NOTES ON OPERATIONS

Assessing Opt-In Rates for Transformative Agreements

Daniel G. Tracy, Elizabeth A. Budd, Thomas H. Teper

With increasing requirements for open access (OA) by funders, academic libraries have begun piloting so-called "transformative agreements" with publishers. One type of agreement gives researchers at an institution read access to all content while also allowing them to publish articles OA in hybrid (and sometimes gold) OA journals without payment of an Article Processing Charge (APC). Such models often give corresponding authors from an institution the ability to opt in or out of making their article OA for hybrid journals. This article provides an assessment of two pilot transformative agreements at one large research institution that participated as a member of a consortium. It provides insight into opt-in rates overall for each publisher as well as breakdowns by disciplinary affiliation and rank of the researchers, as well as the combined impact of the agreement and other mechanisms on the overall OA availability of research at these publishers with researchers at the institution regardless of corresponding author status. The discussion includes a review of lessons learned and the overall benefits and challenges of working with such agreements.

Recent years have seen a steady rise in transformative agreements with various publishers. Such agreements take different shapes, but in general are agreements "in which former subscription expenditures are repurposed to support open access publishing of the negotiating institutions' authors, thus transforming the business model underlying scholarly journal publishing, gradually and definitively shifting from one based on toll access (subscription) to one in which publishers are remunerated a fair price for their open access publishing services."[1] The term transformative agreement updates what were previously called offset agreements, but the two terms share the concept that subscription funds are redirected to publication costs.[2]

The University of Illinois Urbana-Champaign through The Big Ten Academic Alliance (BTAA) participated in pilot transformative agreement programs for Cambridge University Press (2021–2022) and Wiley (February-December 2022). Although these are not the first transformative agreements into which the University entered, they are different from the prior agreements in terms of the number of journals and breadth of disciplines covered—particularly Cambridge, which is a much more significant publisher in the humanities and social sciences. Both were read and publish agreements, funding both institutional reading access and a limited number of full waivers of article processing charges (APCs) for articles published by the institution's corresponding authors. Authors have the opportunity to opt in or

Daniel G. Tracy (dtracy@illinois.edu), Associate Professor and Head, Scholarly Communication and Publishing, University of Illinois Urbana-Champaign, https://orcid.org/0000-0002-0106-6293. **Elizabeth A. Budd** (eabudd2@illinois.edu) received her MS-LIS from the University of Illinois Urbana-Champaign in May 2024, https://orcid.org/0009-0008-0919-7459. **Thomas H. Teper** (tteper@illinois.edu), Professor and Associate Dean of Libraries for Collections and Technical Services, University of Illinois at Urbana-Champaign, https://orcid.org/0000-0001-6629-0678.

Library Resources & Technical Services | January 2025
https://doi.org/10.5860/lrts.69n1.8184

out of these agreements, but the workflows for doing so differ, both at the point of the article agreement process and retroactively.

This article seeks to understand and evaluate the impact of these pilots on the open access (OA) output by one institution's researchers. To do so, we use quantitative analysis to answer the following specific, interrelated questions:

1. What is the overall opt-in rate for OA publishing under the Cambridge and Wiley transformative agreement pilots?
   a. Are there local differences in opt-in rates among researchers from different disciplines or campus units, or based on author seniority?
2. How does the University's OA output (as a percentage of publications) with Cambridge and Wiley compare to previous years?
3. Because these agreements are both part of a larger consortial agreement, what is the broader indirect impact of the consortial agreement on the percentage of local OA output from these publishers due to co-authorship with corresponding authors at other participating institutions?

Background

A combination of opportunity and deliberate work through consortial agreements characterizes the University of Illinois's path toward implementing transformative agreements. The BTAA licenses many journal agreements on behalf of its members. Simultaneously, many locally licensed agreements remain in renewal cycles established by previous negotiations. Consequently, the institution sits firmly within the midst of a prolonged transitional period rather than on one side or another of a profound transformational moment.

Early institutional support for OA publishing and infrastructure included serving as a founding member of SCOAP3, support for arXiv's transition toward a community-supported model, and participation in Knowledge Unlatched's open book publishing pilots. With respect to publishing infrastructure and monograph publishing, the University does support several agreements either directly or through consortial partnerships. As early as December 2018, investigations by William H. Mischo and Thomas H. Teper demonstrated external-to-the-library institutional support of nearly $1 million annually in APCs paid in support of faculty-authored papers between 2013 and 2018.[3] Further internal research of 2019 ranked publishing output among University faculty as follows, from largest to smallest: Elsevier, IEEE, Springer-Nature, Wiley, American Chemical Society, Taylor & Francis, ACM, Sage, MDPI, American Physical Society, American Institute of Physics, IOP, Cambridge University Press, Frontiers, and the Royal Society of Chemistry.

The University of Illinois began a process of converting existing traditional license agreements as opportunities arose, depending on renewal cycles and the publisher's available transformational models. Agreements were established with IEEE (2019), MDPI (2021, discount only), Elsevier (2024), ACM (2024), IOP (2024), AIP (2024), and other presses with smaller numbers of local scholarly outputs. In some cases, the institution licenses journal access on a title-by-title basis, limiting

opportunities to publisher-focused transformational licenses. In other cases, particular publishers may not support or have not supported transformational agreements without comprehensive read access licenses.

This renewal cycle model primarily governs how transformational agreements moved through consortial negotiations. Working through its primary licensing partner, the BTAA, the University of Illinois Urbana-Champaign implemented transformational publishing models with Wiley and Cambridge University Press. With Wiley's and Cambridge's opt-in model OA agreements in place for multiple years, this examination focuses on the transitional pathway and opt-in rate for authors with both of these publishers. In both cases, affiliations are driven by the corresponding authors' home institutions, and OA rights are limited to peer-reviewed, scholarly articles.

Literature Review

A number of studies have looked at the general (regardless of discipline) impact of early offset agreements or later transformative agreements, usually in regard to specific countries or regions in Europe or at specific publishers. For example, Lisa Olsson et al. reported the impact of one year of the Springer offset agreement (the "Spring Compact") in Sweden, showing a growth of between 595 percent and 885 percent in hybrid articles published OA in 2017, with the variation depending on assumptions made about historical trends.[4] This agreement did not include the option to opt out, however, and the growth does not necessarily reflect this consideration. Mafalda Marques and Graham Stone examined a three-year Springer offset agreement in the UK and Europe, the first study to report the impact of an opt-in/opt-out model for at least some of the institutions and countries studied. In the UK, 35 percent opted out of the agreement in the first year with opt-out rates dropping to 18 percent and 17 percent in subsequent years, with other countries starting with only 16–18 percent opt-out rates and then lowering slightly from there.[5] Rita Pinhasi, Lothar Hobling, and Brigitte Kromp reported on analysis of the first year of a Wiley deal with Austrian academic libraries in the KEMO consortium. Authors in the KEMO consortium had a 74 percent opt-in rate for gold and hybrid combined; in comparison, 45 percent of articles with a corresponding author in Austria and 10 percent globally were published OA in gold and hybrid Wiley journals during this period.[6] The studies by Marques and Stone and by Pinhasi, Holbling, and Kromp suggest that improved author opt-in workflows were a significant factor in improving opt-in rates. This aligns with earlier work by Pinhasi et al. and by Christian Gumpenberger, Lothar Hölbling, and Juan Ignacio Gorraiz that suggested publisher workflows, variances between them, and the corresponding author model poses a variety of problems for transformative agreement uptake.[7]

