Who Publishes Open Access?

Marijke Breuning, University of North Texas, USA Seyma Akyol, Mercyhurst University, USA

Open access (OA) publishing makes scholarship more accessible to readers but also presents additional hurdles for authors. This article examines determinants of OA publishing in well-respected, subscription-based journals. We find that research funding provides the strongest explanation for OA publishing, although various aspects of authorship and an author's affiliation with a European versus a US institution also matter. We discuss the implications of our findings for publishing in scholarly journals in political science.

any academic publishers now offer an open access (OA) option for articles that appear in their traditional subscription-based journals, employing a "hybrid" format.1 For scholars, OA has two sides. As readers of academic publications, OA enhances access. However, as authors, scholars must confront the cost of publishing OA to reap the benefits of heightened visibility and accessibility.

To estimate the likely impact of the shift toward OA publishing on scholars-as-producers of academic journal articles, we investigated potential explanations for the decision to publish OA. We sought to determine what differentiates scholars who select the OA option from those who do not, assuming that those who have the resources will prefer the OA option to make their work more visible and accessible, anticipating more citations. For whom does OA publishing represent an opportunity? For whom does it represent an additional hurdle?

OPEN ACCESS AND ITS IMPACT ON ARTICLE PUBLISHING

OA is a relatively new publication model that makes articles in scholarly journals freely available to anyone who wants to read them. This type of OA, more accurately called "gold OA," is especially helpful in providing access to scholars whose institutions cannot sustain extensive library holdings (Atchison and Bull 2015; Calise, de Rosa, and Fernández-i-Marín 2010; Gleditsch 2012; Jisc 2019; Mehlum 2012; Nentwich 2008; Thompson 2012).2

Publishers cover the costs of publishing OA by collecting article processing charges (APCs) from the author(s), the research funder, or another entity (Jisc 2019). Some professional societies (partially) subsidize APCs for members, or a foundation may support the journal's operations (Morgan, Campbell, and Teleen 2012). In contrast, in the traditional publication model, publishers charge annual subscription fees to individual scholars and

Corresponding author: Marijke Breuning is regents professor at the University of North Texas. She can be reached at marijke.breuning@unt.edu.

Seyma Akyol is assistant professor at Mercyhurst University. She can be reached at sakyol@ mercyhurst.edu

libraries. The move to OA shifts the costs associated with publishing from subscribers to authors, unless the latter benefit from a transformative agreement between the publisher and their institution. Thus, OA benefits scholars-as-consumers but is more controversial for scholars-as-producers.

Journals that traditionally used a subscription-based format increasingly also now offer an OA option. Essentially, many have become hybrid journals (Atchison and Bull 2015; Calise, de Rosa, and Fernández-i-Marín 2010). The reasons for the shift include rising subscription prices, proliferation of journals, and distortions in library holdings due to subscription bundling (Atchison and Bull 2015). The broader accessibility of OA articles resonates with (public) funders of research (Gleditsch 2012; Jisc 2019). The contention that OA benefits both scholars and society at large is popular in Europe, where universities, funders, and governments in European Union countries had set a target date of 2020 to mandate OA (Berlin Declaration 2003; Plan S 2022). This goal was not met, but OA publishing is gaining ground.

How OA will reshape academic publishing in political science is not yet well understood. Evidence reveals that OA articles gain more visibility and citations (Antelman 2004; Atchison and Bull 2015). However, the APCs constitute an impediment to publishing OA for authors who do not have research funding, access to institutional support, or a transformative agreement between their institution and the journal's publisher. Transformative agreements vary. A common type is a "read-and-publish agreement" between a publisher and a university that supports access to journal content and covers APCs for scholars affiliated with the institution. Currently, such agreements are more common in Europe (ESAC n.d.). In the United States, most of these agreements are with research-intensive universities—and the percentage of such institutions that have agreements varies substantially among academic publishers (see online appendix A, table 1).

The cost of OA publishing also varies. The APCs charged by the journals investigated in our study range from \$2,500 for Journal of Politics to \$3,956 for International Studies Quarterly (see online appendix A, table 2). This cost exceeds not only the annual conference support that many scholars receive from their institution; it also exceeds the APCs of fully OA journals such as *Research and Politics* and *Global Studies Quarterly*, which charge \$800 and \$1,957 (discounted to \$1,565 for International Studies

absolutely mandates gold OA as a condition of publication" (University of Chicago Press 2022). The unit of analysis for our study is the research article. For each article, we recorded

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Association members), respectively. Therefore, OA publishing in hybrid journals is unattainable for scholars—especially in the United States—whose research is not funded, whose institution does not cover APCs (or lack a transformative agreement with the journal's publisher), or who cannot qualify for a discounted rate. We expect that OA publishing in hybrid journals will reinforce existing inequalities in the profession. This will affect scholars at less well-resourced or less research-intensive institutions as well as women, who more often are affiliated with less research-intensive institutions (Breuning and Sanders 2007; Fattore 2019; Hancock, Baum, and Breuning 2013).

