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POINT OF VIEW

Predatory publishing is just one of the consequences of gold open access

Introduction

I have been closely following and participating in the open-access (OA) movement since 2008. In that year, when the gold OA model first began to be implemented on a large scale, I noticed the appearance of several new publishers that lacked transparency and used deceptive websites to attract manuscript submissions and the accompanying author fees. Initially, I printed out copies of their web pages and placed them in a blue folder. In 2009, I published a review of the publisher Bentham Open in the library review journal the *Charleston Advisor*. Writing a second review in the same journal in 2010, I coined the term ‘predatory publisher’ and changed the focus of my informal blog, called *Metadata*, to predatory publishing. I published my first list of predatory publishers on my old blog in 2010, but it drew almost no attention. In late 2011, gathering together the expanding materials in my blue folder, I published a second list of predatory publishers that garnered much attention. Later in early 2012 I moved my blog to an improved platform and changed its name to *Scholarly Open Access*. Throughout 2012, I continued tracking, listing, and writing about the new publishers that I added to my list. The 2010 list included 18 publishers, the 2011 list had 23, and the 2013 list had over 225. Also beginning in early 2012, I started keeping a second list of independent journals that do not publish under the aegis of any publisher, and that list now contains over 150 titles.

In this paper, I relate the new and important things that I have learned about scholarly publishing, OA, and

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This article examines the ways the gold open-access model is negatively affecting scholarly communication.

the communication of science. I argue that the gold OA model is a failure, that the debate surrounding OA has become contentious and divisive, and that the future of scholarly publishing is in peril. Never before has the scholarly publishing industry attracted so much attention from scholars, researchers, and academics. The medium of scholarship has now become the intense focus of scholarship itself, and many have a stake in its outcome.

A brief history of open access

The story of OA publishing begins with the advent of the Internet and soon after with librarians alerting the academic community to the ever-increasing subscription prices of scholarly journals. At that time, the term ‘serials crisis’ was coined. Libraries began to cancel journal subscriptions, yet at the same time the desktop publishing revolution helped increase the number of journals being published by medium- and small-sized organizations. Also, the amount of scholarship being published

increased dramatically worldwide, creating the need and the markets for new journals and publishers to make it all available.

Reacting to the criticism and to the journal cancellations, the scholarly publishing industry took action. They granted libraries new economies of scale, one in the form of journal bundling, which increased the number of titles that individual academic libraries were able to afford and make available to their users. The second economy of scale was to grant deep discounts to library consortia. Repurposing existing library cooperative ventures involving traditional library functions such as cataloging, libraries organized regional and statewide consortia – groups of libraries that function basically as buyers’ cooperatives. Publishers competed with each other for libraries’ business, granting deep discounts that essentially resolved the serials crisis by 2004.

One other aspect of the serials crisis was the impact of the higher journal subscription prices on libraries in developing countries, but pub-

lishers also solved this problem. The Research4Life program grants free or very low cost access to subscription e-journals in developing countries. Many fail to acknowledge the contributions of the Research4Life program in the developing world. In some developing countries, this program brings about a greater access to contemporary journal literature than libraries in developed countries can provide. Many are ignorant of these programs and fatuously malign established publishers for their supposed indifference.

But despite the resolution of the serials crisis, the seeds of revolution had already been planted. The truth of the crisis' resolution was incommensurate to those fervently advocating OA. Moreover, the strong leftist and anti-corporatist propensity of the academy led to an identification of its arch-enemy: the large, for-profit scholarly publishers. The OA advocates even named their poster child of corporate malevolence, publisher Reed Elsevier, long respected as a high-quality scholarly publisher whose portfolio includes many of world's top academic journals. The zealots have symbolically burned Elsevier in effigy for so many years now that the protests have become hackneyed.

Meanwhile, faculty salaries increased dramatically during this same period. Many of the same faculty members across North America who were protesting higher journal subscription costs concurrently saw giant increases in their salaries. Increasing retirements meant more inter-university competition for faculty across the United States, a competition that many faculty were happy to exploit.

Later many would realize that one of the chief beneficiaries of the anti-corporatist OA movement would be corporations themselves. Countless companies and private organizations with research and development

departments contributed to lowering the overall cost of academic publishing by subscribing to scholarly publications. Now these corporations are benefiting from OA by not paying the subscription costs they used to pay, costs that essentially subsidized the subscription costs paid by libraries to support scholarly publishing. OA decreases the pool of money that publishers (traditional or author-pays) can dedicate to meeting the costs of high-quality publishing.