A couple of studies analyzed transformative agreements to consider a transition to OA more broadly. Mandy Hill analyzed early transformative agreements held at Cambridge University Press across institutions; she noted that over 80 percent of articles from institutions with transformative agreements were OA as a result. These agreements had a major impact on the proportion of OA output from the press overall, growing from only 5 percent of articles in 2018 to 37 percent in 2021, with anticipation of reaching over 50 percent in 2022.[8] She noted that Cambridge has a goal of transitioning all journals to

OA by 2025. Others have questioned whether even with growth in OA output the agreements can fully succeed. Wilhelm Widmark, observing the case in Sweden, noted that such agreements had resulted in 75 percent open access in 2021, significant progress but short of the 100% benchmark set that year and at a high cost that may put a full transition out of reach.[9] Ángel Borrego, Lluís Anglada, and Ernest Abadal, analyzing the ESAC registry agreements, designate some as "pre" or "partially" transformative rather than "fully" transformative.[10] When Vladimir M. Moskovkin, Tatyana V. Saprykina, and Igor V. Boichuk analyzed agreements in the ESAC registry, they saw a growth of 230 percent in just over one year in such agreements but only a 150 percent growth in OA articles.[11] The 2022 and 2023 "Transformative Journal" reports from cOAlition S showed a number of such journals failing to meet targets and thus being removed from that program, which was one strategy promoted for Plan S compliance.[12]

Transformative agreements are still relatively new, however, and judging their impact may be premature. For example, Niels Taubert et al. have provided recent statistical analysis of factors impacting uptake of gold and hybrid OA in Germany over a multi-year period. They noted that in 2020, transformative agreements began to have a statistically significant impact on uptake of OA, accounting for 12 percent of variance in adoption of OA between institutions in that year and apparently growing. They found no impact on OA uptake from the presence of specific OA infrastructure and services. By far the largest impact they found was based on the overall disciplinary profile of the institution, although the nature of their analysis presents the disciplinary profile as a score and did not distinguish the impact of specific disciplines.[13]

Studies that have examined disciplinary differences related to OA mostly predate transformative agreements and tend to focus on surveys of researchers' self-reported behaviors and beliefs. Jennifer Rowley et al. showed similar reported ratios of OA to non-OA article publications among scientific, technical, and medical scholars and humanities and social science (HSS) scholars, as well as similar levels of uncertainty about future practices, with small differences in specific ideas about OA.[14] Likewise, in a survey of scholarly societies, Alicia Wise and Lorraine Estelle found little difference in the level of experience of different disciplines with OA publication, but greater concern about the APC model among HSS societies.[15] Yimei Zhu reported similar levels of perceived importance of OA across different groups but found different publication behaviors among disciplines in the UK, with researchers in the medical and life sciences more likely to publish gold OA, natural sciences and engineering more green (i.e., repository-based) OA, and HSS researchers reporting less of both.[16] Carol Tenopir et al. and later Elizabeth Dalton, Carol Tenopir, and Bo-Christer Björk found greater acceptance of OA among science and engineering researchers and more anti-OA sentiment among HSS disciplines, with math scholars falling into the more positive group in the earlier study and the more negative group in the second study.[17] A larger literature synthesis by Anna Severin et al. in 2018 and 2020 has found a general shift towards OA across disciplines over the last three decades, but with unevenness among disciplines in terms of the degree of the shift and the primary mechanisms for OA (i.e., journal vs repository).[18] Thus these studies show some inconsistencies as to whether or not they report a real disciplinary difference.

The intersection of OA with researcher seniority has been less studied, and the reported results have been inconsistent. For example, Zhu's study shows more experience with both green and gold OA among older or senior academics, and Philips Ayeni and Rebekah Willson show greater OA article publication rates in OA journals by mid-career humanists than early career researchers.[19] By contrast, the studies by Tenopir et al. and Dalton, Tenopir, and Björk found more acceptance of OA among doctoral students and post-doctoral researchers.

Methods

We gathered publication details and calculated descriptive statistics for article publications from the university in Cambridge (2021–2022) and Wiley (2022) journals during the pilot period and in the years prior to the pilots beginning (2019–2020 for Cambridge; 2019–2021 for Wiley). Publication information was gathered in two ways: first, the vendors provided lists of articles where the responsible corresponding authors had opted into and out of the agreements. Both publishers provided an opportunity for authors to retroactively opt in, and we contacted local corresponding authors who had opted out to confirm they were aware of their eligibility and the opportunity to opt back in. We supplemented the publication data with public information about the primary department and college of the responsible corresponding author as well as their rank (graduate student, faculty, academic professional, or other). In some cases, the process of supplementing the data revealed that a responsible corresponding author had been mis-assigned to the university's agreement and these were removed from the data set and the publisher was notified so that they could correct the author affiliation information and notify the appropriate institution—most frequently another institution in the university system that also participated in the consortial agreement. We also verified and supplemented the list of publications against the public data in the local researcher information management system, Illinois Experts, a branded version of Pure. This data could only answer the first question related to opt-in rates for University of Illinois Urbana-Champaign corresponding authors, however. We therefore gathered data from Illinois Experts for a full list of articles with a local author or co-author in the publishers' eligible journals and limited this list to articles in eligible article types (excluding, for example, editorials and book reviews). Data verification and maintenance in Illinois Experts helps ensure a comprehensive list for these publishers and journals, and use of this data set avoided possible missed articles in cases where a publisher may have misassigned author affiliations to another institution. This report provided a full list of institution-affiliated articles where the local author was not the first author. We also pulled similar data from the same system for years prior to the agreements back to 2019: this data would allow us to answer the second and third questions.

Question 1 asked about the overall opt-in rate for the pilot agreements, with a sub-question about differences in opt-in rates among different disciplines or by author seniority. We calculated the overall opt-in rate for each year of the Cambridge University Press pilot agreement and the eleven-month period of the Wiley pilot agreement. To examine disciplinary variation, we used the author affiliation coding added to the data set to calculate the opt-in rate for each college. In the case of one college, Liberal Arts and Sciences, we calculated departmental opt-in rates due to the extreme disciplinary

variation within the college. We also performed a departmental breakdown for Engineering after observing a higher than anticipated opt-out rate for the Cambridge agreement (see "Results"). We also calculated opt-in rates broken down by author seniority status, captured in the categories of graduate student, assistant professor (regardless of tenure-line or specialized faculty status), associate or full professor (regardless of tenure-line or specialized faculty status), post-doc, and other academic staff.