In summary, we expect that articles that report on funded research more often will be published OA than nonfunded research. Women may be less likely, but teams of authors more likely, to publish OA because this increases the chance that one author's institution has a transformative agreement. Scholars affiliated with highly ranked (and well-endowed) institutions will be more likely to publish OA, as will Europe-based scholars (compared to US-based scholars).

DESIGN OF THIS STUDY

This article empirically investigates what differentiates articles (and the scholars who authored them) that are published OA from those that are published conventionally in hybrid journals. We manually coded all research articles published in the 2020 volumes of 12 well-respected journals: American Journal of Political Science (AJPS), American Political Science Review (APSR), British Journal of Political Science (BJPS), Comparative Politics (CP), Comparative Political Studies (CPS), European Journal of International Relations (EJIR), European Journal of Political Research (EJPR), International Organization (IO), International Studies Quarterly (ISQ), Journal of Conflict Resolution (JCR), Journal of Politics (JOP), and World Politics (WP) (Breuning and Akyol 2024). BJPS, EJIR, and EJPR are Europe-based; the remaining journals are based in the United States. We excluded CP and WP from our analyses because neither journal offers an OA option. However, including them would yield similar results, with marginal changes to the odds ratios (see online appendix C, tables 1-4).

We focused on 2020 because it was set as the target year for implementing OA in Europe (Berlin Declaration 2003; Plan S 2022). Although the data are cross-sectional, we contextualized our findings with limited data on the growing prevalence of OA in subsequent years (see online appendix B).

All of the journals in our study were established as subscription-based journals. They now offer the OA option, which makes them hybrid journals: they simultaneously maintain their subscription-based model and offer authors the option of paying an APC to make their work freely available to anyone who wants to access it. Nine of the 10 journals make OA available to all authors; however, *JOP*'s publisher restricts it to authors "with research funding from an organization that

the journal title, volume, and issue and whether it was published OA. We recorded the family names of all authors, their institutional affiliation, and that institution's geographic location. We also coded the gender of each author. This allowed us to construct several authorship indicators, including whether an article was authored by a single female or male author, by a single- or mixed-gender team, and the size of the team. The institutional affiliation identified authors as Europe- or US-based. Furthermore, we identified the ranking of each author's university in the *US News & World Report*'s "Best Global Universities Rankings" because the Carnegie Classification of Institutions of Higher Education includes only US institutions. We used the highest ranked institution for coauthored articles and consolidated this into ordinal categories (see the Codebook in online appendix D).

We collected information on whether the research was funded, which is located in different places in the various journals. We recorded all of the funders that the author(s) listed and then created two versions of the variable, which we named "funded1" and "funded2." The first version counted all of the articles that include mention of any type of funding, whether from the author's institution or an external funder. The second version was more restrictive and counted only cases of funding from outside of the author's(s') institution. We used this more-restrictive version in the models reported in our article because external funders are more likely to either mandate or enable OA publishing. Analyses using the broader definition can be found in the robustness checks (see online appendix A, table 3).

We coded whether the journal is Europe- or US-based, depending on where the journal was founded and its association with a professional society (if any). Editorships have become increasingly international. Therefore, we did not use the location of the current editorial team to determine a journal's base.

Finally, we coded the subfield of political science for each article, using the abstract and keywords or by reading the article. We used a similar strategy to code the methodology used, consistently coding the first method mentioned if more than one was used. We then created the methodology dummy, which distinguishes quantitative versus other scholarship (see the Codebook in online appendix D).

The following section presents our findings. Table 1 is a summary of statistics for the variables used in the logistic regression models.

FINDINGS

Which authors take advantage of the option to publish OA when journals move to hybrid formats? As shown in figure 1, the proportion of articles published OA in 2020 averaged about 13%. The figure also shows that there was wide variation between the journals in our study: *EJPR* published almost 35% of its articles OA versus *IO* and *JOP* at slightly more than 4%.

