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Inequity, precarity, and disparity: Exploring systemic and institutional barriers in open access publishing

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Abstract

Despite increasing advocacy for open access (OA), its uptake in some disciplines has remained low. Existing studies have linked the low uptake of OA in the humanities and social sciences (HSS) to disciplinary norms, limited funding for article processing charges (APCs), and researchers' preferences. However, there is a growing concern about inequity in the scholarly communication landscape, as OA publishing has remained unaffordable to many researchers. This study investigates systemic and institutional barriers to OA publishing in Canada, as well as strategies for improving the uptake of and equity in OA publishing. Using semi-structured interviews, qualitative data was collected from 20 professors from the HSS disciplines of research-intensive universities in the country. Data was analyzed using the NVivo software, following the reflexive thematic analysis approach. Findings revealed five systemic and institutional barriers to OA publishing: (1) unaffordable APCs; (2) precarious career stage and tenure requirements; (3) unequal privileges; (4) gender; and (5) conflicting and unsupportive institutional OA policies. We conclude that there needs to be a concerted effort in promoting and funding viable and sustainable OA models, which removes the financial burden of OA publishing from researchers. There is also an increasing need to promote OA culture within academia and provide institutional support for OA publishing. Notably, the model of academic scholarship that places prominence on journal metrics for tenure and promotion needs to be reformed. Some recommendations for reducing systemic and institutional barriers to OA publishing are provided.

Keywords

Institutional barriers, open access, publishing practices, scholarly communication, systemic barriers

Introduction

Open access (OA) to research outputs is fundamental to promoting equity of access to scientific information and knowledge, advancing the frontiers of knowledge, and solving societal problems (Suber, 2012; Swan, 2012). Several definitions of OA have been proposed in literature, many dating back to over two decades, with central focus on ensuring that anyone with access to the internet can access research outputs without the barriers of cost and copyright restrictions (Bjork, 2004 ; Suber, 2003). A more recent study (Severin et al., 2020) defined OA as "scholarly outputs that are free to read online, either on a journal website or through an open repository, and that might or might not be free to reuse" (para. 3). This further suggests that the core ideal of OA publishing is to ensure equitable access to knowledge (Evans, 2012), which includes other researchers, as well as practitioners, policy makers, and the public.

OA is particularly beneficial to researchers as it increases the impact and citation of their research and it serves as a level-playing field for researchers, irrespective

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of their geographical location and resources (Eysenbach, 2006; Ghane et al., 2020; Lewis, 2006; Mikki, 2017). In terms of societal impact of OA, Tennant et al. (2016) shows that it helps to advance citizen science initiatives. As such, initiatives to ensure immediate access to research outputs have been implemented across the globe. For instance, in 2015, the three main funding agencies in Canada—Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council of Canada (NSERC) and the Social Sciences and Humanities Research Council of Canada (SSHRC; i.e. the agencies)—introduced an OA policy on immediate availability of research they fund (Hurrell et al., 2017). Other recent efforts include 2018 Plan S OA mandate in Europe (Johnson, 2019), and UNESCO recommendations on open science (UNESCO, 2021), among others.

Equity in scholarly communication has received attention from researchers. In this paper, equity is considered through the lens of Equity Theory (ET), which has been applied in predicting performance level and turnover among managers (e.g. Dansereau et al., 1973). OA publishing could be considered as equitable when researchers are not limited by cost, language barrier, gender disparities, and other factors associated with inequity. As emphasized by UNESCO (2021), open science should be instrumental to ensuring equity, fairness, diversity, and inclusiveness among researchers from developed and developing countries. However, the current models of OA publishing generate inequities among researchers (Gray, 2020; Momeni et al., 2023), thereby working against the ideals of OA. As more institutions in Canada and globally are increasing their diversity, equity, and inclusion commitments, it is also expedient to ensure equity in OA publishing among researchers. This stresses that there is a need to unravel factors responsible for these equity gaps with the hope of reducing systemic and institutional barriers to OA publishing among the researchers.

Research has shown that institutional and systemic factors are profoundly responsible for the low participation and commitment of researchers in OA publishing (Ford and Alemneh, 2024; Kutner, 2020; Kwon, 2022). Systemic and institutional barriers in scholarly communication are caused by institutional factors and expectations, particularly those relating to research production, communication, and evaluation. In a recent study, Ford and Alemneh (2024) argue that the "use of metrics encourages a competitive research culture, encouraging systemic inequalities that suppress the visibility and credibility of outputs by minorities" (para. 6). This suggests that the pursuit of publications in high impact journals to meet the requirements for tenure and promotion could be chiefly responsible for the growing systemic barriers in OA publishing. This is because the highest ranked, most prestigious journals tend to be behind paywalls, or are made OA through the payment of APCs (Brienza, 2012). These journals operate the gold or hybrid OA models.

Gold OA journals require the payment of APCs either by authors or their institutions (Schimmer et al., 2015), while hybrid OA journals are subscription-based, and "offer" authors to disseminate their paper in OA for a fee (Mueller-Langer and Watt, 2014). Diamond OA journals, on the other hand, are generally publicly owned (and subsidized), and are free for both readers and authors. Mega-publishers dominate fully OA models (gold OA) and traditional publishers promote hybrid OA models, where authors can pay to make their articles OA within subscription-based journals. Researchers who want to publish OA but are concerned about journal quality and impact factors tend to favor publishing in hybrid OA journals because of their prestige. In fact, studies have found a correlation between hybrid OA journals and high impact factors (Demeter et al., 2021; Gray, 2020). However, this also means that publishing in either gold or hybrid OA journals requires the payment of APCs, which may be inaccessible to researchers with limited resources, thereby entrenching the inequality of access. Kutner (2020) argues that "researchers from countries in the Global South, such as African and Latin American countries, are challenged by more limited resources for research infrastructure and availability of funding for all phases of the research and publication process" (para. 71). This contributes to inequities in OA publishing, despite the growing interest and support in principle.

Although Canada has several OA mandates from funders and universities, evidence shows that OA publishing practices (e.g. Moskovkin et al., 2022; Paquet et al., 2023; Simard et al., 2022) and compliance to OA publishing mandate (Larivière and Sugimoto, 2018) among Canadian researchers is still low. While there is a growing body of knowledge on OA publishing, particularly in bibliometrics (e.g. Piwowar et al., 2018), studies that collect data directly from researchers are scarce. This limits our understanding of systemic and institutional barriers in OA publishing among researchers. This study aims to fill this gap by collecting qualitative data directly from humanities and social sciences researchers about the factors limiting their OA publishing practices. This aims to answer the following question: What are the systemic and institutional barriers to OA publishing practices among humanities and social sciences researchers (HSS) in Canada? The results obtained are also used to discuss how to improve the uptake of OA publishing in Canada and make it more equitable.