Question 2 asked about the overall change in OA output from the university in the hybrid journals covered by the agreements compared to prior years. For this question, we calculated the percentage of articles in eligible article categories published OA in their final version of record for each year prior to and during the agreements beginning with 2019, inclusive of all eligible articles regardless of whether a local institutional author was the responsible corresponding author. Because transformative agreements base hybrid APC waiver eligibility on article acceptance date, the data for prior years is not strictly comparable. For the purposes of our analysis, however, we deemed it a reasonable proxy.

Question 3 asked about the impact of the broader consortial agreement on the overall OA rate. For this, we returned to the full set of qualifying articles published in eligible journals for the pilot years regardless of the responsible corresponding author's institution. In cases where we did not have the acceptance date for the publication, the publication date was used as a proxy, although we realize this is an imperfect match. Each of these was coded as having a local institutional responsible corresponding author, a responsible corresponding author from another institution in the consortium, or a responsible corresponding author from other institutions not covered by the consortial agreement (but which may be covered by other similar agreements). We then calculated percentages of OA and non-OA articles belonging to each of these groups.

Results

During the pilot period, a total of 251 articles were eligible for the transformative agreements, with 180 of those articles in Wiley journals and seventy-one articles in Cambridge journals (figure 1). Question 1 asked about the opt-in rates for each pusher during the pilot agreements. Of the articles in Wiley journals, 156 opted in to OA (87 percent), while twenty-four articles opted out (13 percent). For the two-year pilot period with Cambridge, fifty-six articles opted in (79 percent), and fifteen articles opted out (21 percent). The proportion of articles opting in to OA increased from the first year of the Cambridge pilot period to the second. In 2021, twenty-three of thirty-five articles opted in (66 percent), thirty-three of thirty-six articles opted in to OA in 2022 (92 percent).

Disciplinary Comparison

Question 1a asked about differences in opt-in rates for different disciplines. The seventy-one articles in Cambridge journals were published by authors from eight colleges and schools, the University Library, and the local Prairie Research Institute (figure 2). All authors from the College of Fine and Applied Arts, the School of Labor and Employment Relations, the College of Law, the Prairie Research Institute, and the University Library opted in to OA (ten articles total). For the other units, the OA

opt-in rates were 86 percent for the College of Agricultural, Consumer, and Environmental Sciences (six of seven total articles), 67 percent for the College of Applied Health Sciences (two of three total articles), 75 percent for the College of Education (three of four total articles), 67 percent for the College of Engineering (ten of fifteen total articles), and 78 percent for the College of Liberal Arts and Sciences (twenty-five of thirty-two total articles).

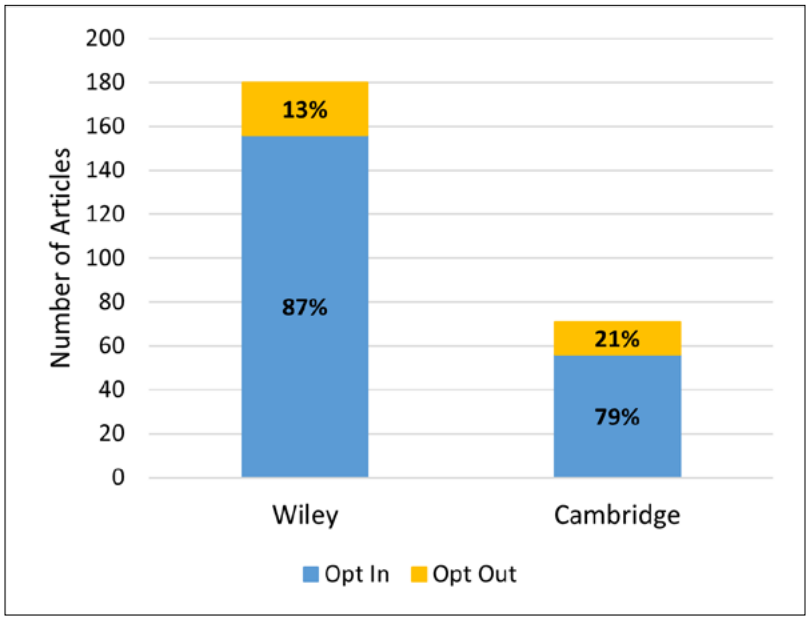

Figure 1. Overall opt-in and opt-out rates by publisher.

The fifteen articles in Cambridge journals with corresponding authors from the College of Engineering were spread across four departments (figure 3). All articles with authors from Aerospace Engineering (two) and Civil and Environmental Engineering (three) opted in to OA. There was one article with a corresponding author in Materials Science and Engineering, which opted out. Mechanical Science and Engineering had eight total articles, with five opting in (63 percent) and three opting out (38%).

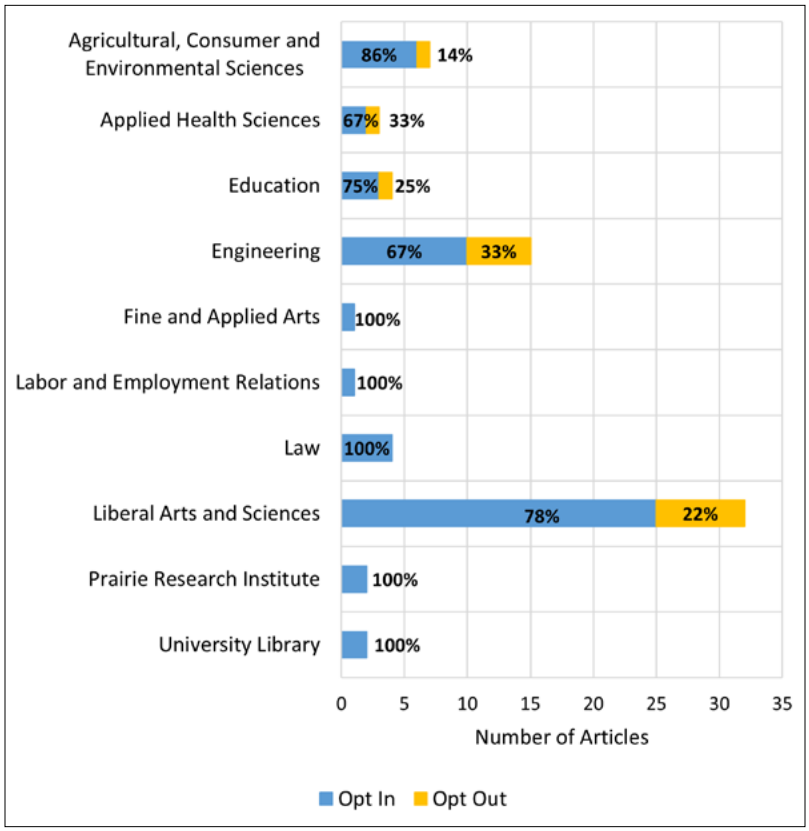

Figure 2. Cambridge opt-in and opt-out rates by college.

