data, and reviews. Librarians and publishers may not always agree, but we can agree that technology and electronic information play a vital role to help society move forward and we can also agree that research is critical for our world. How to fulfill the promise of an open, connected world may be challenging, but this need not deter us from working together, given our shared and ongoing commitment to research. 🌱

Rumors from page 8

that she has been writing **Hot Topics** for two years?) is about culturally responsive teaching. <http://www.against-the-grain.com/2016/02/atg-hot-topics-21916/>

Y'all I know there is a lot to read out there but I want to point out that **Tom Gilson** is doing an unbelievably thorough job of organizing the **ATG NewsChannel** and keeping us informed. More than one person has told me that they can keep up with library news just by reading **Tom's** weekly digest. Check it out!

<http://www.against-the-grain.com/>

We have been getting all sorts of **subscription renewals to ATG** this year. Have you renewed your subscription? Print and online are bundled and are incredibly inexpensive. In the U.S. you are talking ten cents a page! How about that?

Mark Herring has a new book just out — **Social Media and the Good Life: Do They Connect?** (McFarland, 2015, \$28.95) Congratulations, **Mark!** BTW everyone, I know that many of you have written many books that we might not all know about. That's why soon — very soon — I hope we will have a section on the **ATG NewsChannel** called **Books From Our Crowd!** Coming soon to a computer, laptop, iPhone, iPad, Android, etc. near you!

Speaking of a lot to read, perhaps storage won't be an issue in the future if we live long enough? **Here Is a link — Eternal 5D data storage could record the history of humankind.** "Using nanostructured glass, scientists from the **University [of Southampton]'s Optoelectronics Research Centre (ORC)** have developed the recording and retrieval processes of five dimensional (5D) digital data by femtosecond laser writing. The storage allows unprecedented properties including 360 TB/disc data capacity, thermal stability up to 1,000°C and virtually unlimited lifetime at room temperature (13.8 billion years at 190°C) opening a new era of eternal data archiving. http://www.eurekarta.org/pub_releases/2016-02/uos-e5d021516.php

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