The remainder of this paper is organized as follows: First, we explore and discuss existing studies focusing on the barriers to OA publishing popularly discussed in literature. Next, we discuss the methodological approach to our study, followed by the findings and discussions, which

includes systemic and institutional barriers to OA, as well as recommendations for improving OA uptake and making it more equitable. This paper then highlights some limitations and provides suggestions for future studies.

Literature review

OA has been advocated for and largely accepted as an essential component of the scholarly communication process. However, its uptake and adoption by researchers has been limited by several factors. According to the literature, these are (1) article processing charges, (2) tenure and promotion requirements, (3) negative perceptions and predatory publishing, and (4) inequities in OA publishing.

Article processing charges

One of the frequently discussed limitations to OA publishing in literature is article processing charges (APCs) or publication fees. Gold and hybrid models of OA publishing require APCs to disseminate in OA, with publishers arguing that those fees are necessary to cover peer review management and production and dissemination of articles (Pinfield and Middleton, 2016; Spezi et al., 2017). Such APCs are an increasing part of the revenues of publishers, which therefore generates a growing competition between publishers, and contributes to the rise of predatory publishers (Beall, 2012). Although, authors take ownership of copyrights or otherwise called copyright retention when paying APCs (Nariani and Fernandez, 2012; Park and Qin, 2007), those also promote inequity in OA publishing. APCs transform inequity of access into inequity of contribution. That is, instead of paywalling readers, they are paywalling authors such that only those with grants or from rich institutions can publish in these venues (Alperin, 2022; Parker, 2013). Hence, the payment of APCs has remained inaccessible to many researchers who do not have sufficient funding or those from economically disadvantaged countries from the Global South (Kwon, 2022).

Merga and Mason (2020) found that early career researchers (ECRs) reported challenges in securing funding to pay for APCs. They suggested that institutions and publishers need to consider subsidizing or fully funding ECRs. This was supported by recent studies which found that APCs are a barrier for researchers in low- and middle-income countries (Rodrigues et al., 2022), thereby weakening OA (Alperin, 2022). Parker (2013) argues that "gold model would further entrench divisions between richer and poor institutions and would further institutionalize knowledge production by widening the divide between independent researchers and those affiliated with academic institutions" (para. 3). O'Brien et al. (2019) note that high APCs are a barrier to OA publishing, and they suggested that publishers and editors should help ECRs in their OA publishing efforts. Koong et al. (2023) investigated the factors associated with OA publishing costs in 367 oncology journals. The authors found that APCs were greater in journals with a higher Impact Factor, more citable documents, those originating in North America, and those utilizing the hybrid OA model.

Kwon (2022) reports that an average cost of APCs equal to $2600 USD but it can cost more than an estimated $10,000 USD. Similarly, Larivière and Sugimoto (2018) report that the "cost of publishing in OA journals ranges from less than US$100 to more than $5,000 per article, with dominant publishers such as Elsevier averaging $2612 per paper in article-processing charges and Springer Nature" (para. 12). This makes OA publishing inaccessible and unaffordable to many researchers, particularly early career researchers, as well as equity-deserving researchers in developing countries. Dalton et al. (2020) argue that to "suggest that paying APCs is reasonable is to assume that shifting the cost of publishing onto authors makes sense. For such a shift to be reasonable, it must lie within the perceived realm of possibility" (para. 90). Rodrigues et al. (2022) also found that "APCs represent a major paradox in the dissemination of science, since the authors, their institutions, or funders must pay to make their research freely available" (para. 2). Interestingly, a study found that most OA journals (71%) do not require authors to pay APCs. However, most OA articles are published in the minority journals (58%) which charge APCs (Crawford, 2019). As such APCs continue to serve as a barrier to OA publishing.

Impact of tenure and promotion requirements on OA publishing

Another impediment to OA is the tenure and promotion requirement in higher education institutions, which favor traditional publication outlets. Studies have found that scholars and faculty are afraid that their careers will be negatively affected by publishing articles in OA journals (e.g., Nowick, 2008). For in Nowick (2008) found that 61% of the faculty members they surveyed feared that OA publications would negatively impact their tenure and promotion reviews. Hence, there has been a drawback from some faculty on making their research OA (Cullen and Chawner, 2010, 2011; Dlamini and Snyman, 2017). Researchers often feel pressured to publish in high-impact journals (O'Brien et al., 2019), most of which are traditional journals. As such, the low adoption of OA publishing in most HSS disciplines has been linked to evaluation metrics which recognize top-tier journals (Laakso and Björk, 2022).

Brienza (2012: 166) showed that "promotion is tied to publications in prestigious outlets known for years to publish the most widely regarded, highly cited scholarship, and the vast majority of these have paywalls or suggested

retail prices." The perception that dissemination in OA is at odds with prestigious publication outlets makes it difficult for junior researchers to aim at publishing in OA journals, because they feel they may risk their careers if they boycott the subscription-based outlets (Jamali et al., 2020; Rodriguez-Bravo and Nicholas, 2020). This complexifies the adoption of OA publishing when promotion and reputation of ECRs is determined by whether they publish in traditional high-impact journals that are often not OA.

Most tenure and promotion evaluation requirements put emphasis on the prestige and impact of journals where researchers are publishing, which explains why ECRs are often targeting those venues (Nicholas et al., 2020). However, there is a lack of correlation between the impact of an individual paper and the impact factor of the journal in which it was published (Casadevall and Fang, 2014; Lozano et al., 2012; Rostami-Hodjegan and Tucker, 2001; Tort et al., 2012). This suggests that the impact of research is not necessarily associated with the impact rankings of journals. Given that journal impact factors are influenced by several factors beyond the quality of papers (Larivière and Sugimoto, 2019; Tort et al., 2012), it is a poor tool to assess researchers' performance.

Marcella et al. (2018) decry the use of impact factors as a measure of research quality. As one of their interview participants stressed, "I think it's very similar to a lot of government policies based around metrics and scoring, where the metric becomes more important than the actual thing" (para. 615). Hence, some studies suggested that including institutional policies for OA can help normalize OA publishing within the academia (Zerkee et al., 2021), with libraries communicating these policies or message in a clear and concise manner, without jargon (Dawson, 2018).

Negative perceptions and impact of predatory publishing

There have been several arguments against the ideals of OA publishing, with most discussions centered around the quality of OA publications compared with subscription-based publications. As Parker (2013) pointed out more than a decade ago, the argument regarding the quality OA journals should be taken seriously. He highlights that there is a need to develop evidence-based models of publishing which lead to sustainable high-quality research, which cannot be achieved effectively with the imposition of a universal OA model. One of the major arguments against OA publishing is the rise of predatory publishing, encouraged by the increasing acceptance of OA publishing in academia.