The thirty-two articles from the College of Liberal Arts and Sciences were spread across fourteen departments (figure 4). Nine of these departments had one or two articles, all of which opted in to OA. Mathematics had two articles, both of which opted out. The Department of Spanish and Portuguese had four total articles, which were split evenly between opting in and opting out. The departments of Anthropology, History, and Linguistics each had one opt-out article, equivalent to 33 percent, 13 percent, and 25 percent of the departments' articles, respectively.

The 180 articles in Wiley journals were published by authors from thirteen colleges and schools, as well as authors from the Prairie Research Institute (figure 5). All authors from the College of Business, the College of Fine and Applied Arts, the School of Information Sciences, the School of Labor and Employment Relations, the College of Media, and the School of Social Work opted in to OA (fourteen articles total). For the other units, the opt-in to OA rates were 88 percent for the College of Agricultural, Consumer, and Environmental Sciences (thirty-seven of forty-two total articles), 25 percent for the College of Applied Health Sciences (one of four total articles), 80 percent for the College of Education (four of five total articles), 85 percent for the College of Engineering (twenty-nine of thirty-four total articles), 93 percent for the College of Liberal Arts and Sciences (fifty-two of fifty-six total articles), 0 percent for the College of Medicine (one total article that opted out), 79 percent for the Prairie Research Institute (eleven of fourteen total articles), and 80 percent for the College of Veterinary Medicine (eight of ten total articles).

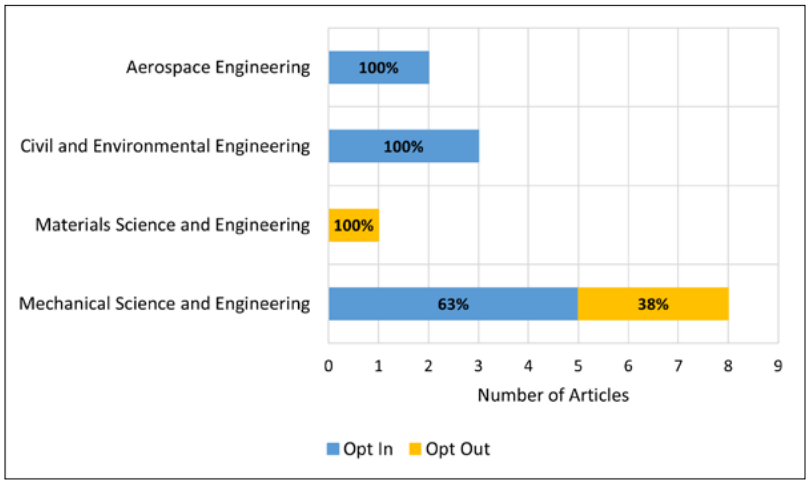

Figure 3. Cambridge opt-in and opt-out rates by engineering department.

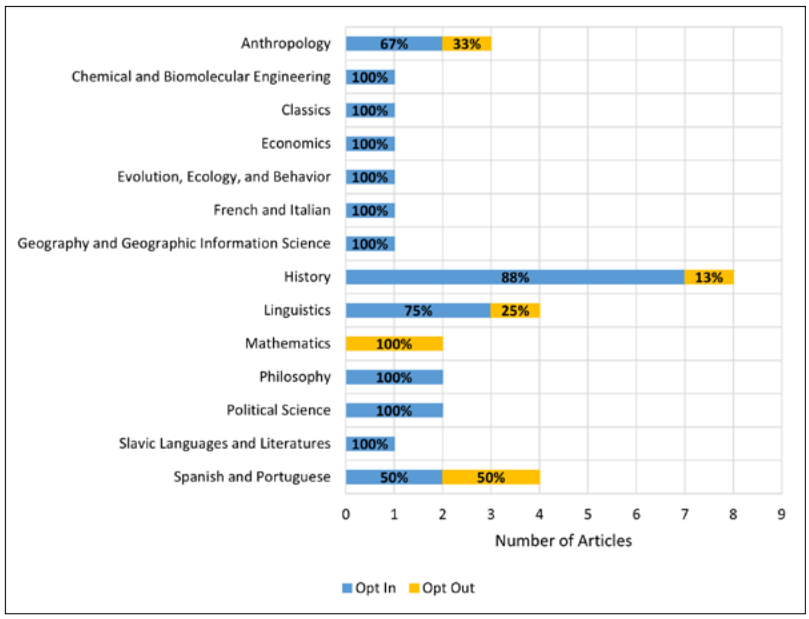

Figure 4. Cambridge opt-in and opt-out rates by liberal arts and sciences department.

The thirty-four articles in Wiley journals with corresponding authors from the College of Engineering were spread across six departments (figure 6). All articles with authors from Bioengineering (three), Electrical and Computer Engineering (eight), and Physics (one) opted in to OA. Material Science and Engineering and Mechanical Science and Engineering each had one article opt out, for opt-in rates of 91 percent and 75 percent, respectively. Civil and Environmental Engineering had seven total articles, with four opt-ins (57 percent) and three opt-outs (43 percent).

The fifty-six articles from the College of Liberal Arts and Sciences were spread across eighteen departments (figure 7). Fourteen departments had 100 percent opt-in rates, with total numbers of articles ranging from one to seven. Anthropology, Chemistry, Geology, and Microbiology each had one

opt out, for opt-in rates of 50 percent, 83 percent, 75 percent, and 80 percent respectively.

Author Seniority Comparison

Question 1a also asked about opt-in and opt-out rates by author seniority. In Cambridge journals, articles with corresponding authors who were graduate students, (tenure-line and specialized) assistant professors, and (tenure-line and specialized) associate and full professors all had opt-in rates of 79 percent, from a total of nineteen, fourteen, and thirty-three articles, respectively (figure 8). One article with a postdoctoral researcher as the corresponding author opted out, and of the four articles with other academic staff corresponding authors, three opted in (75 percent).