Flipping the model from print to online

In the early 2000s, scholarly publishers began to flip their publishing models from print to online. Many, if not most, now publish exclusively online. This change involved a massive investment on the part of publishers. One of the amazing benefits of this change was the digitization of journal backfiles. Like never before, scholars could search entire runs of journals including, in many cases, issues from as far back as the 19th century. Publishers also created and implemented new value-added features to facilitate research such as automatic reference linking. They invested in digital preservation, safeguarding their products against loss and format change. Traditional toll-access publishers focused most of their innovations on the consumers of their products, the readers.

The rise and fall of gold OA

At the same time, the gold OA model began to proliferate and, along with this, the focus changed. For many journals, authors became publishers' customers, leaving readers as secondary players in the new OA equation. The fatal flaw of the gold OA model is the built-in conflict of interest: the more papers a journal accepts, the more money it makes. There is no way around this conflict, and it is this

that has created the whole problem of predatory publishers.

The weaknesses of the gold OA model are many. Some are now even sarcastically calling it 'pay to say'. The model will limit contributions to those with access to funds to support article processing charges (APCs). While it is true that some publishers offer waivers or discounts on the fees levied on authors, these are in reality the exception, I think.

Gold OA threatens the existence of scholarly societies, chiefly those in the arts and humanities. Largely funded by library subscriptions to their journals, scholarly societies are facing a no-win situation with gold OA. In many fields, authors have never paid APCs and are uncomfortable with the idea of paying them. Moreover, even with author charges, many societies would still not make enough money to support their publishing programs and would lose the subsidies that these programs now provide to societies' overall operating costs. Here, the traditional publishing system operated as a kind of commonwealth. Many academic libraries and other organisations paid reasonable subscription costs to society publishers, and these contributions spread out the costs and supported the important work of the learned societies. Gold OA threatens to destroy this successful system and leaves arts and humanities societies with few positive choices as to how to operate their publishing programs.

A second very negative impact of the advent of gold OA publishing is the alarming increase in author misconduct. Ironically, OA makes author misconduct easier to find and document. Misconduct that involves piracy, such as plagiarism, can easily be confirmed by searching for a plagiarized passage on the Internet. But there are many additional forms of author misconduct that seem to be appearing more frequently; these include self-plagiarism, image or data

manipulation, ghost authorship, honorary authorship, duplicate submission, and salami slicing, which refers to splitting up a coherent article and submitting it as more than a single work.

A 1983 article by Thomas F. Gieryn entitled 'Boundary work and the demarcation of science from non-science: strains and interests in professional ideologies of scientists' and published in the *American Sociological Review* bears relevance today in the context of predatory publishers.¹ It's difficult to describe the peer-review practices of many questionable publishers because they hide it, lie about it, or don't do it, even though they say they do.

Gieryn describes boundary work as 'an ideological style found in scientists' attempts to create a public image for science by contrasting it favorably to non-scientific intellectual or technical activities'.¹ It is important for scientists to mark clearly the border between science and non-science; this is called demarcation. Peer review is the mechanism through which scientists define and enforce this boundary. Because so many predatory publishers and journals are negligent in their management of peer review (or do not carry it out at all despite claiming to), we can conclude that the boundary between science and non-science is increasingly becoming vague, violated, and unpatrolled.

Author Nicoli Nattrass has built on Gieryn's work, applying it to the case of AIDS denialism. A small and disruptive social movement from the mid-1980s to the early 1990s spread the falsehood that HIV is harmless and that anti-retroviral drugs were the disease's true cause. In her 2012 book *The AIDS Conspiracy: Science Fights Back*,² Nattrass details how scientists defended the evidence they had found that linked HIV to AIDS and how they negated the opposing, bogus theories. Chapter 7 in her book

is entitled 'Defending the Imprimatur of Science: Duesberg and the *Medical Hypotheses* Saga'. Probably one of the most eloquent defenses of peer review ever, the chapter details how the peer-review process of the Elsevier journal *Medical Hypotheses* had become corrupted, allowing AIDS denialist Peter Duesberg to get an unscientific paper published in the journal – a paper that scientists successfully rose to expose as unscientific. There are many similar cases of bogus science among contemporary journals, especially the predatory ones, but few are rising to defend science's boundaries. Is it too late?

Pseudoscience is the same thing as non-science, and it is growing rapidly. *Wikipedia* has an informative article on the topic and gives examples including rebirthing therapy, cold fusion, reiki, and ayurvedic medicine. Indeed, there is a category in *Wikipedia* that collocates articles on different types of pseudoscience. These include articles covering well-known bogus sciences such as astrology and alternative medicine, and they also include corruptions of traditional fields, such as pseudohistory, pseudophysics, and pseudoarchaeology. The role of peer review is to protect science from these false disciplines, to grant a seal of approval to work that meets the standards of science. Because research is cumulative, boundary work and honest peer review are essential to protect science from the influence of the false sciences.

