Democratizing Academic Journals

Technology, Services, and Open Access
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Open access for the reader doesn’t guarantee cheaper access fees for the academy. It’s time for a 21st century upending of the exorbitantly expensive corporate journal publishing system in order to give academics freedom to choose where to publish their articles and how much it should cost.

Today, five corporate publishers control a majority market share of academic journals. Consequently, they control production, distribution, impact measures, and, most importantly, pricing. For years, the academic community has been trying to work with publishers to lower skyrocketing journal costs. However, the centralization of journals into fewer hands has created substantial power differentials between academic institutions and corporate publishers in journal price negotiations. Given the opposing incentives of academic institutions and corporate publishers - academia seeks to make research accessible while publishers seek profit - attempting to cut costs has proven a virtual zero-sum game.

This white paper delves into:

• The past and present state of journal publishing
• Current alternatives to the corporate publisher model
• Steps to realize sustainable, open access-friendly journal models of the future

This paper argues democratization of journal publishing is the key to lowering journal production costs and facilitating OA. Members of the academic community, either at established not-for-profit organizations or through informal groups of editors and advocates, must break up the corporate publisher conglomerate by taking control of journals and developing funding, access, and distribution models that work for their disciplines. This paper explores how widespread adoption of publishing services rather than carte blanche outsourcing of publishing will allow journals to affordably and sustainably publish on their own.

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• Björn Brembs
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The rise of corporate journals and its impacts

The extent of corporate control over the academic journal industry is striking - especially given that the majority of authors are unpaid, and that significant research funding comes from government and nonprofit sources. As of 2013, corporate publishers account for more than 50% of all published articles, a dramatic increase since 1973 when they accounted for ~20% of all articles (Larivière, Haustein & Mongeon). How did this situation arise, and what are the implications?

Through the 1960s, nonprofit scholarly societies and university presses published the majority of academic journals (Bergstrom, Courant, McAfee, and Williams). This began to change in the 1970s when many societies started partnering with corporate publishers, giving away the rights to publish society journals in exchange for a portion of sales revenue (Steinberg). Ironically, it was the rise of the internet, which is now championed as a universal publishing outlet, that accelerated instances of societies outsourcing journal production because they lacked the resources to effectively digitize their content. OA advocate Ulrich Herb explains that in these agreements with publishers, societies often forewent all rights to their titles - and therefore relinquished power over pricing and distribution decisions (Questions Surrounding Affordable OA).

In the mid 1990s, corporate publishers changed the way journals were priced when they initiated the Big Deal, in which bundles of subscriptions are sold for a flat fee. Bundles initially provided libraries access to a wider selection of content at a discount. However, Bergstrom et al. argue that the Big Deal has negatively impacted institutional purchasing power due to the prevalence of non-disclosure agreements that conceal bundle prices, thereby allowing for institution-specific variations (Bergstrom et al.).

Corporate publishers have been raising bundle prices by 5-7% a year, outpacing library budgets (Bergstrom et al.). At the same time, the cost of subscriptions to key titles continues to soar. In a 2007 study, Dewatripont et al. found the average list price of for-profit journals to be four times higher than that of not-for-profit journals (Bergstrom et al.).

Today, educational institutions are running out of funding to pay for journal subscriptions and are desperate to coerce publishers to lower their prices - however, the deck is stacked in favor of corporate publishers.

Democratizing Academic Journals
In addition to owning a majority of journals, corporate publishers have large concentrations of titles with high journal impact factors (JIF), which researchers prefer to publish in due to perceived prestige (Larivière et al.). The fact that scholars can only publish an article in one journal, a consequence of the Ingelfinger Law (Larivière et al.), and that corporate publishers have high concentrations of the most desirable journals, puts libraries at a significant disadvantage at the negotiating table. Corporate publishers can keep making libraries pay more with the threat of losing access to research only available in their journals.