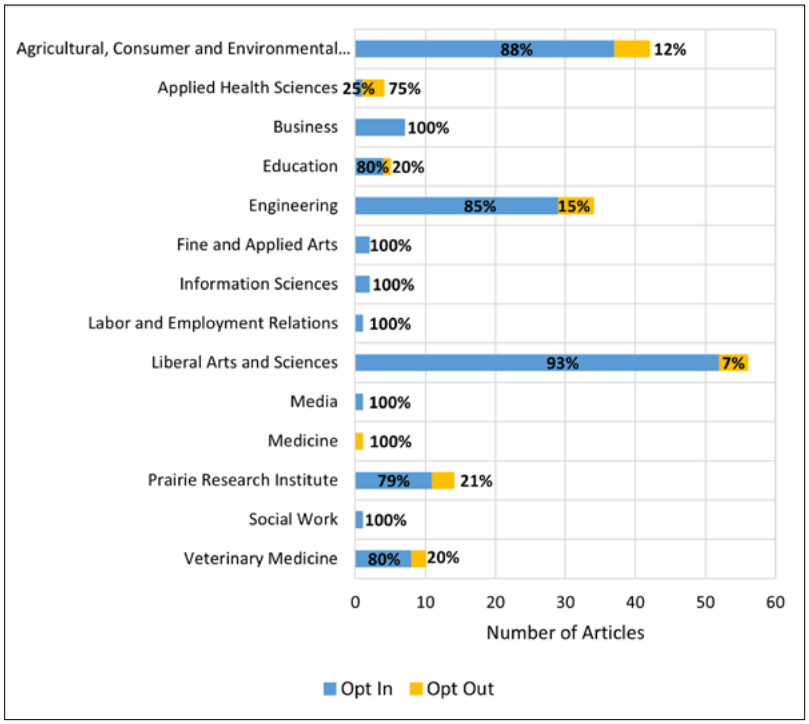

Figure 5. Wiley opt-in and opt-out rates by college.

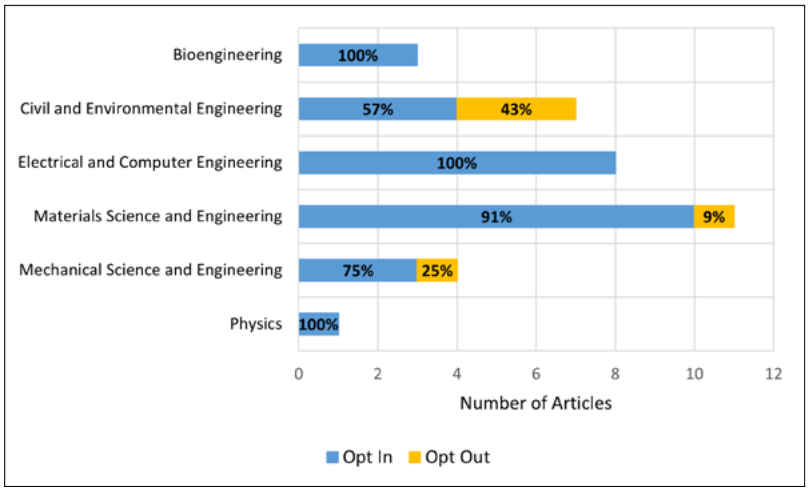

Figure 6. Wiley opt-in and opt-out rates by engineering department.

In Wiley journals, 83 percent of articles with corresponding authors who were (tenure-line and specialized) associate and full professors opted in in (seventy-nine of ninety-five total articles, figure 9). For articles with corresponding authors who were (tenure-line and specialized) assistant professors, 97 percent opted in (thirty-three of thirty-four total articles). All nine articles with corresponding authors who were postdoctoral researchers opted in to OA. For graduate student corresponding authors, 87 percent of articles opted in (twenty-six of thirty total articles). Twelve total articles had other academic staff corresponding authors, with 9 articles that opted in (75 percent), and three articles that opted out (25 percent).

Overall Growth in OA Output with the Two Publishers

For Question 2, we examined the impact of the transformative agreements on the overall number of OA articles in hybrid journals published by Wiley and Cambridge by university authors (figure 10). For this phase of analysis, the corresponding author did not need to be affiliated with our university, but the articles did have to be an eligible article type (i.e., research articles). This data is thus a more inclusive set for the pilot years than the data used in the analysis of Question 1. In 2019, the percentage of OA articles published in these journals by university authors was less than 10 percent. Both publishers show a small amount of growth in OA articles in 2020. Between 2020 and 2021, the first year of the pilot period of Cambridge, the percent of OA articles in Cambridge journals increased from 18 percent to 53 percent. This growth continued into the second year of the pilot program, increasing to 79 percent of articles published by University of Illinois Urbana-Champaign authors in 2022. For Wiley, there was a small amount of growth in OA from 2020 to 2021. A large increase in OA occurred between 2021 and 2022, when the pilot program went into effect, from 15 percent to 56 percent of articles being published OA.

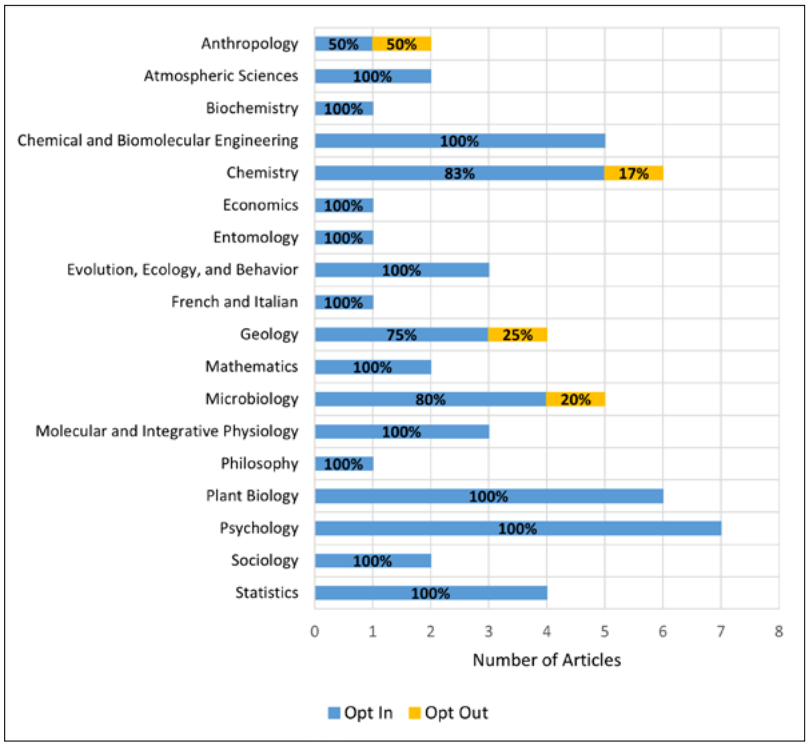

Figure 7. Wiley Opt-In and Opt-Out Rates by Liberal Arts and Sciences Department.

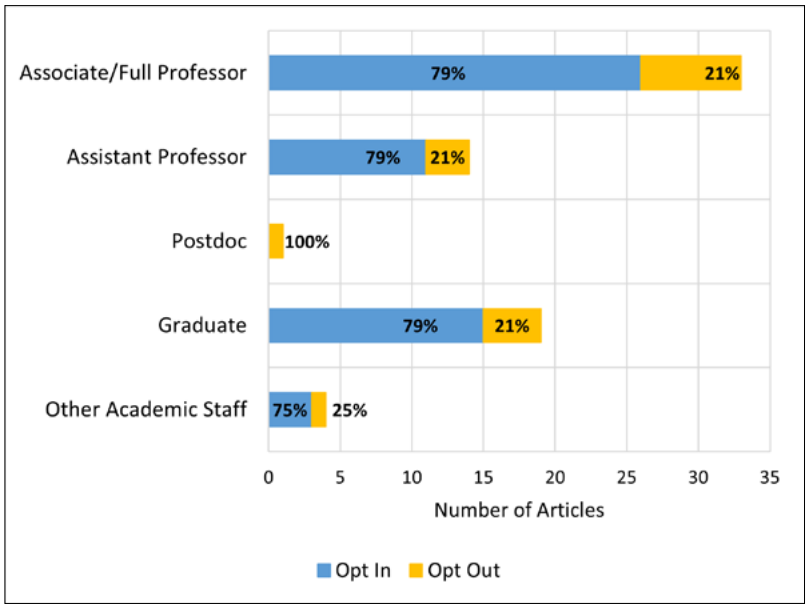

Figure 8. Cambridge Opt-In and Opt-Out Rates by Author Status.