Predatory publishers exploit the gold OA publishing, without providing quality peer-review (Butler, 2013; Lukic et al., 2014), causing major concerns for academics as well as publishers (Padmalochanan, 2019). As Dudley (2021: 1) observes, "the pay-to-publish OA model marginalizes peripheral scholars and incentivizes the development of sub-standard and predatory journals." Authors are often lured through email solicitations, fake editorial board members, fast review process, and quick publication time (Bowman, 2014; Burggren et al., 2018). This suggests that the pay-to-publish gold OA model entrenches the prevalence of low-quality publications from predatory publishers.

Negative perceptions of OA publishing have either been associated with low peer-review quality, or with predatory OA publishing (Beall, 2013; Gross and Ryan, 2015). For instance, Gross and Ryan (2015) found that Australian researchers in arts and humanities perceived OA journals to be of lower quality than their pay-to-read counterparts. In fact, 8% of the respondents believed that OA publications are not peer-reviewed. Furthermore, they reported that 9% of their respondents considered OA journals of lower quality than subscription publications, and 45% were unsure of the quality of OA journals.

In a study of agricultural researchers' attitudes toward OA and data sharing in two US universities, Williams et al. (2019) reported that researchers expressed a lack of trust toward OA publishing and are concerned about the predatory publishers of some OA journals. Greussing et al. (2020) explored the individual and institutional factors that speak both in favor and against OA publishing using qualitative interviews of 42 participants from selected universities. The study showed that while most researchers support the idea of making scientific knowledge freely accessible to everyone, they are hesitant about living this practice by choosing OA journals to publish their own work. Participants perceived APCs and quality issues as the main obstacles to OA publishing.

O'Hanlon et al. (2020) examined the habits and perceptions of OA publishing and public access amongst 296 clinical and research fellows at a US research institution. The authors expressed researchers' hesitation to publish OA due to confusion surrounding legitimate OA and predatory publications. More specifically, some authors perceived OA publications as being "of lower quality," "less prestigious," and "less credible" than publications that were not OA in their specific disciplines. The business model of OA publishing by some journals has led to the proliferation of predatory OA publishing with deceptive practices (Berger and Cirasella, 2015; Burggren et al., 2018), thereby affecting general understanding and acceptance of OA publishing.

However, there is a growing paradigm shift in negative perceptions of OA as scholars are now embracing OA and negotiating for its adoption in their disciplines. In a survey of 134 faculty researchers at United Arab Emirates, Lusk et al. (2023) found that many of their respondents positively support OA model, with 52% and 22.6% are strongly or moderately in favor, respectively. Although the growth

of predatory journals is still being discussed in the literature (e.g. Greussing et al., 2020; Lusk et al., 2023; O'Hanlon et al., 2020), many reputable OA journals are indexed in the DOAJ (Directory of Open Access Journals), Scopus, and Web of Science and have high impact factors. For example, DOAJ lists over 21,000 OA journals which have rigorous peer review and quality standards. These journals are prestigious in their various disciplines and must have undergone quality checks before being listed. This negates the perception that most OA journals are of lower quality and are predatory. As Kingsley (2013) argued more than a decade ago, the quality of a journal is defined by its editorial policy and authorship, not its publishing model, and OA need not be an impediment to quality or peer-review.

Inequity in OA scholarly communications

Although many researchers have adopted OA publishing practices, there is a growing equity gap in OA scholarly communication, limiting them from doing so effectively (Rodriguez, 2014; Zhu, 2017). Fleming et al. (2021: 110) define equity in research as "fair and impartial access to the process and products of research." Hence, when there is no fair and impartial access in the process (i.e. conducting and disseminating research) and products of research (i.e. research outputs), then there is inequity. Ensuring equity in OA publishing is to reprioritize opportunities and support to reduce or eliminate systemic imbalances (Judd and McKinnon, 2021).

APC payment for gold and hybrid OA journals continues to widen the inequities in OA publishing, thus privileging researchers from rich, developed countries ahead of their colleagues in lower-middle-income countries. In a recent study on 522,411 articles published by Springer Nature, Momeni et al. (2023) established the centrality of APC as they reported that authors eligible for APC waivers publish more in gold OA journals than other authors. Findings from their study, further revealed that authors from low- and middle-income countries (LMICs) with the eligibility to use APC discounts have a lower proportion of gold OA publications in all published papers as the discounted APC remains unaffordable for these authors to pay for a gold OA model. In the same year, Koester et al. (2023) also reported that APC presents a formidable barrier to aspiring authors from LMICs in publishing their research in OA journals.

The imbalances in OA publishing also have a gender dimension with men and women having different levels of representation in the scholarly communication landscape. For instance, studies have found that male authors from prestigious institutions have higher likelihood for publishing OA articles (Olejniczak and Wilson, 2020; Zhu, 2017). This could be because publication costs were of higher importance for women than men in making publishing decisions, as reported in a survey of Canadian and US academics (Niles et al., 2020). In a study examining gender gap in publishing in the fields of Science, Technology, Engineering, Mathematics, and Medicine (STEMM), Holman et al. (2018) report huge gaps in surgery, computer science, physics, and maths. The authors estimated that men are invited by journals to submit papers at approximately double the rate of women, further confirming the gender bias in OA publishing. Though some progress was reported in some fields, the authors recommend additional interventions to achieve gender parity in OA publishing.

Interestingly, research has shown that articles with women's contributions are published at a higher rate in OA outlets compared to their male counterparts (Ruggieri et al., 2021). This was also buttressed in a large-scale study of OA publishing considering gender and individual scientific disciplines (Szymula and Šímová, 2023). Using a dataset of OpenAlex, the authors reported that female authors are more likely to choose gold OA than male authors in recent years, while male authors are using the green OA option than their female counterparts (Szymula and Šímová, 2023). This suggests that female authors are consistently limited to fully participate in OA publishing to the prohibitive cost of gold OA journals, even though they are more supportive of OA publishing.

Although some publishers have recently introduced APC waivers to cover fees associated with OA publishing in some journals, Borrego (2023) argues that these waivers often come with stringent conditions beyond the reach of researchers from lower-middle-income countries. Findings from a recent study by Shu and Larivière (2024) indicated that in 2020, only 57,771 out of 1,930,895 OA papers were eligible for the APC waivers and the waived APCs only accounted for 2.33% of total OA revenue generated by publishers. This finding reinforces that complex and strict waiver conditions make it difficult for researchers from these countries to publish their research in an OA journal requiring APCs. These barriers (e.g. prohibitive cost of APC, gender disparities) contribute to inequity and must be addressed for greater equity. While the inequity in OA publishing caused by APC payment—especially in developing countries—remains unabated, Adegbilero-Iwari et al. (2023) report some initiatives and policies such as the development of OA policies and repositories, aimed at promoting OA outputs and reducing questionable OA practice in Africa. However, most of these initiatives are still at formative stages; their impacts on the promotion of OA on the global scale remain unknown. For the Canadian context, there is paucity of research on the factors responsible for systemic and institutional barriers in OA publishing, and this research helps to fill this gap.