Open access brings advances but only half a solution

Concern over losing access to research has led many scholars to support making all articles open access (OA), or free to read online. Among early OA advocates was Stevan Harnad, who in 1994 published the “Subversive Proposal” calling researchers to self-archive their articles’ either pre- or post-publication versions (Okerson and O’Donnell). The concept of self-archiving was later termed “Green OA.” Alongside it the concept of “Gold OA” - making articles immediately free to read online - was born (Morris 19).

However, while the growing OA movement addresses the issue of scholars retaining access to research, it does not directly solve the problem of expensive publishing operations extracting funds from the academic community. In the Green OA model, costly subscriptions will remain in place unless articles are universally archived, allowing libraries to cancel subscriptions. The Gold OA model also leaves room for publishers to continue siphoning institutional budgets.

According to OA advocate Björn Brembs, pursuing Gold OA within the corporate publishing model could make matters worse. He argues publishers will replace subscription revenues with high APCs and continue using authors’ needs to publish in high impact titles to raise costs (Brembs). This indeed appears to be the case. According to a report by Jisc, “[t]he average APC has increased by 6% over the past two years, a rise well above the cost of inflation” (Shamash). Some publishers have also initiated “hybrid” OA models, in which journals have both APC-funded OA articles and paywalled articles. Hybrid OA has raised concerns of “double dipping” given its two-fold revenue stream (Kingsley).
Do journal prices accurately reflect the cost of production?

Concerns over rising journal prices have led many to ask: do journal prices fairly reflect the cost of production? With the rise of APCs, the question becomes more stark: if we pay $5,000 to make an article OA, how much of that goes towards costs to produce the article and how much is corporate profit? This has proven a difficult question to answer due to lack of transparency around publisher revenue allocation. However, some reports offer clues, including the 2015 STM report that states, "the average 2010 cost of publishing an article in a subscription-based journal with print and electronic editions was estimated by CEPA to be around £3095" (Ware and Mabe 10). Publisher profit margins are estimated to be between 20 and 30% (Van Noorden).

There is debate as to whether the value corporate publishers add to journals justifies their high profit margins. Publishers argue their revenues are needed to pay for a variety of services, such as maintaining infrastructure to manage submissions (Anderson). It’s also been argued by some that journal costs aren’t rising arbitrarily, but rather because many journals have increased the number of articles they publish so that the cost per-article within a journal bundle might actually be declining (Gantz).

However, others have brought into question the extent to which corporate publishers add significant value to the pre-publication article to justify their cost. In a review of Reed Elsevier, one Deutsche bank analyst stated that if publishing were as "costly [...] as the publishers protest that it is, 40% margins wouldn’t be available” (McGuigan and Russell).

Scholars have echoed such concerns, including Timothy Gowers, who inspired The Cost of Knowledge boycott of Elsevier. Gowers notes that the majority of core journal functions, including peer reviewing and editing, are voluntarily performed by academics. He argues publishers are profiting off the backs of academics while providing little additional value. “[I]t’s almost as though the publisher does nothing that we need [...],” said Gowers (Jha).

A factor in corporate publisher expense projections that many are flagging as unnecessary is printing. PLoS Co-Founder Michael Eisen argues publishers have chosen to retain print-based publishing models to increase profit, despite opportunities to publish more economically online (Eisen). Such arguments have been bolstered by examples of online-only publishers, including Ubiquity Press and PeerJ, which estimate their per-article costs to be in the low hundreds of dollars (Van Noorden). The fact that online-only publishers have significantly lower per-article costs suggests corporate publishers are not operating as efficiently as possible.
Breaking the cycle to expand access to journals and lower costs

In the current publishing system, a sudden decrease in the price of journals is not likely. So long as corporate publishers have a majority market share of published research, including large concentrations of high-impact titles, the academic community will lack the ability to effectively negotiate down prices. Consequently, breaking up the corporate publisher conglomerate is a necessary step for progress to be made towards sustainable OA publishing in the future. The next section explores current efforts to move journal control from corporate publishers and lower costs.