Consortial Impact

Finally, for Question 3, we examined the impact of the pilot transformative agreements on the OA output of university authors. Of all the articles published in Cambridge journals in 2021 by university authors, 48 percent of those articles had a University of Illinois Urbana-Champaign corresponding

author and were OA, while 17 percent had a local corresponding author but were not OA (figure 11). Five percent had a corresponding author affiliated with another participating BTAA institution and were published OA, while 2 percent had corresponding authors from those institutions and were not OA. Finally, 7 percent of articles had corresponding authors from other institutions and were OA, while 21 percent had non-BTAA authors and were not OA.

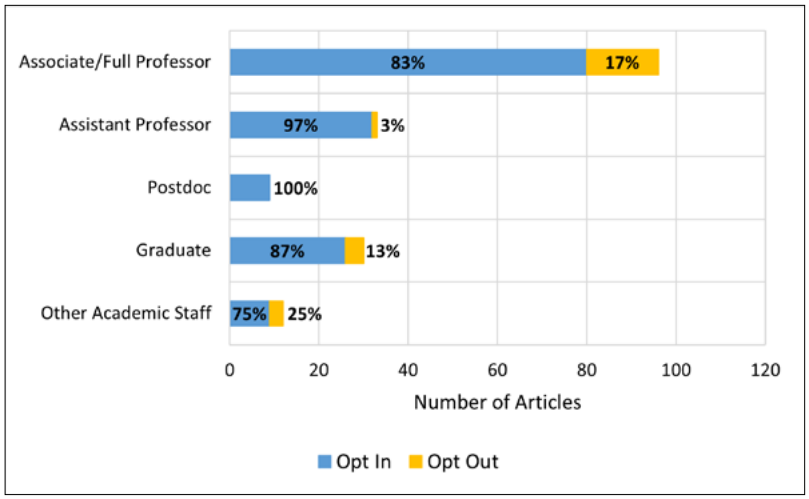

Figure 9. Wiley opt-in and opt-out rates by author status.

Of all the articles published in Cambridge journals in 2022 by university authors, 57 percent of those articles had a University of Illinois Urbana-Champaign corresponding author and were OA, while 9 percent had a local corresponding author but were not OA (figure 12). Three percent had a corresponding author affiliated with another participating BTAA institution and were published OA. Finally, 19 percent of articles had corresponding authors from other institutions and were OA, while 12 percent had non-BTAA authors and were not OA.

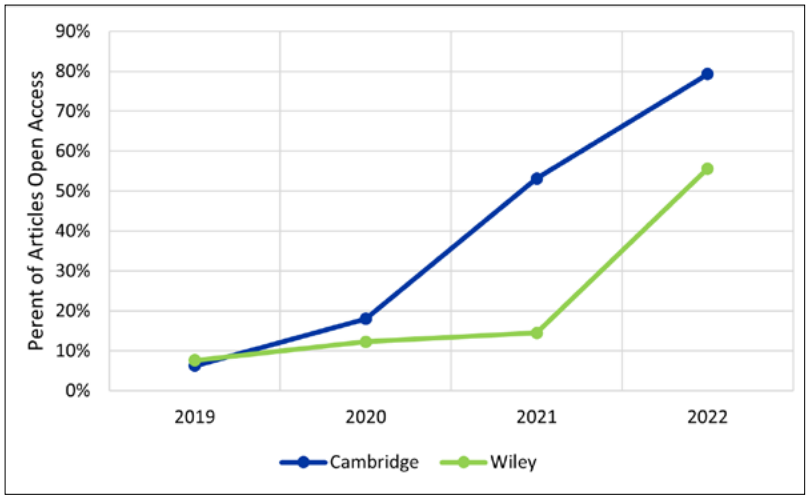

Figure 10. Percent of articles open access by publisher, 2019–2022.

Of all the articles published in Wiley journals in 2022 during the pilot period by university authors, 42 percent of those articles had a University of Illinois Urbana-Champaign corresponding author and were OA, while 8 percent had a local corresponding author but were not OA (figure 13). Four percent had a corresponding author affiliated with another participating BTAA institution and were published OA, while 1 percent had corresponding authors from those institutions and were not OA. Finally, 17 percent of articles had corresponding authors from other institutions and were OA, while 29 percent had non-BTAA authors and were not OA.

Discussion

The opt-in rates (figure 1) demonstrate significant OA publishing uptake for both agreements. Although the overall opt-in rate for the first year of the Wiley agreement was higher than that for the two-year

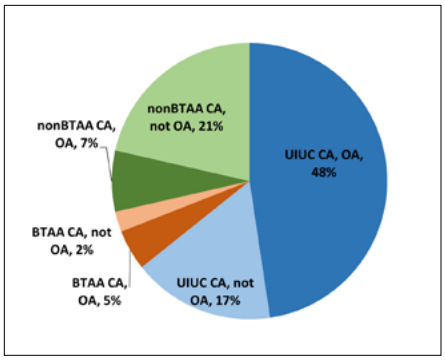

Figure 11. Cambridge pilot period articles by corresponding author and open access status, 2021.

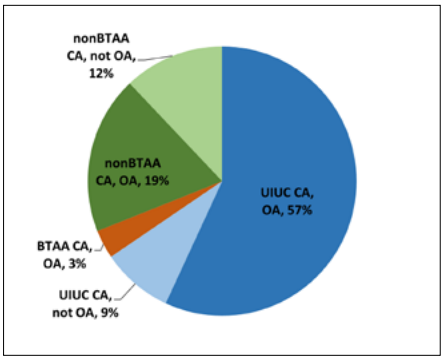

Figure 12. Cambridge pilot period articles by corresponding author and open access status, 2022.