Variable Name	e Variable Definition (Codebook Name)		Mean	St Dev	Min	Max
Open Access	Article published open access (openaccess)	640	0.131	0.338	0	1
Gender Authorship	Male single author or team; mixed-gender team, female single author or team (teamgender2t)	640	0.666	0.784	0	2
Gender Authorship2	Male single author; male team; mixed-gender team; female team; female single author (teamgender2)	640	1.536	1.300	0	4
Authorship	Single author; same-gender team; mixed-gender team (teamgender3)	640	0.883	0.809	0	2
Number of Authors	Count of the number of authors (aunumber)	640	1.941	0.996	1	9
Funded2	Externally funded research (funded2)	640	0.317	0.466	0	1
Funded1	Internally and externally funded research (funded1)	640	0.433	0.496	0	1
Journal Dummy	US-based versus European-based journals (eurdummy)	640	0.248	0.432	0	1
Highest Ranking	Ordinalized global ranking of universities, based on highest ranking university affiliation of coauthors (highrankord)	640	2.072	0.922	0	3
Subfield	American; comparative; international relations; normative theory; methods; other (field)	640	2.322	7.89	1	5
Methodology	Quantitative analysis; other (method2)	640	0.780	0.415	0	1
One Author European	One author affiliated with European institution (oneeurauthor)	640	0.408	0.492	0	1
All Authors European	All authors affiliated with European institution (alleurauthor)	640	0.288	0.453	0	1
All Authors US	All authors affiliated with US institution (allusauthor)	640	0.497	0.500	0	1

Our analysis of data for 2020 reflects which scholars most easily can take advantage of OA. In subsequent years, the proportion of OA articles in these journals has grown, as shown by our limited coding of the proportion of OA articles in the third issue for 2020– 2023 of the same 10 journals (see figure 1 and table 1 in online appendix B). Publishers now advertise the OA option quite prominently, but many scholars still do not have access to transformative agreements or other funding sources.

To determine which authors choose OA, we ran logistic regression models, which were appropriate for our binary dependent variable. We evaluated our models for multicollinearity, using the variance inflation factor (VIF) test. We present our main authorship variables in separate models due to the identified collinearity among them. The mean VIF score for each model is reported in the bottom row of all tables. All scores are well within acceptable limits; the highest score for an individual variable was 1.23. Therefore, none of the models are distorted by multicollinearity. That is, our independent variables are sufficiently independent of one another to not confound the results.

Table 2 reports results for nine models that differ in their measurement of authorship and author location. The strongest predictors of OA publication were whether the research was funded and had a European author(s). Depending on the model, funding renders it between 2.7 and 3.3 times more likely that an article is published OA. This indicates that funding has a substantial impact on the decision to shift an accepted article from the

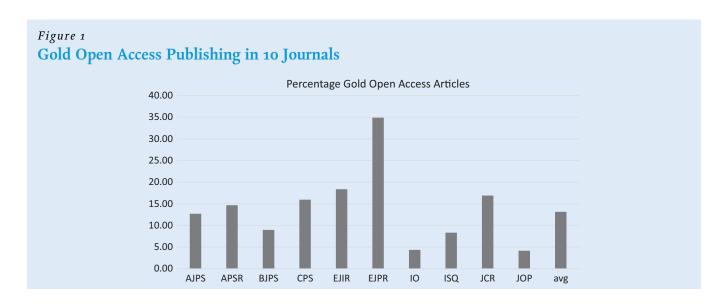


Table 2 Which Articles Are Published Open Access?