Alternatives to the corporate publishing model

In response to the pricing stalemate between academic institutions and corporate publishers, different approaches have been introduced to usurp corporate publishers and force down journal prices. Members of the academic community have proposed structural or system-level changes to the corporate publishing model as well as alternative OA publishing outlets.

Structural solutions to the serials crisis

A leading structural solution to affordably make journals OA, which is staunchly advocated for by Stevan Harnad, is the universal Green OA model. In this model, if all scholars archived their research, libraries would be able to cancel journal subscriptions. Consequently, in order to survive, publishers would be forced to downsize their production operations and instead focus on peer review services, letting archived articles stand as the “published” versions. Green OA proponents argue this would result in a forced, substantial reduction in publishing costs (Universal Green OA to Solve Serials Crisis).

Universal Green OA would likely force down article prices; however, there are challenges to this model. The approach will require significant time to reach critical mass - time the academic community may not have. Roxanne Missingham, Chief of Scholarly Information Services at Australian National University and Deputy Chair of the Australian OA Strategy Group, spoke to the urgency of the problem: her biggest concern with the transition to OA is “assumptions that there is infinite additional resourcing available” to pay for new OA models and a slow wean off of subscriptions “simply means that fewer scholars will have access to the resources” (No 'Winner Model' for Open Access).

To address the problem of paying for subscriptions and OA publishing at the same time, it’s been argued that libraries should cancel journal subscriptions in order to hit corporate publishers in the pocketbook and strong arm price reductions. However, libraries face pressure from the research community to maintain subscriptions to key titles and are therefore in a compromising situation. If libraries cancel subscriptions they risk taking away scholars’ access to research, but if they maintain key subscriptions they limit institutional OA publishing budgets. Canceling subscriptions also does not address high APCs, which, per Brembs’ argument, corporate publishers could keep inflating.

Along with Green OA uptake and journal subscription cancellations, tandem efforts to decentralize journals from corporate publishers are needed in order to upend corporate control of journals before library budgets are strained too far. So long as corporate publishers control the majority of key journals, a gaping hole is left for corporate publishers to shape the future of Gold OA funding to their profit advantage and to restrict Green OA, a common practice in the humanities and social sciences (Peet).
New OA Publishing Models

In order to directly take control of journals away from corporate publishers, members of the academic community are developing new OA publishing models. Academic institutions and nonprofit organizations have introduced large-scale, affordable publishing programs funded via institutional subsidies or below-market APCs. Examples include:

<table>
<thead>
<tr>
<th>Example Name</th>
<th>Model overview</th>
<th>Positive reception</th>
<th>Critiques or concerns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Library of the Humanities (OLH)</td>
<td>Library partnership subsidy model: libraries collectively fund journal publication.</td>
<td>Positive response from library community and humanities and social sciences scholars with growing support.</td>
<td>Still relies on outsourcing production to a publisher. The model also requires wide-scale library uptake to grow.</td>
</tr>
<tr>
<td>Collabra</td>
<td>Combination APC and subsidy-funded OA psychology journal, founded by University of California Press (UCP). The journal redistributes some APC revenue to a research community subsidy fund. UCP plans to launch additional titles under the Collabra brand.</td>
<td>Excitement among members of the academic community, particularly around the research community fund.</td>
<td>• Has APC of $875 - higher than some other OA journals, though lower than most corporate publishers • Still relies on outsourcing production to a publisher • Can only support limited number of titles.</td>
</tr>
<tr>
<td>University Library System e-journal publishing at the University of Pittsburgh</td>
<td>A journal publishing program subsidized by the University of Pittsburgh and run by the library.</td>
<td>Excitement among librarians at outside institutions and gradual adoption of pilots of similar programs.</td>
<td>Highly intertwined with university and only able to support limited number of journals.</td>
</tr>
<tr>
<td>PLoS One</td>
<td>A “megajournal” that publishes in a broad range of disciplines and charges below-market APCs. Megajournals tend to have higher acceptance rates because they vet articles for “scientific soundness” alone rather than novelty or significance.</td>
<td>Proponents praise megajournals’ low APCs and believe vetting articles based on “scientific soundness” benefits the academy by speeding up peer review and valuing null and negative results.</td>
<td>• Authors in certain disciplines have little funding to pay for APCs • Higher-than-average acceptance rates lower the prestige of the publication • Corporate publishers are adopting this model and allegedly redirecting articles rejected from selective titles to megajournals for profit</td>
</tr>
</tbody>
</table>
Along with larger-scale OA publishing developments, there have also been bottom-up efforts to force down journal prices. Many scholars have launched solo OA journals, and some editorial boards have even left corporate-run journals to start OA counter titles. A recent example is when the editors of Lingua, who left the journal because Elsevier refused to make it OA, launched Glossa, an OA counter title to take its place. OA advocate Peter Suber has closely followed the phenomenon of editors leaving corporate journals to start their own independent publications since 2008 via the “Journal declarations of independence” list (Journal Declarations of Independence).