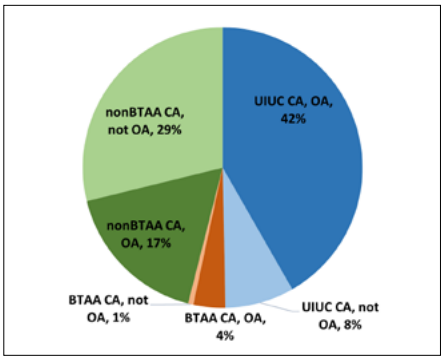

Figure 13. Wiley pilot period articles by corresponding author and open access status, February 1, 2022–December 31, 2022.

period for Cambridge, the year-by-year numbers show a substantial increase between year one and year two, with the second year in fact exceeding the first year of the Wiley agreement. Differences between the two publishers are notable in explaining the differences in opt-in rates. For example, Cambridge switched from a default opt-out to a default opt-in model late in the first year and, more importantly, had a much longer eligibility period for published articles to retroactively opt back in. Cambridge corresponding authors could opt back in as late as the end of March of the year following the year the article was accepted. Wiley articles only had the period between acceptance and publication, which was typically around a month. This feature of the agreement has since been changed to lengthen the retroactive eligibility period, and Wiley has also made the process for doing so easier. The changes were due in part to feedback from library consortium members including our university.

Figure 10 also shows how the degree of OA output from university publications with these two publishers, including articles outside the agreement scope, increased at a much higher rate as these agreements came into effect: OA articles edged upwards as a proportion of total articles in the year or years prior to the agreements but leapt by around 40 percent in the first year of each agreement, and by another 25 percent in the second year of the agreement in the case of Cambridge. Figures 11, 12, and 13 demonstrate the relation of that growth to the location of corresponding authors regardless of institution. Figures 11 and 12 suggest not just the increased uptake of the Cambridge agreement in the second year (with all relevant articles with co-authors based at another consortium institution opting in) but a steep drop in non-OA co-authored articles with corresponding authors from outside the consortium in the second year. While it is a limitation of the study that we do not know which of these non-consortium articles may have been eligible under similar agreements at other institutions and consortia rather than being paid for by APCs, this is the likely inference and if true, further demonstrates the network effects these agreements can have across institutions—an important factor in whether such agreements can achieve their goal of transitioning content to OA at scale. The fact that articles with corresponding authors at non-consortial institutions have the highest rates of non-OA articles confirms the importance of these agreements in moving the needle at publishers with medium-to-large journal collections.

Opt-in rates by college—and by department within larger colleges—for the Cambridge agreement (figures 2–4) and the Wiley agreement (figures 5–7) do not suggest disciplinary differences in opt-in rates. Indeed, there was not consistency across the two agreements in terms of disciplines that opted out. For example, in the Cambridge agreement one of the highest opt-out rates came from Mechanical Science and Engineering, which had a very low opt-out rate for the Wiley agreement; the reverse was true for Civil and Environmental Engineering. Although it may be true that humanists have expressed more skepticism about OA, the actual opt-in behavior when cost barriers are eliminated appears, locally, to be negligible. The uptake does not mean that scholars have no concerns about the specific financial models involved in open publishing or sustainability, but these do not equate with an unwillingness to publish OA. In other words, it is important for studies exploring disciplinary differences in OA publishing not to conflate willingness to publish OA with the acceptance of payment-based OA models, or with lack of critiques of specific OA models. Such studies should account for the various structural challenges faced in specific publishing communities such as those outlined in Severin et al.'s description of the barriers facing OA in the humanities.[20]

Figures 8 and 9 likewise show little reason to suspect impact of author seniority on opt-in rates. In the case of the Cambridge agreement, the proportion of corresponding authors opting in was consistent across career phase. In the case of Wiley, assistant professors had higher opt-in rates than either their senior or junior counterparts. These data do not suggest junior scholars are more cautious about OA publishing than senior scholars. Additionally, the slightly lower rate of opting out among senior faculty publishing in Wiley journals is so small that it does not suggest conservativism among senior scholars. Rather, what is evident is that as recognizable publishing entities flip to OA models that do not charge authors, researchers are happy to make the content available. Anecdotally, we have heard far fewer statements from local researchers suggesting they think OA journals are inherently lower quality or predatory—and indeed, it is hard to see how that idea could flourish with widespread conversions to OA and increasingly visible hybrid OA opportunities in well-established journals across the disciplines.

The primary limitations of this study are that it is focused on two journal publishers at a single institution over a limited time period. Although the results suggest broad success of the agreements locally and the importance of similar agreements within and beyond the consortium for co-authored output, it does not mean these agreements are without risk or that the APC model, even when funded by the library, is necessarily favored by scholars. Indeed, local participation in a recent Ithaka faculty survey indicated strong support and preference for subscribe to open models where libraries directly support diamond OA infrastructure and journals rather than paying per-article costs.[21]

When libraries enter into these agreements, it is important that they work with journal publishers to improve opt-in messaging clarity, initial opt-in workflows, and retrospective opt-in options, and that publisher partners be willing to hear the feedback. Workflows and uptake with both publishers have improved since the beginning of the two agreements, and the difference can be seen particularly in the first and second year of the Cambridge agreement. Changes to the Wiley agreement to allow a longer window for retroactive opt-ins will likely help. Although the opt-out rate decreased during the pilots,

there is an opportunity to identify and understand reasons behind opt-out decisions beyond discipline and seniority. These reasons may be workflow based, stem from a lack of understanding, or be due to a variety of other reasons.

Our experience has been that authors are very sensitive to requirements for direct payment; shared payment models (where an APC is split between the library and the researcher) or APC discount models have not driven interest. To this extent, discounts offered by publishers for gold OA journals in addition to waiver programs for hybrid journals may not produce much interest in gold journals. It is not clear from the Cambridge second year that the waiver program itself pushed researchers to submit to more Cambridge journals. We consider it most likely that researchers will continue to make journal choices based on journal reputation and—in disciplines where they are used–impact metrics, despite being happy to take advantage of the library's OA agreement and its APC waivers. As more publishers adopt transformative agreements, more research will end up OA, but the agreements may not push researchers to those publishers from journals without such agreements barring limited cases of funder requirements.

Conclusion

This study documents the broad success of two transformative agreement pilots at a large research university and argues that the growth of such agreements could help transition a broad proportion of research to OA at the university and within the consortium. The success of these agreements was true across disciplines and stages of career seniority. The results do not necessarily mean, however, that such agreements are the only or preferred model for OA. Some librarians, funders, and even publishers themselves have suggested that under-resourced institutions as well as institutions in the lower income countries may end up unable to participate, with transformative agreements extending a problem with the APC of shifting the cost of publishing from readers to authors.[22] The impact for some under-resourced institutions may be offset by their inclusion in consortial negotiations. A great deal of the feasibility and burden depends on the model of the particular publisher, however, and in some cases costs may go down for low-research institutions with the burden going up for research intensive institutions, as with the ACM model introduced after the period of this study.

Further analysis of the uptake and impact of transformative agreements at a broader scale in a US context, where there are not national-level agreements in place, would be useful. Additionally, as libraries develop approaches to OA funding that supports various models including transformative agreements and direct funding of OA journals or infrastructure, ways to analyze the impact of other forms of OA support will also be important. Such analysis would need to balance benefits to specific institutions with the general benefit to the scholarly communications ecosystem that may have important but more indirect implications for local researchers.