Methods

Participants

The participants of this study comprise professors from 15 research-intensive universities (U15) in Canada. Participants were drawn from the HSS disciplines, as research has shown that OA uptake in HSS disciplines is lower when compared to the STEM disciplines (Piwowar et al., 2018). Hence, it is imperative to understand the factors limiting the OA publishing practices of researchers in the HSS disciplines. The convenience sampling guided the selection of the interview participants. Onwuegbuzie and Collins (2015) describe convenience sampling as "choosing settings, groups, and/or individuals that are conveniently available and willing to participate in the study" (para. 286). However, participants came from a wide variety of the HSS disciplines. This sampling strategy is appropriate for the study as participants included those who indicated interest in a follow-up interview after completing an online questionnaire that was used to gather a general understanding of the factors influencing OA publishing practices.

Invitations to participate in an interview were sent via email to 29 professors. Out of the 29 invitations, 20 professors responded and participated in the interviews, given 68.9% response rate. Twenty participants (8 early career researchers [ECRs] and 12 mid-career researchers [MCRs]) were interviewed for approximately 60 minutes for each interview. Earlier studies found that data saturation can be achieved after coding 12 interviews (Guest et al., 2006). Data collection was ended after 20 interviews, as new ones did not add new substantive information to the findings.

Ethics approval and confidentiality

Ethics application was submitted on February 3, 2022, to the Research and Ethics Board of McGill University, and it was approved on February 22, 2022, with approval certificate number 21-06-008(0222). Participants received consent forms regarding the study, which they digitally signed and returned to the researcher. Participants were informed they could withdraw from the study at any time if they felt uncomfortable. Interview participants' names and identities were anonymized using pseudonyms. We sought the consent of the participants before recording the interview using an audio recorder. Raw data collected through the recorded interviews were stored securely on a password protected cloud storage on McGill University's OneDrive folder, accessible only to the researchers.

Data collection process and outcome

Interviews invitations were sent on February 24, 2022, and reminders were sent on March 7, 2022. Semi-structured in-depth interviews were conducted online via Zoom for a period of 1 month from March 8 to April 7, 2022. The interview questions focused on the participants' experiences and understanding of systemic and institutional factors hindering their OA publishing practices. See Appendix 1 for the interview guide. Data transcription was completed within 2 months following the interviews, and transcripts were sent back to the participants to verify that their opinions were accurately transcribed, a process called member checking (Zohrabi, 2013). The interview process workflow is described in Figure 1 below.

Data analysis

Data was analyzed in NVivo software, following the reflective thematic analysis procedure (Braun and Clarke, 2021). The six phases of thematic analysis employed in this study are: (1) data familiarization; (2) systematic data coding; (3) generating initial themes from coded data; (4) developing and reviewing themes; (5) defining, refining, and naming themes; and (6) writing the report.

In phase one, data familiarization involved transcribing recorded interviews and verifying the accuracy of the transcription. A member of the research team transcribed and listened to all recorded interviews to ensure accuracy of the transcription. Phase two involved the systematic data coding, which generated the initial codes from the datasets. We conducted a text search to see word occurrences and noted down some notes (memo) to describe code patterns and observations. For instance, most of the participants expressed the need for grants and money to enable them to publish in gold and hybrid OA journals. This was followed by the need for time to search out appropriate OA

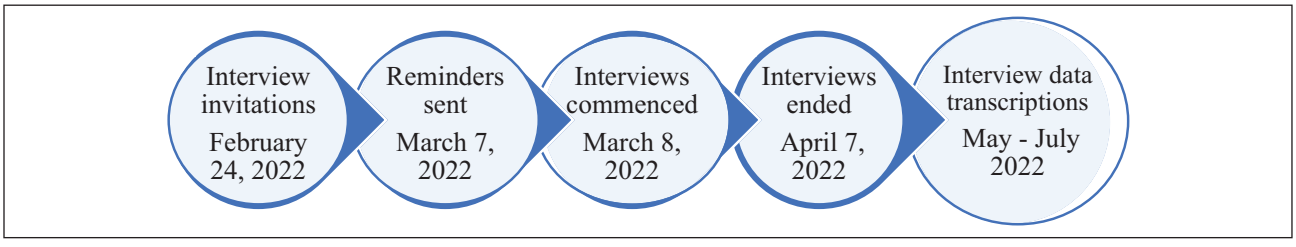

Figure 1. Flow diagram of interview data collection procedure.

outlets, and the barriers to OA publishing being experienced by racialized researchers.

In phase three, initial themes from coded data were developed. This includes merging codes that are similar, renaming codes, and finding themes where codes fit. Phase four focused on developing and reviewing the themes. This means that broad themes generated from phase three were further refined. Similar themes were merged, and codes of the themes were compared. Codes with similar meanings were grouped and renamed. In phase five, the developed themes were then refined, defined, and named. This phase provided final refining and naming of the themes in relation to the research questions.

Five main themes regarding systemic and institutional barriers in OA publishing emerged from the analysis and informed the findings of this study. Appendix 2 presents some examples of how participants' quotes turned to codes, which then became the analytical themes we used for presenting the results. At the last phase, the report of the thematic analysis was written and presented in the Findings and discussions section of this paper.

Findings and discussions

Demographic information

Of the 20 participants, 11 (55%) are women, while nine (45%) are men. Eleven participants (55%) are from the social sciences, while nine participants (45%) are from the humanities. Further, 12 participants (60%) are Associate Professors while eight (40%) are Assistant Professors. This shows that interview participants who earned their PhDs within the last 7–15 years were more than those who did within the last 1–6 years. Hence, the mid-career researchers were slightly more than early career researchers in this study, and there were more women as well. Participants were drawn from 14 specific disciplines in the humanities and social sciences. Four participants (20%) were from the law discipline, followed by two participants (10%) each from political science, geography, and education. Others were from psychology, philosophy, music education, linguistics, classical studies, English, criminology, communication, classics, and anthropology.