Scholar-led journals are employing multi-faceted publishing models. Some have become a part of nonprofit OA publishing organizations, such as Glossa, which joined OLH. Others have developed individualized funding approaches, such as the the HAU Network of Ethnographic Theory, which “is an international network of research centers and anthropology departments working together to support HAU’s flagship journal and its innovative book series” (HAU: Journal of Ethnographic Theory). There are also entirely new publishing approaches, including overlay journals, which publish and host their articles via pre-print servers so the journal team is only responsible for peer review and basic website maintenance. One thing virtually all these efforts have in common is that they only publish online in order to keeps costs down.

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Articles page of Discrete Analysis ArXiv overlay journal

New nonprofit journal publishers and solo titles will have to gain esteem among the academic community to attract high submission volumes. As Timothy Gowers points out, "it's important [that these alternative models] acquire a reputation and prestige that people can feel it's okay to submit to them [...]" (Belluz). Journals run by established academics like Martin Eve, founder of OLH, or Timothy Gowers, founder of Discrete Analysis, have a particularly valuable benefit of prestige. As more high-profile academics launch and endorse alternative OA publishing models uptake will likely increase.

All of these alternative publishing initiatives benefit the academy by lowering production costs, keeping publishing revenue within the academic sector, and challenging the high APC bar corporate publishers have set for Gold OA. With each outcrop of nonprofit journals, more attention is being directed towards alternative publishing outlets, giving scholars a sense of choice not previously available with regard to which journals they want to support and how much they think article production should cost.
Democratized journal publishing will foster sustainable OA models

The proliferation of nonprofit organizations and scholars piloting alternative OA journal publishing models leads to a common question: which OA journal publishing approach will become the predominant model of the future? Just as traditional print journals were primarily funded by subscriptions and managed by professional publishers, will the next generation of online-only OA journals have a dominant funding model and publishing arrangement?

This paper argues that asking what the predominant journal publishing model of the future will be is the wrong question. Instead, the academic community should focus on identifying common characteristics among successful OA journal models. This approach acknowledges the need for a multiplicity of publishing models, so that members of different disciplines have the freedom to choose the best model for them based on their needs and available resources. However, this paper does not argue that all alternative publishing approaches should or will be treated equally. Rather, there must be limits set for what constitutes favorable alternatives to the corporate journal publishing model (more on this later).

The idea of embracing many OA publishing models has gained support among the academic community. Roxanne Missingham, Chief Scholarly Information Officer at Australian National University and Deputy Chair of the Australian Open Access Strategy Group, says, “I foresee a future in which there are green publications (such as our university press [...]), gold publications such as PLoS, and hybrid models” (No 'Winner Model' for Open Access).

Dan Morgan, Digital Science Publisher at University of California Press, echoes this opinion. When asked if he thinks there will be an ideal future funding or publishing model for OA journals, Morgan said he believes academia needs to do “whatever works easiest and best, with OA as the outcome! [...] We need to move to business models by design, and not by necessity” (How Collabra is Changing University Press Journal Publishing).