Logistic Regression Models	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Dependent Variable: Open Access (1=Yes; 0=No)	Odds Ratio (Robust Standard Error)								
Gender Authorship	1.195			1.155			1.239		
(0=Male Single/Team; 1=Mixed-Gender Team, 2=Female Single/Team)	(0.183)			(0.168)			(0.195)		
Authorship (0=Single Author; 1=Same-Gender Team;		1.515*			1.702***			1.455*	
2=Mixed-Gender Team)		(0.259)			(0.283)			(0.251)	
Number of Authors (1-9)			1.321**			1.491***			1.279*
			(0.150)			(0.173)			(0.148)
Funded2 (Externally Funded Research; 1=Yes; 0=No)	2.990***	2.907***	2.803***	3.279***	3.053***	2.867***	2.780***	2.737***	2.666**
	(0.762)	(0.744)	(0.729)	(0.837)	(0.784)	(0.749)	(0.718)	(0.711)	(0.698)
Journal Dummy (0=US-Based; 1=European-Based)	1.182	1.210	1.190	1.245	1.217	1.175	1.179	1.212	1.207
	(0.329)	(0.335)	(0.334)	(0.366)	(0.356)	(0.356)	(0.323)	(0.330)	(0.331)
Highest Ranking (Ordinal: 3=Top Third; 2=Middle Third;	0.955	0.882	0.885	0.984	0.910	0.907	0.995	0.922	0.927
1=Lower Third; 0=Not Listed)	(0.137)	(0.134)	(0.133)	(0.137)	(0.135)	(0.133)	(0.216)	(0.137)	(0.137)
Subfield (1=American; 2=Comparative; 3=International	0.943	0.959	0.978	0.999	0.999	1.024	0.882	0.904	0.917
Relations; 4=Normative Theory; 5=Methods)	(0.221)	(0.219)	(0.222)	(0.208)	(0.206)	(0.208)	(0.346)	(0.215)	(0.137)
Methodology (1=Quantitative; 0=Other)	0.959	0.795	0.790	0.997	0.777	0.759	0.987	0.915	0.817
	(0.335)	(0.275)	(0.279)	(0.346)	(0.266)	(0.265)	(0.346)	(0.283)	(0.290)
One Author European (1=Yes; 0=No)	3.795***	3.509***	3.450***						
	(1.093)	(0.989)	(0.979)						
All Authors European (1=Yes; 0=No)				2.379**	2.603***	2.645***			
				(0.672)	(0.7.6)	(0.766)			
All Authors US (1=Yes; 0=No)							0.199***	0.226***	0.228**
							(0.065)	(0.071)	(0.073)
N	640	640	640	640	640	640	640	640	640
Wald Chi-Square	57.52***	62.05***	63.16***	49.21***	59.06***	58.41***	59.48***	61.42***	62.85***
Pseudo R ²	0.125	0.135	0.133	0.095	0.115	0.115	0.134	0.141	0.139
Log Pseudolikelihood	-217.644	-215.134	-215.665	-225.062	-220.205	-220.238	-215.433	-213.832	-214.300
VIF (Mean)	1.10	1.13	1.14	1.12	1.15	1.16	1.11	1.14	1.15

traditional publication model to OA. These analyses include only external funding. The results for the broader measure of funding (i.e., both internal and external funding) are similar but with a lower upper limit: the substantive effect of all funding sources makes publishing OA between 2.7 and 3.0 times more likely (see online appendix A, table 3). The small differences are likely attributable to the inclusion in this broader measure of the funding of (1) fellowships that provide salary support; and (2) small grants provided by the authors' institutions for fieldwork, surveys, and other data acquisition. These types of support are important but cannot offset APCs. However, a small proportion of internal funding supports OA publishing.

Geography also matters. If a single author or one of a team is based in Europe, it is 3.5 to 3.8 times more likely that an article is published OA (see table 2, models 1–3). If all authors are Europe-based, the result is less strong, rendering OA publishing between 2.4 and 2.6 times more likely (see table 2, models 4–6); when all authors are US-based, it is the inverse, making OA publishing about 80% *less* likely (see table 2, models 7–9). Using the broader definition of funding yields somewhat stronger substantive effects (see online appendix A, table 3). However, whether the *journal's* base is in Europe or in the United States does not matter (see the

statistically significant in any of the models (see table 2; see also online appendix A, table 3). Before concluding that institutional affiliation did not matter, we noted that (1) the global ranking of universities that we used is a relatively blunt instrument, describing the institution's prestige rather than that of the political science department; and (2) scholars affiliated with researchintensive universities were overrepresented among the authors of articles in our study. Of the 640 articles, only 44 (or 6.4%) did not have at least one author who was affiliated with an institution included in the global ranking. Therefore, our findings reflect the propensity of scholars at elite universities—who are most likely to have funding or access to a transformative agreement—to publish OA. There were too few research-active scholars at teaching-focused institutions in our dataset to determine how likely they would (be able to) select the OA option. However, transformative agreements in the United States are overwhelmingly with research-intensive universities, and the percentage of these institutions that have an agreement varies significantly among academic publishers (see online appendix A, table 1).

Finally, the subfield and methodology variables are never statistically significant. Neither serves to distinguish the likeli-

...funding has a substantial impact on the decision to shift an accepted article from the traditional publication model to OA.

journal dummy, all models, in table 2; see also online appendix A, table 3).

The evidence for authorship is mixed. We include measures for the number of authors and the authors' gender. Coauthorship increases the chances that at least one author has access to funding for OA publishing. Mixed-gender teams are the largest category of authorship, leading us to question if the size of the team or its gender composition alone influence whether an article is published OA. We tested this in two ways: (1) authorship differentiates among single authors (either gender), same-gender teams, and mixed-gender teams (see models 2, 5, and 8 in table 2); and (2) number of authors is a simple count of the number of authors (see models 3, 6, and 9 in table 2).³ Both variables offer statistically significant explanations for OA publishing, but the effect was smaller than for

hood that an article is published OA. We discuss the implications of these findings in the following section.