Systemic and institutional barriers in OA publishing

Our findings revealed some systemic and institutional barriers in OA publishing practices among the participants. Five themes emerged from systematic software-assisted coding using NVivo through thematic analysis. The themes presented in this paper are part of a larger study (Ayeni, 2023) that touched on other aspects of OA publishing, including facilitators, perceptions, and engagements with OA publishing. As such, a detailed description of how raw interview data was transformed into themes could not be provided in this paper. However, you can access the codebooks and outcomes of all the six phases of thematic analysis exported from NVivo on McGill's repository (https://escholarship.mcgill.ca/concern/theses/2801pn72c). The five themes representing systemic and institutional barriers in OA publishing are (1) Unaffordable APCs limits OA publishing; (2) Precarious career stage and tenure requirements; (3) Unequal privileges influence OA publishing; (4) Gender disparity stifles OA publishing; and (5) Conflicting and unsupportive institutional OA policy. These themes are presented in Figure 2 below, and each theme are extensively discussed in the subsections that follow.

Unaffordable APCs limited researchers' OA publishing

The most frequently discussed systemic barrier to OA publishing by the participants is the cost of APCs which has systemically incapacitated them from publishing OA, particularly early career researchers. As Jessica expressed:

> I think that OA in general in my area, is just accessible to a very small group of researchers who can afford it, which I don't think is the point of OA.

This means that the cost of APCs of many hybrid journals has made OA publishing inequitable to researchers who do not have funding for paying the associated fees. As funding is limited in the HSS disciplines compared to the STEM fields (de Winde et al., 2021; Eve, 2015), OA

Figure 2. A model of barriers to OA publishing from the interviews.

publishing has remained inaccessible to many participants. This is common among participants in their early career years, who cannot afford the cost of APCs. Hence, they either seek default OA journals (i.e. diamond OA journals) or publish in paywalled outlets. As Grayson asserted:

> There are people who don't have that [money to pay for APCs] then don't have access to OA publishing unless they go with a default OA outlet.

Relatedly, Sophia discussed the barriers to pay to publish in OA venues as a junior scholar.

> As a junior scholar with a limited budget, a research budget, I wouldn't have paid the $6000 to publish OA 'cause I would have an option to publish not open. I'm not about keeping research behind a firewall, but I also think that it privileges, in some ways, people who have more funds.

Farah also revealed why she was not publishing OA when she was an assistant professor:

> Prior to becoming an associate, I was just in publish and perish mode. So, I wanted to publish in top tier journals of our field which all required, as I've mentioned, every article is at least 3000 U.S. dollars. So, I thought, OK, I won't think about it right now, I just publish in closed doors. And until I have time to sit back and think about how I would actually want it to happen.

This suggests that APCs continue to be a huge barrier to OA publishing, especially among those who are not in the Western countries. Many researchers cannot afford the cost of making their research OA. For instance, Olivia acknowledged:

> I think article processing charges inhibit publishing by early career researchers and doctoral students, and they inhibit publishing by people who are not in Western academia.

For some scholars, publishing in hybrid journals has many advantages, including preparing scholars' profiles for more funding and career progressions. Hence, not having the funds to publish in these journals may be detrimental to their career growth and recognition. As Grayson lamented:

> Some scholars don't need big grants to do what they need to do. Like my wife is a political theorist. Her methodology is reading stuff and then writing what she thinks about it. She doesn't need money; she doesn't need to go to the field and interview people or whatever. So, she doesn't apply for a lot of grants. But then, that means she's cut off from some of these hybrid journals, or at least that option within. So, there are inequities involved.

This finding lends strong support to existing research which found inequities in OA publishing among researchers, particularly early career researchers and others who cannot afford APCs (Momeni et al., 2023; Nicholas et al., 2017). Furthermore, Gray (2020) found that perceived credibility and prestige of OA journals based in high-income countries was influenced by APCs. This suggests that OA journals with low APCs or no APCs may be perceived as having lower prestige. This was confirmed in another study (Demeter et al., 2021) which found a correlation between hybrid OA journals which charge APCs and high impact factors. By implication, authors who want to publish in high-impact factor journals but cannot afford to pay the associated APCs will rather publish behind paywalls. This explains the complexity in the APC model of OA, and how it continues to entrench inequities in OA publishing.

Precarious career stage and tenure requirements. Findings revealed that another major systemic barrier to OA publishing by the participants are the career stages and tenure requirements in higher education institutions which favor publishing in traditional non-OA venues. This is particularly worrisome to ECRs whose career progression is often associated with publication in high-ranking, top-tier journals, most of which are behind paywalls. Additionally, this systemic barrier to OA publishing was also linked to conflicting priorities in pursuit of tenure by ECRs and limited time to search for relevant OA venues. As publishing OA is not a requirement for tenure in most institutions, many ECRs do not see the urgency to publish in OA outlets, especially as doing so may negatively affect their institutional recognition in tenure applications. For instance, Jackson discussed:

> The issue is that for career prospects and things like that for getting tenure, it's important that one is publishing into the most well-respected journals. And in almost all cases those are paywalled journals that allow the publication of pre-refereed preprints, but then to make it actually OA, one would have to pay the journals fees for the paper.

The participants also lamented that the impact factor and evaluation metrics used in most tenure process often disadvantages social sciences and humanities researchers. Hence, many participants are often targeting journals with high impact factors, which are usually paywalled journals. As Evelyn explained:

> I don't have any or haven't used the money I had available to pay whatever the fees are to publish OA. So, I would say the quiet constraints of the tenure process combined with not having extra money has shaped how I approached OA. It just went super high on the radar.

Tenure evaluation also impacts the pay increase or reduction of researchers, which then makes them very cautious of the venues they publish their research outputs. As revealed by Grayson:

> The challenge is when you're being reviewed for tenure or promotion or even your annual performance review at my university, you get scored based on your research and that score affects your pay 'cause it affects your pay increase. And there are still enough traditionalists among the faculty that they're looking at, the prestige of the publication outlet.

This finding supports Larivière et al.'s (2015: 13) statement that "young researchers need to publish in prestigious journals to gain tenure, while older researchers need to do the same in order to keep their grants." Studies have also shown that tenured faculty members are more likely to publish in OA journals (Nowick, 2008; Park, 2009). This could be because mid-career researchers are not faced with the pressure of tenure that their junior counterparts are faced with, and thus they place less emphasis on journal impact factor and overall prestige (Frank et al., 2023; Niles et al., 2020). This might explain why they have published more in OA outlets than the ECRs.

Additionally, participants also lamented that the impact factor and evaluation metrics used in most tenure and promotion processes often disadvantage social sciences and humanities researchers. Hence, many participants find themselves targeting journals with high impact factors, which are usually paywalled journals. As Farah noted, "*impact factor. . . puts social sciences and humanities at a disadvantage because this is not how we push our knowledge and our fields forward.*" This supports an existing study (Wical and Kocken, 2017) which found that vague and occasionally contradictory language in the evaluation plans could create confusion regarding requirements for OA publishing in the review process.