The economic downturn that started in 2008 has ultimately resulted in an intense pressure on scholars to publish. State-supported institutions now demand increased accountability from the researchers they support. They want to demonstrate a return on investment. This need to document accountability feeds right into the mouths of the predatory OA scholarly publishers. The need has fueled the predatory publish-

ing market, which is snowballing in size as lazy authors repurpose their or others' earlier works into quick, new journal articles. It is normally a positive development when markets emerge that fill consumers' needs. But in this case many of the consumers (authors) have malevolent intentions. Many are not responding ethically to their institutions' demands for more accountability. Publishers want more papers because it means more income for them. These are the main factors that have increased author misconduct. The gold OA model is an unsustainable failure.

One result of this situation has been the publication of millions of useless articles that create an awful lot of academic noise. The excessive number of scholarly articles being published makes searching more difficult (one has more junk to weed out), and it makes keeping up with one's field more difficult. On the other hand, it may spark the development of recommender systems, such as F1000, that do this work for scholars, adding value to published works by sorting out the unworthy ones.

Beall's List of Predatory Publishers

Earlier, I gave a brief history of the blog that includes the two lists I maintain. I now maintain the two lists (one of publishers, one of independent journals) on a WordPress blog platform. The website address is <http://scholarlyoa.com>. I also do regular blogging on the website, usually adding about two blog posts per week. My goals in maintaining the lists are to help people by letting them know about the counterfeit publishers and to critically analyze various aspects of scholarly OA publishing.

I have also published on my blog a list of the criteria to be used when judging questionable journals.³

Some have suggested that keeping a list of quality publishers might be a

better approach than keeping a list of the bad ones. There are already metrics in place to measure quality journals, including the impact factor. A weakness of the impact factor is that it takes a long time (often several years or more) for an impact factor to be calculated. Other 'positive' measures would also probably take time to calculate as well. On the other hand, negative components of publishers and journals, such as lacking an editorial board, spamming, and plagiarism, can be observed and recorded right away and often do not need to be measured over time. Hence a black list is easier to compile and maintain than a white list and by its nature contains more updated information than a white list could.

I often hear criticisms of my lists. Some believe that the predatory publishing problem is really a small problem, and my highlighting the problem is making it appear bigger than it really is. Others claim that we really need to give these predatory publishers a larger opportunity to succeed, that it is not fair to attack people from poor countries. I agree with this except when publishers use outright deception or significant lack of transparency in their operations. Many have advised me that some startup publishers will eventually be successful and become respected in the scholarly community, even if they make honest mistakes early on. I agree and make every effort to exclude from my list operations that appear to be well-intentioned and honest startups.

In late 2012, a small group of predatory publishers colluded in a campaign to discredit me and my work. Using email spoofing, they sent out emails to publishers that appeared to be from me. The emails offered a re-evaluation of their inclusion on my lists in exchange for \$5,000. They sent the spoofed email to publishers on my list, and they also created a bunch of fake blog

sites that contained the copy of the email. Some of the publishers on my lists are true criminals, so it is natural that they respond in a criminal manner to my reviews of their publishing operations.

The ongoing debate about OA

There are many who are content with the traditional system of scholarly publishing, many who have no problem with signing over their copyright to someone who can manage it for them better than they can, and many who really do not want their work to be accessible by the ever-increasing number of lonely pseudo-scientists on the Internet. Yes, it is wonderful that struggling scientists in the Global South now have increased access to scholarship, but how will they share what they learn when they have to pay to publish their research findings?

I think the debate about licensing for OA works will continue. The standard for OA is the Creative Commons attribution 3.0 license, a broad waiving of rights that allows commercial and derivative works to be made of one's scholarship. Many emerging companies, especially European ones, are developing new ways of aggregating and reselling this free content, and they are among the most strident in defending and promoting the broad CC BY license. Many in North America are wary of signing away so many rights, especially commercial rights. They see OA chiefly as 'ocular,' which means that access is limited to viewing OA works on the Internet, but not much more. Everyone is trying to predict the future of scholarship and OA. We are all anxious for the OA future to arrive so we will know how to manage and license it.

