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If, Alongside Libraries, Funders Pulled Their Weight

A Study in Universal Open Access

John Willinsky

- 1 At this point in scholarly publishing, the principal stakeholders (researchers, scholarly publishers, libraries, funding agencies, and societies) agree that open access makes the most sense for science and scholarship in the digital era. There is no such accord over how to achieve it. Rather, strategies and initiatives abound and multiply. We, who make up the anthropology journal collective *Libraria*,¹ working in collaboration with Berghahn Books,² dare to introduce another model because we see an opportunity to combine two successful strategies into a model that is ideally suited for moving anthropology journals to immediate and complete open access without APCs (article processing charges).
- 2 To stimulate the generation of data-driven universal open access models, and following on four years of assessing cooperative publishing models (Willinsky 2019). In its simplest terms and inspired by growing funder commitment to open access (see Plan S³), I am proposing a Library+Funder model that first of all harnesses the Gates Foundation's strategy,⁴ in which the research funder pays the publisher directly for the cost of publishing the research it has supported (Poynder 2018). It then combines Gates' direct-payment strategy with the success of SCOAP³, Open Library of Humanities, Knowledge Unlatched, and Annual Reviews in soliciting broadly based library support for sustaining open access journals.⁵
- 3 To enable anthropology journals to convert from subscriptions to open access under this proposed L+F model, the publishers would approach the funding agencies most commonly acknowledged by authors for having sponsored the research the journals publish, and ask that these funders cover the publishing costs for their share of the journal's content, while asking the libraries to cover the remainder. Or to look at the model a different way, libraries would be given the option of subscribing to open access for a given journal by paying the same price that they would have to subscribed to it closed, minus the amount paid by the funders for the publication of the research they have sponsored. To establish the implications of this approach for sponsoring universal open access, I and two

research assistants, Grace Taylor and Cathey Barone, have assessed the degree of funded articles from a sample of journals in anthropology over the previous three years, drawn from Libraria, a journal collective, and Berghahn Books. Using the Web of Science database, we are able to identify the funders associated with the articles over the previous three years in the relevant journals that are indexed. For those journals that are not indexed, we manually checked the acknowledgements from each article over the previous three years. While we conducted earlier studies in the biomedical field with PLOS, BioOne and eLife (Willinsky and Rusk 2018), in this demonstration of how the L+F model can work in the social sciences, we use both a simplified hypothetical example and an actual journal example from anthropology.

- 4 The funders' and libraries' share, in the case of the anthropology journals that we have examined thus far,⁶ suggests that under the L+F model, the funders' share amounts to 25% of the published items, if all of the research sponsors were to participate in the model, with libraries covering the remaining 75% (with more of the details below).⁷
- 5 The model is designed to improve funders' record of both public impact and financial accountability, while enabling them to become more directly involved in bringing about open access. The model will take some of the pressure off of library budgets, while using existing financial resources from subscriptions to underwrite open access, and retaining the valuable curatorial role that libraries play through their support of open access journals.⁸ The model offers a path to open access for publisher – whether big, small, society, and/or commercial – with opportunities to grow and improve their services by signing on additional libraries and journals as readership expands through open access. The model involves levels of coordination, cooperation, and governance that have been facilitated for smaller publishers and societies by aggregator platforms such as Project Muse,⁹ Erudit¹⁰ and others. Offering open access without APCs gives the model an appeal across the disciplines, while making journals open to researchers everywhere.

Principles of the L+F Model

- 6 What follows below are suggested starting points and guiding principles to assist stakeholders in assessing its viability and proposing refinement and rethinking. The document then applies the model, first to a hypothetical journals using highly simplified but not unrealistic numbers and dollars, and then to the Berghahn journal *Social Analysis*.
 1. TO INITIATE the conversion of a given set of subscription journals to open access via the L+F model, the process might well begin with discussions among relevant publishers, societies, leading funders, libraries, and aggregator platforms. While SCOAP³ was brought about through the considerable support of CERN,¹¹ one of its leaders Salvatore Mele has done much to assist initiatives such as this one through consultations intended to build on its path-breaking conceptual, organization, financial, and legal work. Among the options for initiating the L+F model in anthropology, Libraria is considering (a) working with the relevant coordinating bodies among funders and libraries, such as cOAlition S and the International Coalition of Library Consortia; (b) setting up a centralized agency, with a field-specific funding body such as Wenner-Gren providing the oversight and guidance; and/or (c) directly engaging publishers, such as Berghahn Books, and the relevant funders (see Actual Example below). As well, Libraria will be seeking support for its organizational, legal, and technical start-up costs, with the goal of facilitating the development of materials and systems that others can use to apply the model.