IMPLICATIONS

Who can afford to publish OA in traditional, subscription-based journals that offer this option? The shift to OA publishing is evolving rapidly. Therefore, we contextualized our findings, which were based on 2020 data, with limited information on subsequent years.

First, we find that articles reporting on funded research are more likely to be published OA. This is not surprising. Funding enables—and sometimes requires—OA publishing. However, this means that scholars with funded research have the additional advantage of making their work more visible and accessi-

...access to OA for scholars-as-producers requires more attention: the pitfalls have not been sufficiently recognized.

funding. Mixed-gender teams and larger teams render it between 1.5–1.7 and 1.3–1.5 times, respectively, more likely that an article is published OA. The substantive effects were marginally stronger when using the broader definition of funding (see online appendix A, table 3). However, the gender composition of the team did not influence the decision to publish OA (see table 2, models 1, 4, and 7; see also online appendix A, table 3). This remains true when we used a more fine-grained definition of author gender composition (see online appendix A, table 4).

The prestige of the institutional affiliation (based on the highest-ranked institution for coauthored papers) is not

ble than other scholars, unless there is a transformative agreement in place.

Second, mixed-gender and larger teams of authors are associated with a greater likelihood that the article is published OA. Gender alone is not statistically significant; however, larger teams are more likely to be mixed-gender, and larger teams are more likely to form around (larger) grants. Team size and funding have independent effects on publishing OA because the results for the authorship and funding variables were not distorted by collinearity (as indicated by the low VIF scores).

Third, the presence of one author affiliated with a European institution was a strong predictor of OA publishing—but not all US-based scholars have equal access to such partnerships. Those who do have access, share in the benefit from the widespread European investment in transformative agreements (ESAC n.d.). Conversely, a single author or team that is fully US-based is significantly *less* likely to publish OA. This reflects that, in the United States, access to OA publishing depends on the (financial) decisions of individual universities (and, on occasion, consortia) to invest in transformative agreements—and these may focus on only selected publishers. In 2022, 185—or slightly less than 40%—research-intensive universities had such an agreement with Cambridge University Press and far fewer with other publishers (see online appendix A, table 1) (ESAC n.d.).

Less research-intensive universities in the United States were even less likely to have invested in transformative agreements (ESAC n.d.). This creates hurdles to OA publishing for many US scholars, thereby reinforcing existing inequalities. Without broad access to transformative agreements, research grants provide an alternative source for the APCs associated with OA publishing. However, this is unlikely to mitigate existing inequalities because grant funding is not randomly distributed. In addition, reliance on grants may heighten scholars' research focus on their funders' prioritized areas of inquiry—that is, for those who successfully can obtain grants.

Simultaneously, publishers increasingly advertise the OA option prominently on their website and as part of the article-submission process. The journals investigated in this study have experienced a steep increase in OA publishing since 2020, when slightly more than 13% of articles were published OA. We checked the third issue of 2021–2023 for each journal; we also included the data for the third issue of each journal for 2020, which had a slightly higher average of 14% (compared to the full volume year). Although growth was not linear and there was substantial variation around the mean, by 2023, 50% of articles were published OA (see figure 1 and table 1 in online appendix B).

Because of this rapid increase in OA publishing, it is important to better understand how funding and transformative agreements shape access and how this reinforces and/or reshapes inequalities for scholars-as-producers. OA has been promoted as providing better access for scholars-as-consumers and the general public. Although it achieves this, access to OA for scholars-as-producers requires more attention: the pitfalls have not been sufficiently recognized.

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DATA AVAILABILITY STATEMENT

Research documentation and data that support the findings of this study are openly available at the *PS: Political Science & Politics* Harvard Dataverse at https://doi.org/10.7910/DVN/GGPPNL.

SUPPLEMENTARY MATERIAL

To view supplementary material for this article, please visit http://doi.org/10.1017/S1049096524000106.

CONFLICTS OF INTEREST

The authors declare that there are no ethical issues or conflicts of interest in this research.

NOTES

- Many academic publishers now also offer completely OA journals; however, these journals were not the focus of this study.
- 2. See Jisc (2019) for a primer on different types of OA.
- We also created a version of this variable that combined four and more authors as "4" because there are relatively few very large teams. However, this variable did not change the results (not shown).

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