The academic community has introduced many experiments to challenge the corporate journal publishing model (as covered in the “New OA Publishing Models” section of this paper), but such efforts are yet to shift the imbalance of power in the market. Why is this?
Recall what caused the journals crisis - outsourcing production, specialization of the publisher, and, consequently, centralization of journal control - and it becomes clear that truly sustainable OA journal models must inherently reverse these trends.

In order to upend the current publishing environment, this paper argues that democratizing journal publishing, by making the tools needed to publish a journal accessible to all, is key. The academic community must not allow digital journal publishing to become specialized, as “specialization” of print and early digital publishing is the reason societies began outsourcing journals to corporate publishers in the first place. Conversely, lowering the barriers to entry to publish a high-quality journal will allow scholarly organizations of all sizes to quickly and affordably manage journals on their own, eventually outnumbering corporate journals.

In other sectors de-specialization has led to greater democratization. For example, in the finance industry, financial technology such as robo financial advisors are making personal finance planning - once reserved for a select few - more widely accessible (Transferwise). Democratization can also be seen in the music industry, where musicians can now use online services to record, manufacture, and even sell their own music without having to vie for limited opportunities with record labels (Price).

Similarly to the outcomes of de-specialization in other industries, de-specialization of journal publishing will induce decentralization of the journals market. This will break up the corporate publisher conglomerate and allow for substantial, affordable alternatives to corporate journals to emerge. The key drivers of this change will be new technologies, the adoption of affordable online publishing services and new funding models, and varied journal publishing approaches initiated by groups of all sizes.

**New technologies to drive democratized journal publishing**

As in other sectors, online technologies will be the driving force behind the democratization of journal publishing. Technologies will separate publishers from the functions they fulfill, making it possible for anyone to publish a journal. Key areas of journal publishing which online services will need to address include:

- Content production (layout, metadata, website design and hosting, etc.)
- Memberships and registration to necessary scholarly services (e.g. indexes, DOIs, etc.)
- Plagiarism detection
- Hosting

Many of the above needs are being automated or are well on their way via online services. For example, much like how individuals are using mainstream website builders such as SquareSpace to affordably build their own websites, journals could use similar services for website hosting and article production, as well as more journal-specific options like OJS, Scholastica, or Ubiquity Press. As they move online, in such a model, journal articles could transition from PDFs to HTML, which most people are used to reading on mainstream blogs and news sites. If journals were to publish in HTML via website hosting services, production work, such as typesetting, could be virtually eliminated.
Transitioning away from PDFs would reduce production work inherent in the current print-based journal publishing model, and also enhance article quality. Ulrich Herb believes this is already happening: “The next step is already being taken in some areas: Enhance electronic documents with features that are unknown to printed publications [...]” (Questions Surrounding Affordable OA). Readers could expect not only information like data sets which are difficult to print but easy to post online, but improvements to how scholarship is credited: “micro contributions to text publications and allow credit to be given to persons who usually never appear as contributors in printed publications” (Questions Surrounding Affordable OA).

Many other aspects of journal publishing that publishers handle can be done using software. For example, as Kent Anderson points out, “using plagiarism detection software has become the norm for many publishers” (Anderson). Additionally, processes like DOI registration can now also be fully automated via a one-time API integration. Other tasks such as applying for scholarly indexes are moving online making processes more direct and less time consuming.

There are certain non-automatable human functions journal publishers fulfill, such as promotion and copyediting, which nonprofit organizations and scholar-led journals would have to handle when publishing on their own. However, technology is making these tasks cheaper and easier for volunteer editors to split up among themselves or to outsource to affordable providers. Ubiquity Press shows this is possible by keeping its APCs around $300 while still making a profit via outsourcing of labor-intensive tasks like copy editing (Rocks-Macqueen). Many journals have also had success allocating work to graduate student volunteers.