2. PUBLISHERS implementing the L+F model will be replacing their institutional and individual subscription revenue (for other revenue streams, see #3) with the support of funders and libraries for the open access publication of their journals. They will set journal revenue targets based on current subscription revenues with consideration given to inflation, changes in submission numbers and published items, technological innovations, etc. Such targets will be subject to negotiations with representative funder and library bodies.¹² Technically, publishers will integrate a system such as Crossref's Open Funder Registry into their submission platform to standardized authors' identification of funders, with this data used to automate such elements of the model as funder publication notices, annual invoicing, and library-funder revenue sharing calculations, whether managed centrally or by individual publishers.
3. INFORMATION AND AGGREGATOR SERVICES (e.g., EBSCO, JSTOR, Proquest, Cengage, etc.) are important sources of revenue for publishers and have expressed an interest in supporting open access. Although in early phases of the L+F model, publishers' contractual agreements with such services may well remain in place, in the future such organizations might put their services to work for publishers in soliciting open access support from additional libraries and funders; providing libraries with advanced open access content services; and offering back issue access on similar open access terms with funder and library support, among the options open to them.
4. FUNDERS of the research (including governmental, private, and institutional agencies) that participate in the model will agree to pay publishers for the coming year, an amount based on the proportion of articles for which they were a research sponsor in the previous three years of the journal.¹³ The discipline's major funders will be the likely starting point in the early phases of this model, with an expansion of funder participation over time. Funders will be notified on the publication of their sponsored research, as well as part of their publisher invoice.¹⁴ On the principle that funders take credit for each item that acknowledges their support (whether they are its sole or third funder), and to avoid delving into what each funder contributed to the published study, a funder's share will be calculated on the proportion of articles that acknowledge their support (see examples below).
5. FUNDER PARTICIPATION GROWTH can be pursued by demonstrating to funders the extent of their presence in the journals and how direct payment to publishers increases (a) their accountability through improved tracking of publications and costs, (b) their efficiency, compared to allocations for researcher APCs and indirect costs to institutions (for subscriptions), and (c) the public-impact return on investment furthered by immediate and complete open access. Participating funders and libraries will also have reason to recruit funders, with that growth strengthening the model's appeal more generally.
6. LIBRARIES subscribing to the journals that are using this model to move to open access will be approached by publishers to provide their share of the revenue target, which is the proportion of unfunded items published on average annually over the previous three years. This may be further apportioned by publishers to reflect the legacy of consortia and library differential pricing. In deciding to initiate the model, publishers will be able to determine in advance a minimal level of library participation to ensure libraries pay no additional expense, compared to continuing with subscription fees for closed access.
7. LIBRARY PARTICIPATION GROWTH can be pursued by publishers, their sales agents (e.g., EBSCO), and OA bodies (e.g., Knowledge Unlatched) by demonstrating the open access journals' direct value to a library's academic community by presenting the relevant data on readership, editorship, reviewership, and authorship (including authors not published). As with funder growth, participating libraries will have reason to support and participate in recruitment efforts.
8. FREE RIDERS are a risk for such models, but one mitigated with the L+F model as it (a) is only initiated when publishers judge that a sufficient number of funders and libraries have

signed on; (b) appeals to research funders for which the journals provide direct benefit in disseminating and crediting the work they sponsor; and (c) approaches libraries that previously subscribed to the journals with evidence of continuing use and value (also, see #7 above). As well, in addressing this question, one needs to consider (a) the 3,000 libraries that continue to support SCOAP³, while before this agreement they had not cancelled the journals, despite the content in arXiv.org; (b) SciHub's indirect proof that libraries act as responsible supporters of scholarly communication in the face of free-rider opportunities; (c) libraries that did not subscribe to the *Annual Review of Public Health* asking to support it now that it is open that access; and finally (d) the continuing success and growth of open source software initiatives.

