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THE PAST, PRESENT & FUTURE OF OPEN ACCESS

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Introduction

Through my doctoral research which recently culminated in the article-based thesis titled "Measuring Open Access - Studies of Web-enabled Innovation in Scientific Journal Publishing" I have been observing the development of Open Access (OA) journal publishing since 2009, particularly focusing on article-level uptake on both the publisher and author-side OA mechanisms. The last five years has been a period of very rapid transformation for the journal publishing space, which has evolved to accommodate the changing market demand for OA dissemination. Having had a front seat in observing the developments from different angles this article documents some key conclusions regarding the past, present, and future of OA in the context of journal publications.

The broad spectrum of OA

Due to the fast pace at which change has happened in the journal publishing space, even the short span of five years has challenged the implications of elementary definitions. When I first started by research into OA I had a very clear (i.e. naïve) picture of what types of OA mechanisms are available and what they are called, much due to the simple concepts of "gold OA" and "green OA" which have stuck and are still core parts of the vocabulary around OA. However, the broadening spectrum of OA and the different varieties of it has increasingly challenged the use of these terms.

With delayed OA (embargoed free access to subscription content), hybrid OA (individual articles in subscription journals made OA through author payment), promotional OA (limited time sporadic access to subscription journal issues), and the ongoing debates about licensing nuances of OA content, the universal label of "gold OA" is becoming increasingly hard to stretch across all journal-mediated OA.

Likewise, "Green OA" has basically become used a catchall definition to any copies not provided directly by journals and can be made available anywhere, at anytime, in any potential version of the article manuscript. On the high end of the quality scale of green OA there are clearly labeled accepted versions of article manuscripts made available through institutional or subject repositories, on the low end are unlabeled manuscript files found on seemingly random websites. Straightening out the vocabulary and definitions of OA is something that needs to be done, as it is the existing dualism, despite its attractive simplicity, is not enough to properly acknowledge the important differences there is across the OA spectrum.

OA provided by journals

Through longitudinal bibliometric studies on publisher-side developments it has become clear that OA journal publishing is no longer a marginal enthusiast activity, but instead a channel to disseminate high-impact research as well as a prospering commercial business for journal publishers who successfully facilitate OA publishing. While the decade of the 1990s was a time when journals, authors, and readers were still figuring out the circumstances and possibilities that free reader access to journal articles entailed, from around 2005 and onwards there has been an aggressive growth in the number of articles published as OA directly through journals – particularly when it comes to articles published by author-side payment, so called author processing charges (APC) (Laakso & Björk, 2012). The same study also suggested that OA journal publishing had grown to account for a double-digit share of all article content indexed in the Scopus bibliographic database (11%) for content published in 2011. OA is a major transition from the dissemination models based on paid access, either through subscriptions or pay-per-view, but gradually the tides

seem to be changing. Influential research funders as well as authors are becoming more comfortable with the notion of publication services necessitating payment, journal publishing on a larger scale is after all not something that can be done for free.

OA provided by authors

On the author-side it has been interesting to compare what degree authors provide OA to articles published in subscription-based journals, and to what degree that coverage could be extended within the limitations of existing publisher policies that authors have to agree to in order to get their articles published. While actual uptake is hard to pinpoint exactly due to the unstructured nature of author-provided OA, a figure that we arrived in 2010 was 12% of all annual articles (Björk et al 2013). My recent study into the self-archiving policies of the 100 largest journal publishers by article output suggested that over 80% of all articles published in 2010 could have been uploaded to an institutional or subject repository as an accepted manuscript after 12 months of publication (Laakso 2014). So even accounting for a modest increase in uptake for self-archiving among authors since the uptake study was conducted there is still a substantial gap in unrealized potential for providing OA to content published in subscription journals. Authors should become much more active in self-archiving their works, but making that happen is easier said than done.

In an era where institutional repositories have largely become the norm for at least academic institutions the issue for the low uptake for self-archiving seems to lie elsewhere than lacking technical infrastructure. What appears to be the largest hurdle for increasing the rate of self-archiving seems to be awareness and attitude, both of which can be influenced but ultimately not controlled. Funder and institutional mandates are potentially effective authorative ways of getting authors to provide OA to their publications. However, additional methods could be to just provide visible feedback-looping to facilitate OA-enabling behavior among authors. Something which had a little to no presence five years ago were so-called academic social networks like ResearchGate and Academia.edu, services which have now to a degree replaced author homepages for providing access to one's publications. In addition to providing basic social networking features these services provide metrics to monitor article downloads, something which could be argued to motivate continued self-archiving. Popular OA journals have also been providing similar metrics for all published articles as one way of showcasing the impact their articles get, highlighting the competitive advantage of OA. A similar approach should also be adopted by developers and administrators of institutional repositories, giving authors feedback on article usage could help tackle the awareness & attitude dilemma. The snowballing effect of researchers experiencing the benefits of OA first-hand when it comes to accessing publications of others could facilitate changed behavior when it comes to making the conscious decision to self-archive one's own research or even publish in an OA journal.

OA in the larger context of open science

During the last two decades OA has emerged through a mix of ideology, behavior, technology, policy, and business. These factors have aligned and fueled the rapid growth of OA uptake, both with regards to journal publishing and self-archiving. However, OA is only a component of the larger push towards the notion of 'open science'. OA to publications has been a low hanging fruit in the sense that to a large extent OA requires low-level technical sophistication in its most basic form (a PDF on the web) and is enabled simply by removing access barriers like paywalls. Enabling free access to e.g. research data requires both resolving technical and intellectual property aspects as well as getting the practice socially integrated into the mindsets of researchers like OA has been doing for the last 20 years. Interesting developments are currently in progress with relation to open science both in Finland and internationally, concerted efforts which aim to take the necessary steps forward to take openness in science beyond just OA to research publications (https://rd-alliance.org; http://avointiede.fi). Data standardisation, ethics, preservation, and citation are just some of the challenges that need to be resolved in order for free access to it to be of meaningful value, challenges which OA did not have to struggle with to the same degree.

OA has come a long way and has really matured in the last 20 years. OA will without a doubt continue to be an increasingly important component in the field of academic research as we move towards more transparent research processes with less redundancy.

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