Unequal privileges influence OA publishing. Aside from the high cost of APCs, institutional barriers to OA publishing were also linked to unequal privileges. Some participants admitted that they enjoy certain privileges because of their institutions and country of birth. Some interview participants recognized they are in privileged situations in terms of the language of writing and communicating their research, funding availability, and access to research articles. They understood this might be a completely different experience for researchers who are not in the same position as them. For instance, Farah shared her view on the systemic barrier limiting scholars in developing countries, particularly those who are economically sanctioned:

> I'm from Iran, born, and raised in Iran, and I'm thinking about poorer countries. So, Iran is one of those countries who in terms of global access to knowledge–also because we are sanctioned as a country–we don't have that kind of access. Also, with the exchange rate, because we're economically sanctioned, it becomes very expensive for universities to buy or subscribe to journals.

This was confirmed by Georgia who acknowledged her privileged situation and how it has played out in her scholarship:

> I am acutely aware that I am in a privileged situation. My university has the money. My university library does subscribe to a lot of journals. So, I'm in a privileged position and so it really isn't fair for me to hold other people to this unreasonable standard that they have the very same things I do when I'm not paying for them.

Many universities in North America and Europe are now signing transformative agreements with journals to transition into full OA publishing while they maintain current subscriptions. Several funding agencies are also permitting the inclusion APCs in grant applications, but this has been opposed by many researchers for not helping to achieve the ideals of OA, particularly for researchers in the Global South and low- and middle-income countries (Alperin, 2022; Kwon, 2022; Rodrigues et al., 2022; Shearer, 2022). This explains why the permission of APCs for OA publishing is not a sustainable approach to achieving the ideals of OA.

Researchers in universities with limited funding or developing countries do not enjoy this privilege; hence, their OA publishing is grossly limited. As Freya asserted, *"If you cut out researchers from around the world because they're from a poor country or whatever, right? So, there's a whole kind of social justice initiative here as well, isn't that?"* This echoes the need to equitably distribute resources for OA publishing, in such a way that researchers form poorly funded universities will not be excluded from publishing their research outputs in OA venues just because they do not enjoy the same privilege as their colleagues in developed economies. This finding supports existing studies which found that the current OA publishing models privilege researchers with funding and resources, and it limits OA uptake by researchers with limited funding (Gray, 2020; Momeni et al., 2023).

Gender disparities stifles OA publishing practices. Participants also discussed their inequity experiences caused by gender disparities. Women participants associated low engagement in OA publishing with family responsibilities and limited opportunities due to lack of time. For these participants, raising a kid and handling other family responsibilities mean that they have limited time to search for OA outlets, which they believe male faculty may not experience. For instance, Freya revealed:

> I'm really busy with children. So, I'll publish as opportunities arise and they're not always an OA journal – that limits the possibilities. It totally affects it 'cause I have less time to search out opportunities, I don't know all the OA journals in my area.

Other women participants shared similar views with Freya when they identified family responsibility, childcare, service loads as some of the reasons for not publishing OA. For example, Evelyn and Farah discussed:

> I published maybe one to two times a year more recently 'cause I had a kid. But otherwise, you know a couple times a year. . . I was on maternity leave and then I was in the pandemic. So, I feel a bit removed from the OA system at the University [where I teach] other than I know it's there.

> It adds to that whole conversation of service load is considered for female faculty members and not for male faculty members, and they are the ones benefiting–like male without family. So, they don't have childcare duties. . . It adds pressure and workload and free labour on racialized and gendered faculty members. . . So, the load is for free on the shoulders of mostly women and racialized members.

In general, research productivity of women professors has been found to be lower when compared to their male counterparts (Cui et al., 2022; Garner et al., 2018; Sá et al., 2020). Similarly, studies have shown that there is a significant gender and racial disparity in productivity and performance among researchers due to systemic and structural biases (Bertolero et al., 2020; Larivière et al., 2013). This seems to be the case with OA publishing as well, confirming existing studies which found that male professors are more likely to author OA articles because women faculty are usually less funded (Nguyen et al., 2021; Olejniczak and Wilson, 2020; Zhu, 2017). This highlights gender disparities in OA publishing among HSS researchers in Canada.

Conflicting and unsupportive institutional OA policies

Participants extensively discussed their experiences with conflicting and unsupportive policies for OA publishing in their institutions. On the one hand, participants revealed not receiving any support from their institutions to publish OA. On the other hand, they discussed the disconnect between policy and practice, especially regarding funders' requirements for OA publishing. For instance, Georgia revealed:

> Now SSHRC is leaning more towards requiring that your research be published OA. My only problem is I don't know if it's like a requirement or just a heavy suggestion.

While there is a growing requirement by funding agencies to publish OA, participants doubted their ingenuity regarding those policies as there are no mechanisms in place to ensure implementation of such policies. As Freya discussed:

> SSHRC is always pushing us to do more OA stuff, more open public events, which is great. But sometimes you know there's a disconnect between what academics know about what's happening.

This suggests that there is a disconnect in OA policies and practice. This was further corroborated by Olivia, who sheds light on the reality of OA policies in principle and in practice. In her words:

> I would say that the norm in [my disciplines] is to support it in principle and then be a bit vague about how to achieve it in practice (laughs). And I think different people are under different institutional pressures. Obviously, someone who's going up for tenure might be very concerned to publish in top-tier journals that are not OA, depending on what institution they're at, but that might be a big concern, as in U15 [research-intensive universities in Canada].

Another conflicting and unsupportive policy experienced and discussed by the participants is the inclusion of OA publishing fees (APCs) in grant applications. Although most funding agencies now allow this in principle, many participants discussed the setbacks they experienced by funding applications reviewers. This was confirmed by some participants who currently serve as reviewers on SSHRC funding application committees, expressing their displeasure about using taxpayers' money to pay for APCs. They strongly opposed this policy, and believed this is not an ideal way to achieve OA. For instance, Jackson said:

> To include OA publishing fees in budgets for grants, I think this is just a disaster – a disastrous model for how to achieve OA. And I think it's something that should be actively resisted.

This objection by Jackson toward funding APCs in grant applications for OA publishing was also shared by Greg, who has reviewed grant applications. Greg believes that Tri-Council funding should not be harnessed for paying APCs. In his words:

> I often see people asking for $5000 under SSHRC grants to publish, because you want to pay for a journal and all this kind of stuff. And philosophically, I don't agree with that.

Furthermore, other participants reported that they were criticized for including APCs fees in their grant application budgets. For example, Jessica explained:

> I think institutional support for OA is kind of mixed at [my university], like they would like us to do it, but they don't have a ton of support. And then sometimes when I have applied for grants, and I've put OA fees into the budget, I'll get sort of criticism. And I'll use an actual journal to give my estimate. I'll say, here's the cost of publishing in this OA journal. But then reviewers will question the budget like that

> seems really high or that seems too low. And so, I think the way that reviewers evaluate even funding applications that include OA can be complicated too.