9. AUTHORS will be able to publish in participating open access journals without facing APCs, open access embargo periods, or restrictions to posting only a final draft. As well, the conversion to open access means that some authors will be able to read and cite from the journal to which they are submitting for the first time. Authors will use the Open Funder Registry as well as acknowledgement notes for grant specifics and other forms of support. It will not matter for an author's work whether the research has a funder, or the funder is a L+F participant, or the funder has a cap on articles/grant.
10. EXISTING OPEN ACCESS JOURNALS can be incorporated into the model, without additional costs to libraries, in two ways. They can apply to participating funders to support the proportion of sponsored items that the journal publishes. Secondly, they can collaborate with a number of subscription journals that are moving or have moved to open access under this model.¹⁵
11. TO START A NEW JOURNAL, publishers would develop an appeal to the appropriate funders and libraries for such a title based on academic need and assembled expertise, likely with a startup request for an initial period of support until a readership and funding basis can be established. This ability to start news journals remains an important aspect of academic freedom and the formation of new fields.
12. AN EXIT STRATEGY for this model can be set out in the initial and continuing terms of the agreement. Once underway, exiting from the model is bound to pose challenges, but contracts can be drawn up that include a reversion-to-subscription option for journals that are not receiving support from a sufficient number of funders and libraries.

Simplified Hypothetical Example

- 7 By way of a simplified hypothetical example of the model at work, let us imagine that the publisher of anthropology *Journal X* sets a revenue target of \$100,000 for 2020, based on replacing the previous year's institutional and personal subscription revenue, along with other publishing expense considerations, and subject to negotiations with representative bodies of funders and libraries.
- 8 If for *Journal X*'s previous three years (2016 to 2018), the following averages held...
 - 60 items per year were published.
 - 15 items per year acknowledge or credit a funder participating in L+F model.
 - 300 libraries subscribed to the journal in the previous year.
 - \$320 was the average subscription rate for the previous year.
- 9 Under the L+F model, the publisher collects *Journal X*'s 2020 target revenue this way...
 1. Participating funders sponsored 15/60 items, thus for the coming year:
 1. Funders will pay 25% of the revenue target in total (\$25,000).
 2. This amounts to \$1,667 per item funded (\$25,000/15).

3. In this simplified example, the 15 participating funders each pay for one item.
2. Participating libraries sponsored 45/60 items, thus for the coming year:
 1. Libraries will pay 75% of the revenue target (\$75,000).
Cost, if all 300 previously subscribing libraries participate, is \$250/library (\$75,000/300).
 2. Without L+F model, libraries will pay \$333/library (\$100,000/300) compared to \$320 for 2019.
3. In this simplified example, cost difference between open access and subscription models suggests that:
 1. If all of the previously subscribing libraries participate in the L+F model, they will be asked to pay 25% less than they would have been asked to pay for the 2020 subscription fee;
 2. Or, if up to 25% fewer libraries decide to participate in the model, relative to the number subscribing in 2019, the participating libraries will pay, at most, no more than they would have for a 2020 subscription;
 3. Or, as a third possibility, this and other participating journals could partner with existing open access journals, as a means of introducing earlier adopters of OA into the model, while still keeping library costs at or below those that would have ensued with the subscription system.¹⁶

Figure 1.

John Willinsky, March 17, 2019

The Library+Funder OA Calculator: Journal X, Funder Y, and Library Z

A. Imagine Journal X Is Moving to Open Access through L+F Model

1. Enter Journal X's subscription-replacement revenue target for coming year:
2. Enter averages based on Journal X's previous three years.

Number of items published per year:	60
Items crediting a funder participating in L+F:	15
Number of funders credited on a L+F funded item:	1.5

(Funder data available from Web of Science and Crossref Open Funder Registry)

B. Funder Y's Open Access Invoice with Participation in L+F Model

1. Enter items/year crediting Funder Y, based on previous 3 years:

With move to open access, Funder Y's invoice for the coming year: **\$ 3,333**

Funder Y's cost for each item that credits its support: \$ 1,111

Funder Y's share of the cost for items that credit its support: 67%

Journal X's revenue target per published item: \$ 1,667

C. Library Z's Open Access Invoice with Participation in L+F Model

1. Enter # of libraries that subscribed to Journal X in previous year:


With move to open access, Library Z's invoice for the coming year: **\$ 250**

The projected subscription rate without the move to open access: \$ 333

Library's potential savings (and funder share of costs) with open access: 25%

Or, libraries needed if OA is to cost them no more than a subscription: 225

For more information, see [L+F Open Access Model](#)



As a further demonstration of the workings of this simplified example, as well as to allow readers to explore the model for themselves, Raym Crow and John Willinsky have devised interactive Library +Funder OA Calculators for readers to explore at https://docs.google.com/spreadsheets/d/1F_HNsnBMR29OSB87_9mxullt1FrM2pEh_yEhMq4GJ3o/edit#gid=790023027.