Acknowledgments

The authors thank Mark Zulauf for providing publication reports from Illinois Experts. Thanks to the reviewers and editors of *LRTS* for comments that helped to improve the article.

Notes

1. "Transformative Agreements," ESAC, accessed February 23, 2024, https://esac-initiative.org/about/transformative-agreements/.
2. See, for example, the discussion of offset agreements in Lisa Olsson et al., "Evaluation of Offset Agreements—Report 3 : Springer Compact" (Kungliga biblioteket, 2018), https://urn.kb.se/resolve?urn=urn:nbn:se:hb:diva-15502; Ralf Schimmer, Kai Karin Geschuhn, and Andreas Vogler, "Disrupting the Subscription Journals' Business Model for the Necessary Large-Scale Transformation to Open Access: A Max Planck Digital Library Open Access Policy White Paper," April 28, 2015, https://doi.org/10.17617/1.3.
3. William H. Mischo and Thomas H. Teper. "The Shadow Acquisitions Budget: APCs and Open Access Publications at a Research University" (presented at the Coalition for Networked Information Fall Meeting, Washington, DC, December 10, 2018), https://hdl.handle.net/2142/102278.
4. Percentages calculated based on raw numbers provided in Olsson et al., "Evaluation of Offset Agreements," 10.
5. Mafalda Marques and Graham Stone, "Transitioning to Open Access: An Evaluation of the UK Springer Compact Agreement Pilot 2016–2018," *College & Research Libraries* 81, no. 6 (September 2020): 913–27, https://doi.org/10.5860/crl.81.6.913.
6. Rita Pinhasi, Lothar Hölbling, and Brigitte Kromp, "Austrian Transition to Open Access: A Collaborative Approach," *Insights: The UKSG Journal* 34, no. 1 (January 2021): 1–12, https://doi.org/10.1629/uksg.561.
7. Christian Gumpenberger, Lothar Hölbling, and Juan Ignacio Gorraiz, "On the Issues of a 'Corresponding Author' Field-Based Monitoring Approach for Gold Open Access Publications and Derivative Cost Calculations," *Frontiers in Research Metrics and Analytics* 3 (February 5, 2018): 1, https://doi.org/10.3389/frma.2018.00001; Rita Pinhasi et al., "The Weakest Link—Workflows in Open Access Agreements: The Experience of the Vienna University Library and Recommendations for Future Negotiations," *Insights: The UKSG Journal* 31 (March 2018): 1–12, https://doi.org/10.1629/uksg.419.
8. Mandy Hill, "Transformative Agreements at Cambridge University Press: A Stepping Stone Not a Solution," *LOGOS: The Journal of the World Book Community* 32, no. 4 (November 2021): 15–20, https://doi.org/10.1163/18784712-03104024.
9. Wilhelm Widmark. "Will There Be Any Transformation or Are We Stuck with the Transformative Agreements? | UKSG," *UKSG eNews*, November 26, 2021, https://www.uksg.org/newsletter/uksg-enews-503/will-there-be-any-transformation-or-are-we-stuck-transformative.
10. Ángel Borrego, Lluís Anglada, and Ernest Abadal, "Transformative Agreements: Do They Pave the Way to Open Access?" *Learned Publishing* 34, no. 2 (April 2021): 216–32, https://doi.org/10.1002/leap.1347.
11. Vladimir M. Moskovkin, Tatyana V. Saprykina, and Igor V. Boichuk, "Transformative Agreements in the Development of Open Access," *Journal of Electronic Resources Librarianship* 34, no. 3 (July 2022): 165–207, https://doi.org/10.1080/1941126X.2022.2099000.

12. Robert Kiley, "Transformative Journals: Analysis from the 2022 Reports," *sOApbox*, June 20, 2023, https://www.coalition-s.org/blog/transformative-journals-analysis-from-the-2022-reports/; Kiley, "Transformative Journals: Analysis from the 2023 Reports," *sOApbox*, June 28, 2024, https://www.coalition-s.org/blog/transformative-journals-analysis-from-the-2023-reports/.
13. Niels Taubert et al., "Understanding Differences of the OA Uptake within the German University Landscape (2010–2020): Part 1—Journal-Based OA," *Scientometrics* 128, no. 6 (June 2023): 3601–25, https://doi.org/10.1007/s11192-023-04716-3.
14. Jennifer Rowley et al., "Academics' Behaviors and Attitudes towards Open Access Publishing in Scholarly Journals," *Journal of the Association for Information Science and Technology* 68, no. 5 (2017): 1201–11, https://doi.org/10.1002/asi.23710.
15. Alicia Wise and Lorraine Estelle, "How Society Publishers Can Accelerate Their Transition to Open Access and Align with Plan S," *Learned Publishing* 33, no. 1 (January 2020): 14–27, https://doi.org/10.1002/leap.1272.
16. Yimei Zhu, "Who Support Open Access Publishing? Gender, Discipline, Seniority and Other Factors Associated with Academics' OA Practice," *Scientometrics* 111, no. 2 (May 1, 2017): 557–79, https://doi.org/10.1007/s11192-017-2316-z.
17. Carol Tenopir et al., "Imagining a Gold Open Access Future: Attitudes, Behaviors, and Funding Scenarios among Authors of Academic Scholarship," *College & Research Libraries* 78, no. 6 (August 31, 2017), https://doi.org/10.5860/crl.78.6.824; Elizabeth D. Dalton, Carol Tenopir, and Bo-Christer Björk, "Attitudes of North American Academics toward Open Access Scholarly Journals," *portal: Libraries and the Academy* 20, no. 1 (2020): 73–100.
18. Anna Severin et al., "Discipline-Specific Open Access Publishing Practices and Barriers to Change: An Evidence-Based Review," *F1000Research* 7 (March 26, 2020): 1925, https://doi.org/10.12688/f1000research.17328.2.
19. Philips Ayeni and Rebekah Willson, "Investigating Open Access Publishing Practices of Early and Mid-Career Researchers in Humanities and Social Sciences Disciplines," *Proceedings of the Association for Information Science & Technology* 59, no. 1 (October 2022): 398–403, https://doi.org/10.1002/pra2.641.
20. Severin et al., "Discipline-Specific Open Access Publishing Practices," 16.
21. Ithaka S+R, "University of Illinois Urbana-Champaign Ithaka S+R Faculty Survey: Report of Findings," 2023, https://hdl.handle.net/2142/124066.
22. Hill, "Transformative Agreements at Cambridge University Press," 18; Reggie Raju et al., "An Authentic Flip Subscription Model for Africa: Library as Publisher Service," *Library Management* 41, no. 6/7 (2020): 369–81, https://doi.org/10.1108/LM-03-2020-0054; Ashley Farley et al., "Transformative Agreements: Six Myths, Busted," *College & Research Libraries News* 82, no. 7 (August 7, 2021): 298–301, https://doi.org/10.5860/crln.82.7.298.