Because of the lack of favorable policy from institutions and funding agencies, Jessica doubted the authenticity of funding agencies to ensure OA publishing of research funded by them. According to her:

> I doubt the authenticity of the Tri-Council funding agencies and their support for OA. It doesn't feel like they really wanted you to publish OA.

Jessica believes that funding agencies should build more support for OA rather than just say they wanted researchers to publish OA, emphasizing the need to improve institutional funding structures for OA publishing. Hence, to some participants, not being able to pay for APCs from their grant money is a sign that there is no institutional support for them to publish OA. This showed that participants are confronted with two different realities when it comes to OA publishing: principle and practice. In principle, participants believed they should be publishing OA, but in practice, institutional policies for tenure and promotion, and grant application reviews do not encourage OA publishing. As such, some participants are stuck with the ideals of OA publishing, without translating these ideals into practice.

This supports studies which found that although researchers were enthusiastic about creating lasting impact, they lack effective institutional support to maximize their own research impact (Marcella et al., 2018). This finding is also consistent with studies that stressed that the APC model of OA is not the ideal way of achieving OA, because it encourages inequities and widens the equity gap in access to funds for OA publishing (Alperin, 2022; Momeni et al., 2023; Nicholas et al., 2017). Some studies have also argued that the APC model disproportionately affects women and scholars from developing or poorer countries (Nguyen et al., 2021; Olejniczak and Wilson, 2020), thereby widening equity gaps in OA publishing.

Improving OA publishing uptake and making it more equitable

In this section, we discuss how our study can contribute to making OA publishing more equitable among researchers. Two main recommendations emanated from the discussions with interview participants, which are then compared with suggestions from existing studies.

Promote and fund diamond OA publishing. Participants discussed that there should be increased funding for establishing OA journals in universities: "*more funding and support of OA journals from universities would be a great start.*" (Freya). This would help reduce the financial burden of paying for APCs on the researchers. Funding viable OA models such as the diamond OA stand as a veritable approach to reducing the barrier caused by APCs. More support for diamond OA initiatives, like the SSHRC's Aid to Scholarly Journals grants should be provided and extended to journals in the HSS.

One of the ways of reducing the inequity caused by APCs is to fund and promote viable OA publishing models, such as diamond OA journals (Baro and Eze, 2017; Holley, 2018). With diamond OA, authors are not charged any publishing fees (i.e. APCs) and users can access published articles free of any cost and copyright restrictions. There is a strong push for diamond OA journals, which many funding agencies and advocates believe is the best way to achieve the ideals of OA (Holley, 2018; Johnson, 2019). With diamond journals, OA publishing is entirely free as authors and readers do not pay to publish nor read (Holley, 2018). Hence, this model is preferred by researchers and funders alike (Baro and Eze, 2017; Bosah et al., 2017). However, most prestigious OA journals still operate the gold or hybrid OA model, perpetuating the increasing need for APCs (Laakso and Björk, 2016; Sotudeh and Estakhr, 2018). There is, therefore, a need to increase awareness of viable OA journals, particularly the diamond OA relevant to researchers' fields of interest (Tenopir et al., 2017).

Notably, there is a need for concerted effort to mitigate the effect of APCs on OA scholarly communication, which Klebel and Ross-Hellauer (2022) called the "APC-effect." This is because APC is one of the prominent barriers to OA publishing globally, especially in gold and hybrid OA journals (Halevi and Walsh, 2021; Klebel and Ross-Hellauer, 2022; Rodrigues et al., 2022; Scott, 2018). This is particularly worrisome as hybrid OA journals were found to be increasing inequities among researchers with limited funding, particularly those from the Global South (Demeter et al., 2021). Hence, funding and promoting diamond OA journals can help improve the uptake of OA publishing among researchers, particularly marginalized researchers, and those with limited funding to pay for APCs.

Provide incentives and equitably distribute resources for OA publishing. Some participants suggested that it is important to build and incentivize OA culture within academia. As Greg advised, "*if you're a leader in these academic fields, really think about leading the way in OA publishing because people will follow.*" One of the ways of achieving this is by encouraging older faculty members to publish OA through institutional OA policy, thereby promoting the culture of openness (Zerkee et al., 2021). One example for achieving this could be by encouraging publishers to remove APC requirements for developing countries just like the recent Springer Nature APC pricing initiative on

62 of their journals. This initiative is not perfect as it focused on journals in the STEM fields, and only included Psychology, a social sciences discipline. This echoes the inequity of access to OA publishing by social sciences researchers. However, if all publishers waive APC for most of their journals for underrepresented researchers, we might record a growing uptake in OA publishing by researchers from the Global South.

There needs to be strong support for women or other minorities in their scholarly communication practices. This could be done by incentivizing OA publishing through the removal of cost associated with publishing OA in prestigious journals. For example, the transformative agreements between the Canadian Research Knowledge Network (CRKN) and major publishers (e.g. Wiley, Elsevier, Taylor & Francis etc.) has increasingly encouraged many Canadian researchers to publish their articles OA. This is because researchers who are concerned about publishing in highly ranked journals can do so without having to pay the associated APCs, or publishing behind paywalls due to cost. Although there are discussions about the sustainability of this model (e.g. Shearer, 2022), studies have shown that it has helped to improve the uptake of OA publishing, particularly in social sciences disciplines (Bakker et al., 2024; Borrego et al., 2021). More initiatives like this are needed to incentivize and encourage OA publishing, which would be particularly useful for early career researchers and minoritized researchers whose career stages could be negatively impacted if they chose to publish in less prestigious OA journals. As such, it is also expedient to develop more prestigious OA journals to encourage participation across board (Baffy et al., 2020; Eve, 2015).

The systemic barrier and inequity caused by unequal privileges could be reduced through equitable distribution of resources for scholarly communication (Seo et al., 2017). It can also be reduced by ensuring that researchers have unhindered access to knowledge through OA availability of research outputs. Self-archiving in institutional or subject repositories can also help to reduce the inequities in access to research (Shearer, 2022). Resources distribution for OA publishing could also come in the form of providing OA publishing fees and allowing the use of these publishing fees for APC payment. There needs to be strong partnership between libraries and publishers to reduce inequities in OA publishing. As Holzman (2016: 181) suggested, "librarians and university presses will have to work more closely together and with faculty to see if there are ways, using the professionalism found in all three places, to reduce and redistribute costs." This suggests that ensuring equitable distribution and access to OA publishing would require the effort and cooperation of many entities, and as such, concerted effort is needed to improve the uptake of OA in Canada, and in extension, globally.