Actual Example: *Social Analysis*

- 10 *Social Analysis*¹⁷ is a 63-year-old anthropology journal edited by Martin Holbraad, University College London, and published by Berghahn Journals. It is one of the journals that Berghahn and Libraria are considering for a pilot under the L+F model. The analysis that follows uses publicly available data from the Web of Science. These calculations do not, at this point, include the dollar amounts for the revenue target nor the number of subscribing libraries, but demonstrate how costs would be shared by funders and libraries.
- A. Over the previous three years (2016-18), *Social Analysis* published 107 items, of which 40 (48%) articles credited one or more of 47 funders¹⁸ not all of which are expected to participate in the L+F model, at least in its early phases.¹⁹
 - B. The 40 funded articles in *Social Analysis* over the last three years include 87 acknowledgements of, or credits to, the 47 funders, with an average of 2.18 funders credited per item, suggesting the extent to which the funders have a shared responsibility under this model.
 - C. For the pilot stage of this model (i.e., prior to automated tracking and billing systems; extensive funder recruitment; and extensive open access use data), Berghahn might well begin by securing an agreement to participate in the L+F model from the nine funders that have sponsored three or more items in *Social Analysis* over the last three years:

RESEARCH FUNDING AGENCY ITEMS CREDITING FOUNDER (2016-2018)	
1. Economic Social Research Council	8
2. European Research Council	5
3. Edinburgh University	5
4. German Academic Exchange Service	5
5. Japanese Society for the Promotion of Science	4
6. Wenner-Gren Foundation	4
7. Foundation of Science and Technology, Portugal	4
8. German Research Foundation	4
9. Max Planck Institute	3
Total	42
 - D. The nine funders are acknowledged or credited on 26 articles of the 107 published items, and thus will be asked to provide 31% of the publisher's 2020 L+F revenue target intended to replace the previous subscription revenue.²⁰
 - E. Among those 26 funded items, the nine funders are acknowledged or credited 42 times (reflecting the number of items with multiple funders). Thus, the Economic Social Research Council, with eight items crediting its support, would be asked to cover 5.9% of Berghahn's 2020 target revenue for *Social Analysis* ($5.9\% = 31\% \times 8/42$).
 - F. All of the libraries (and consortia) subscribing to *Social Analysis* in 2019 would be approached to cover the remaining 69% of the journal's revenue target for 2020, which could lead to any of the three scenarios (a) – (c) outlined in the conclusion to the Simplified Hypothetical Example presented above.
- 11 There are still many aspects of the Library+Funder model of open access to be worked out among the stakeholders, principal among them is the nature and scope of a coordinating body to facilitate the relationship among the participants. The initial steps will be arduous but with each new participating publisher and funding agency, with each new

data strategy and invoicing innovation, the resulting processes further rationalize scholarly publishing with an eye to its original purposes of increasing the circulation and production of knowledge. What this will mean for the pricing and profit controversies, which also threaten to derail that original purpose, remains to be seen, but increasing the transparency among libraries and funders on pricing and ending the monopoly content ownership may be introduce market pressures. Finally, what is not to be minimized in this initiative is exploring the terms of a universal open access, with ambitions for global applicability across the disciplines.