The online conversation surrounding OA is contentious. In social media, email lists, blogs, and websites, the OA movement mani-

fest itself daily, broadcasting piquant debates, personal attacks, and a diversity of opinion on how scholarly publishing will and should proceed. There is a lot at stake, and each stakeholder wants the future of scholarly communication to suit his or her best interests. Representatives of the traditional, toll-access publishers mostly avoid the debate, choosing instead to monitor the sharp linguistic volleys thrown around the Internet. Representatives of mega-journals, such as *PLoS one*, tout their products effectively using the Internet, perhaps leading many to believe the journal is more successful than it really is. Predatory publishers (and some other publishers) use spam email to solicit articles (and their accompanying fees) and editorial board memberships. Perhaps the strongest debate occurs between those preferring either the green route or the gold route to OA. I don't see the green OA model as a solution to the problems of gold. It relies on mandates that are not being enacted or followed, and I do not believe that imposing OA mandates on researchers is proper because it takes away their freedom to publish research in the way they see fit.

We have seen several boycotts targeting Reed Elsevier, and for the organizers of these boycotts, they are an effective method for getting praise from colleagues and for being seen as heroic, but the boycotts have all failed. The boycotts' popularity is ephemeral, and the enthusiasm for them soon wanes. This happens mostly because OA is really two things: a model of scholarly publishing, and a social movement. As a social movement, however, it is contentious and internecine. Scholarly publishing will continue to wander down an uncertain and unstable path, and only the fullness of time will bring about stability to the industry.

Libraries and librarians in the OA movement

Even though librarians are credited with having alerted academia to the serials crisis, they have been far from stellar in collaborating to resolve it. Many have anti-corporatist leanings, bemoaning any company's attempt at making a fair profit from scholarly publishing. Their collectivist and anti-capitalist attitudes have strained relations among the producers and consumers of scholarly content. Many librarians in the United States and Canada are unionized, demanding high salaries, benefits, and favorable perks for themselves while simultaneously wailing over the 'greed' of the scholarly publishers.

Moreover, constrained by political correctness, many academic librarians in the West fear pointing out the corrupt practices of the predatory publishers based in developing countries, for fear of being pegged a racist. Many thought that defeating the corporate publishers was the final solution to the serials crisis, but the transition to gold OA has only created a new crisis, in the form of predatory publishers and prohibitively high author fees for scientific authors. Some react to predatory publishers by minimizing the problems they create, either claiming that the predatory publishers are few, or that no serious scholar would submit to them anyway.

Librarians are also cataloging the journals published by predatory publishers and including them in their online catalogs, a practice that essentially grants a library's seal of approval to the journal. Including predatory journals in library online catalogs is negligent, because it essentially promotes the journal to the library's patrons. As librarians' roles change from custodians of print collections to facilitators of online scholarship, they need to take quality

into account. Just because a resource is OA doesn't mean that it is a quality resource. Librarians must be the first to develop skills in what we might call scholarly publishing literacy, and then they must share these skills with their patrons. Thus, librarians need to add value to online information by helping validate it, and they must not blindly promote OA works just because they fulfill a certain collectivist ideology. Librarians have a tendency to be neophiliacs; they adopt a new technology or a new system merely because it is new. Librarians must be more discerning and must exclude political ideology from their library management operations. Many librarians are enthusiastic about the still unproven Alt-Metrics just because it is new. Librarians' analyses of novel solutions tend to be gushing rather than critical.

Instead of zealously promoting a particular method of scholarly communication, librarians should ask themselves: what is the best model for the future of scholarly communication? The gold OA model is demonstrating many significant weaknesses and drawbacks, so librarians and others need to re-examine the model with a healthy skepticism instead of doubling down and promoting it as the final solution.

Moving forward

Predatory publishers are poisoning gold OA, and they threaten to harm all of scholarly communication. The gold OA model is failing, and the valuable validation feature that the traditional publishing model provided is being lost. This corruption of scholarly publishing is making the future of all scholarly communication doubtful as to its quality and whether or not it really effectively communicates valid science.

The OA movement needs to

decide on licensing. This is an especially contentious area. Many new businesses will accomplish great things given the wide availability of scientific research. They will be able to text-mine and repurpose the scientific corpus, creating new jobs and new scientific findings.

There is a new type of scientific literacy, and it is called scientific publishing literacy. It means that scientists must be able judge publishers and conferences and make decisions about which are ethical and which are not. It will be an essential skill for all scientists to acquire if they want to be effective as researchers.

I hope to continue to list and research predatory publishers and predatory independent journals. Their number is expanding greatly. I think that many in developing countries have discovered scholarly publishing as an easy way to make money, and it has the benefit of low startup costs. There are millions of researchers around the world desperate to publish, and the predatory publishers are eager to have them as customers.

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