Limitations and future studies

This study only focused on systemic and institutional barriers limiting OA publishing practices of researchers in the humanities and social science disciplines in research-intensive universities in Canada. Further studies are needed to provide a holistic understanding of other types of barriers in OA publishing, considering factors such as institutional affiliation, indexing practices from journal editors, and other social-technical factors. It is pertinent to compare these barriers among different disciplines, particularly among the HSS and STEM disciplines, and among countries. Moreover, this study focused solely on researchers' perspectives; future studies could investigate the role of indexing (DOAJ, Scopus, and Web of Science) in shaping OA equity. This is because indexing inclusion might determine which OA journals are discoverable and seen as legitimate, which then influence how researchers publish in these journals. For instance, a recent study found that OA journal article production by MDPI has increased significantly since 2017 (Kim and Atteraya, 2024). They found that regardless of publishers' size, the number of articles published in OA journals (including top publishers such as Elsevier, Springer Nature, Hindawi, Taylor & Francis) has increased substantially over the years compared with those published in non-OA journals. This stresses publishers influence and indexing practices on the growth of OA publishing. As such, collecting data on how mega-publishers (e.g. MDPI and Frontiers) influence OA publishing through pricing, inclusion, and editorial decisions can provide practitioner perspectives on factors influencing equity in OA publishing.

Conclusion

This study examined systemic and institutional barriers to OA publishing among HSS researchers of research-intensive universities in Canada. These barriers include unaffordable article processing charges, precarious career stage and tenure requirements, unequal privileges, gender disparity, and conflicting institutional OA policy. Although many researchers are supportive of OA, these barriers have limited their OA publishing practices, and in turn affected the uptake of OA among the participants. As such, there needs to be a concerted effort in promoting and funding viable and sustainable OA models (such as the diamond OA) which removes the burden of OA publishing from researchers. Participants also suggested the need to incentivize OA publishing by promoting OA culture within academia.

Notably, there is a need to provide institutional support for recognizing OA publishing and/or advocacy efforts of researchers in tenure applications. Institutional support is important for achieving OA, and this needs to be improved across research-intensive universities in Canada. As

Dawson (2018) recommends, messages about OA need to be clear, concise, and jargon free to improve OA publishing in universities. This would help researchers to understand the importance of OA in clear and unambiguous terms and help improve their support for OA publishing. The low level of support for OA publishing means that OA might continue to experience setbacks, and its uptake might continue to be low, particularly in the humanities and social sciences disciplines. Hence, there is a need to provide more institutional support by encouraging partnership with publishers to remove embargo policies for preprints/postprints deposit in institutional repositories [IRs] (Jain, 2011; Kim, 2011). Similarly, institutional support could be provided by creating awareness on rights retention strategies for authors. Right retention strategies help authors to retain the copyright of their publications, enabling them to deposit author-accepted manuscripts (i.e. version of record) in their IRs under Creative Common Attribution (CC By) license (Khoo, 2021).

Most importantly, the model of academic scholarship that places prominence on journal metrics for promotion and tenure has long been criticized (e.g. DORA, 2018; Haley, 2021; Larivière and Sugimoto, 2019), and as such, needs to be reformed. Larivière and Sugimoto (2019: 27) cautioned that the Journal Impact Factor "will likely remain part of the research ecosystem and as long as journals remain the primary mechanism for diffusing new knowledge." Although these challenges persist, there is no better time than now to rethink research assessment in higher education institutions. For example, research outputs could be evaluated in terms of social engagement, readership beyond journals, impact on practice and policy, and knowledge translation (Ari et al., 2020; Haley and Jack, 2023; Rawhouser et al., 2019). Such complementary evaluation approaches could reduce the need for researchers to consistently target high-impact journals that are often behind paywalls and encourage them to publish in outlets that promote unrestricted access to knowledge. These complementary metrics could also promote diversity in research assessment and help to emphasize societal impact of research above existing metrics that predominantly focus on Impact Factor. This can help reform and transform how academics approach publishing in general, with increasing support for and engagement in OA publishing.

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Data availability

The datasets used for the current study are not publicly available due to the need of protecting participants' personal privacy.

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Appendices

Appendix 1: Interview guide

Opening questions: Demographics. Thank you for agreeing to take time out of your busy schedule to speak with me. First, I would like to start with some demographic questions to get to know you before we delve into the interview questions. Could you describe your current contract type, discipline of practice and how long you've been working in this role?

Main interview questions

1. Can you tell me a little bit about your experiences with OA publishing? What kind of OA venues have you published your research outputs?
2. Are there institutional policies that determine or influence whether or not you publish OA?
   Probe: If yes, what are they and how have they influenced your OA publishing practices?
3. Most funding agencies are now requiring OA publishing of research outputs funded by them. Can you tell me about how funding requirement is influencing or affecting your OA publishing practices?
4. OA uptake in the HSS disciplines is low when compared with the STEM fields. What would you say are the factors/barriers limiting your OA publishing practices?
   Probe A: For instance, the cost of OA publishing has been reported in literature and in fact in the survey preceding this interview, as the main barrier to OA publishing. I am wondering, in your opinion or experience, what is the main factor limiting the advancement of OA scholarly communication? And how has it limited your OA publishing practices?
5. Would you say your OA publishing practices is influenced or determined by your current career stage and expectations around tenure [for ECRs] or promotion [for MCRs] requirements?
   Probe: If yes, could you please expatiate and give examples?
6. If you are to give recommendations for improving OA uptake in the HSS disciplines, what would that be?
7. Is there anything else you would like to add that we have not already discussed?

Appendix 2. Sample codes developed from participants' quotes.

Codes	Reference (Quotes)	Participants
Unaffordable APCs	*"I think article processing charges inhibit publishing by early career researchers and doctoral students, and they inhibit publishing by people who are not in Western academia."*	Olivia
Unequal privileges	*"I am acutely aware that I am in a privileged situation. My university has the money. My university library does subscribe to a lot of journals. So, I'm in a privileged position and so it really isn't fair for me to hold other people to this unreasonable standard that they have the very same things I do when I'm not paying for them."*	Georgia
Gender disparity	*"I'm really busy with children. So, I'll publish as opportunities arise and they're not always an OA journal–that limits the possibilities. It totally affects it 'cause I have less time to search out opportunities, I don't know all the OA journals in my area."*	Freya
Unsupportive OA policy	*"To include OA publishing fees in budgets for grants, I think this is just a disaster–a disastrous model for how to achieve OA. And I think it's something that should be actively resisted."*	Jackson
Precarious career stage	*"The challenge is when you're being reviewed for tenure or promotion or even your annual performance review at my university, you get scored based on your research and that score affects your pay 'cause it affects your pay increase. And there are still enough traditionalists among the faculty that are looking at, the prestige of the publication outlet"*	Grayson