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NOTES

1. <http://libraria.cc/members>
2. <https://berghahnbooks.com/>
3. “It is only through a concerted and coordinated approach across national funders that the necessary progress can be made,” (Moedas 2018; see also Rabesandratana 2019). There’s dissent from the academic community over the few specifics included so far in this plan. Scholarly societies have pushed back to the Plan (<https://www.pnas.org/content/116/7/2400>), and we believe that this model can make open access work for those societies by utilizing this very funder support for OA (Carling 2018).
4. <https://chronos.gatesfoundation.org/>
5. In terms of library support for open access, 3,000 libraries and related institutions support the SCOAP3(source: <https://scoap3.org/participating-countries/>) arrangement with OA journals in particle physics (Romeu et al. 2014); 250 libraries are behind the open access journals of the Open Library of Humanities (<https://www.openlibhums.org/plugins/supporters/>), and hundreds of libraries take advantage of the different open access journal and book offerings of Knowledge Unlatched (<http://www.knowledgeunlatched.org/>). More recently, Annual Reviews has begun soliciting library support from previous subscribers of *Annual Review of Public Health*, having made the journal open access (source: <https://www-annualreviews-org.stanford.idm.oclc.org/page/subscriptions/publichealthopenaccessinitiative>).
6. The data is accessible at <https://docs.google.com/spreadsheets/d/1jT6dnymqBYnG46piCJeH3jwKD-s0ahlGf3fFEtsk-3g/edit?usp=sharing>
7. As for other disciplines, a sample of biomedical journals revealed that 85 percent of the items had funders (Willinsky and Rusk 2018), in the sciences 70 percent (data accessible at <https://docs.google.com/spreadsheets/d/1nyGivZmLYaa4hbHnEGUaxMzg6AJSOvWETKtpUXPIGro/edit?usp=sharing>) and mathematics 60 percent (data accessible at https://docs.google.com/spreadsheets/d/1TXum7i_xdN6sH0eJuwisJIdLZ1gO2LrhBG5ovnXyG4Q/edit?usp=sharing), while the figure is expected to be much lower in the humanities, although still not zero.
8. This quality assurance function may be coordinated with journal participation in the Directory of Open Access Journals (<https://doaj.org/>) (see the DOAJ blogpost Quality of DOAJ Listed Journals [<https://blog.doaj.org/2019/02/25/quality-of-doaj-listed-journals/>], February 12, 2019).
9. <https://muse-jhu-edu.stanford.idm.oclc.org/>
10. <https://www.erudit.org/en/>
11. <https://home.cern/>
12. On pricing, CERN, which initiated and administers SCOAP³ on behalf of the 3,000 participating libraries, has negotiated expenditure caps with publishers and an article rate, by its estimates for its second phase (2017–2019), amounting to \$1,047 an article, with Elsevier and Springer Nature publishing the majority of articles under the agreement (source: <https://scoap3.org/phase2-journals/>). On the antitrust and competition law question for such models, Salvatore Mele has advised: “The key is an agency acting for present purchasers versus a self-organizing alliance of sellers. The first is SCOAP3 and the second obviously a Cartel!” (personal correspondence, April 19th, 2019).
13. Where the research funder is a government agency that also subsidizes the country’s journals (see Canada [http://www.sshrc-crsh.gc.ca/funding-financement/programs-programmes/scholarly_journals-revues_savantes-eng.aspx], as well as countries in Latin America, Scandinavia, and elsewhere), the agency needs to distinguish between supporting a vital journal culture within the country and facilitating its authors making government-sponsored research publicly available through open access journals published anywhere.

14. While proposing that this model be integrated into publisher systems, another option is to utilize the Gates Foundation's Chronos (https://chronos-oa.com/?slide=Let%27s_reduce_administration_-_and_concentrate_on_research!) to pay publishers directly, as it is now available for funders to license and use.
 15. In a hypothetical study (Willinsky and Rusk 2018) applying the L+F model to a combination of non-profit life sciences open access and subscription publishers, it was shown how the open access publishers PLOS (28K items published in 2015) and eLife (1K items) could join forces with the subscription-based aggregator BioOne (11K items) to offer open access without APCs by increasing library costs for BioOne subscribers by ten percent, while adding a second subscription-based publisher to the conversion would turn the increased price into a library savings.
 16. In addition to the study cited in fn. 8, an investigation of Canadian social science journals revealed how three journals making this move to open access can include a fourth existing open access journal, with libraries paying no more to support these four open access titles than they would for the three subscription journals alone (Willinsky 2017).
 17. <https://www-berghahnjournals-com.stanford.idm.oclc.org/view/journals/social-analysis/social-analysis-overview.xml>
 18. The data is accessible at <https://docs.google.com/spreadsheets/d/1ZzA5s-LfliMbWgtSxiav16AfeaBKqytDhx5Nyl5ABo/edit?usp=sharing>
 19. For editorial cost-share purposes, articles are weighted three times that of editorial materials and book reviews.
 20. The data is accessible at https://docs.google.com/spreadsheets/d/1pun3jeP-WbRDGPR56QNoYBeAivS_LoPwyW5vt24_BxI/edit?usp=sharing
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ABSTRACT

This demonstration study sets out the way in which a model for open access can work in which funders pay the portion of publishing costs associated with the articles that acknowledge research funder. Using the field of anthropology, this analysis presents the participation incentives and advantages behind of an open access model in which a journal article's publication costs are paid by either (a) the research funder(s) acknowledged by the article or, if without a funder, (b) the libraries whose patrons read and utilize the research. Using both hypothetical and actual examples, the paper describes how the existing metadata systems such as Crossref's Open Funder Registry can be utilized to automate the implementation of the model. It also addresses the model's economic impact, from an initial pilot study to large-scale implementation, for the principal stakeholders in scholarly communication.

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Keywords: Open access; Scholarly publishing economics; Research funding

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