Dan Morgan, Digital Science Publisher at University of California Press, believes that by making journal publishing cheaper and more efficient, new journal publishing technology could actually lead to enhanced human elements of journal production. “Inspired by UC Press' current collaborations with the CoKo foundation I see a real opportunity for a radical lowering of versioning, typesetting, formatting, and hosting costs, and a real opportunity to bring back some of the more human value-add services such as copyediting, developmental editing, instructional design, and other optional services which have fallen by the wayside in high-volume, commercial journal publishing” (How Collabra is Changing University Press Journal Publishing).

The role of services in democratizing journal publishing

Democratization of journal publishing using new online technologies will be made possible by affordable online publishing services that allow the academic community to retain control of journal content. Björn Brembs advocates for this approach, arguing service-based publishing is necessary to avoid journals entering contracts with publishing companies and consequently foregoing copyright control and say in revenue allocation. “Publishing in the future will be a service, not a content-hoarding-and-extortion business,” said Brembs (Bidding for Publishing Services Could Lower Journal Costs).
Brembs argues that service-based journal publishing will ensure costs remain as low as possible because it will introduce competition to the marketplace. Organizations and individuals running journals will be able to bid for the cheapest services to publish on their own. Publishing services will have incentive to make their prices transparent to encourage bids. Brembs equates this to how academic departments bid for large purchases to ensure the best-value is selected.

Additionally, Brembs believes a service-based approach to publishing would open avenues to reinvent the way research is published, such as journals being “replaced by modern technology: tags, categories, etc.” (Bidding for Publishing Services Could Lower Journal Costs). The overlay model is an example of technology replacing PDF publishing. Overlay journals are achieving affordable OA using repositories as a publishing service.

A challenge in service-based publishing that journal teams will need to overcome is paying for production. This will require journals to explore new revenue options such as submission fees, grants, and institutional subsidies, and Green OA with low subscriptions to cover costs. By choosing funding models that work best for their discipline, journals will spread out the cost of publishing OA, which will help avoid putting too much strain on any one funding source.

Democratized journal publishing and the future of OA

Democratization of journal publishing via online services will have many corollary effects that will restore equilibrium in the academic journal marketplace:

• In a democratized service-based publishing system, bidding for the most affordable services will introduce competition to the marketplace lowering publishing costs.
• Self-sustaining revenue will be possible because service-based publishing will give large and small groups the freedom to employ multiple journal funding models.
• Transitioning to online only service-based journal publishing will also hasten a shift away from the JIF to new methods of measuring research quality.

On this last point, the JIF is arguably already being phased out. Many academics are asserting that journal-level metrics like the JIF no longer display strong correlations to journal or consequently article quality because in the digital age scholars are accessing individual articles and citing them based on their own merit (Lozano, Larivièrre, Gingras). Efforts like the San Francisco Declaration on Research Assessment, which has over 12,000 signatures, are calling for research to be assessed on its own merits rather than imperfect journal-based metric systems (DORA). As more journals relying on alternative impact measures emerge and are embraced, efforts to replace the JIF will become more mainstream.
Conclusion

The goals of the scientific community and corporate publishers remain at odds - the former seeks to expand access to research while the latter seeks profit and control. Within the power dynamic of the current journal publishing model the interests of corporate publishers are virtually guaranteed to prevail.

In order to lower the cost to access academic journal articles and pave the way for sustainable OA publishing, a dramatic shift is needed in the journal publishing paradigm. Democratization of journal publishing via new technologies, a move to service-based journal publishing models, and de-specialization of the publishing process will allow for rapid development of alternatives to the current corporate-driven journals model.

The proliferation of service-based models for publishing academic journals will allow the academic community to retain copyright control, create competition in the marketplace to keep publishing costs transparent and low, and help hasten the move towards a better evaluation system than the journal impact factor.

Ultimately, democratization of journal publishing via online services will put control of the entire research lifecycle - from peer review to production to distribution - back in the hands of the academic community.
Works Cited


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