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PEER-REVIEWED JOURNAL ON THE INTERNET

Humanities scholars' needs for open social scholarship platforms as online scholarly information sharing infrastructure by Daniel G. Tracy and Graham Jensen

# Abstract

The contemporary scholarly communication environment is characterized by the growth in mandates and infrastructure for open access publication and open approaches to the research lifecycle, with a consequent explosion in the number of online platforms seeking to provide infrastructure for open scholarship. These include corporate academic social networks and scholar-governed infrastructure created as a reaction against those networks, as well as the recent major transformation of the social media landscape in the wake of changes at Twitter (now X), previously a major outlet for scholarly engagement with the public. Analysts of this environment have pointed out that most platform initiatives focus on narrow use cases rather than building up solutions through a holistic understanding of scholar workflows. This exploratory study uses focus group interviews to draw out responses to one academically governed platform, the Humanities and Social Sciences (HSS) Commons, in the context of humanities scholars' existing work. It explores humanities scholars' needs and behaviors related to sharing scholarly information with each other and broader audiences, particularly on the Internet. Feedback from participants sheds light on opportunities and challenges for academy-governed infrastructure for "open social scholarship." Themes identified include technical fatigue and burnout in the current multi-platform environment, sustainability, and desires to reach and engage the right academic and non-academic audiences when appropriate.

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#### Introduction

Writing for a blog sponsored by the Alexander von Humboldt Institute for Internet and Society, Hasani Mavriqi, *et al.* (2020) reported on discussions of public research infrastructure at an Open Science Fair

2019 workshop. In their report, they identified what they call a governance problem with many new digital infrastructure initiatives, leaving the scholars who will use the resulting services out of the design. Such platforms are "designed in a top-down, rather than bottom-up, fashion," they note, leading to "isolated solutions based on very specific requirements that are ill-suited for broader use ... steered more by political currents than community needs" [1]. Their comments take place in an environment of proliferating platforms. Looking at for-profit start-ups in "research workflows and scholarly communication at large" [2], for example, Campfens (2019) drew a sample of 120 for market analysis from a list of over 800 candidates (including non-academic social media) that were available as of her study.

This article takes the cue from Hasani Mavriqi, *et al.*, and reports exploratory research into the information sharing behavior of humanities scholars, and the challenges encountered, that may help inform infrastructure efforts for related disciplines by pointing to needs arising from the perspectives of the participants. Focus group interviews followed a workshop introducing one particular possible online platform, the Humanities and Social Sciences (HSS) Commons, to prompt conversation. The HSS Commons (hsscommons.ca) is an infrastructure initiative of the Implementing New Knowledge Environments (INKE) Partnership, and combines features related to preprint or publication sharing, blogging, message boards, and project collaboration. The qualitative data collected during the focus groups emphasized the broad scholarly information sharing environment of participants prior to asking how the HSS Commons might fit into that environment. As such, it seeks to not only provide a needs assessment that may inform further development of the HSS Commons but to fill a gap in the literature on scholars' information sharing, which tends to follow different types of online platforms and thus replicates the focus on narrow activities supported by those platforms rather than information behavior overall. The article then reflects on the implications for platform development and further research, highlighting in particular the key role of audience in understanding scholars' behavior in sharing information online.

### Literature review

The last decades have seen accelerating growth of open access (OA) to scholarly research: that is, freely available research that is also licensed for reuse. In addition to formal publication, an active preprint sharing culture has existed in science disciplines including physics and medicine through disciplinary repositories like arXiv and PubMed. Institutional repositories, typically managed by libraries at their home university, provide another route for the dissemination of preprints (and other local research outputs such as theses and dissertations, working papers, and so on); however, they have faced challenges across the disciplines with author self-deposit, leading to investigation of promotional strategies and alternate (including automated) methods of populating the content (Clark, 2023; Quinn, 2023). Researchers in the humanities and social sciences have, to some extent, been slower to adopt OA practices for a variety of reasons. In an extensive review of research on OA across the disciplines, Severin, et al. (2020) outlined some reasons for this uneven adoption in the humanities, including critique and misconceptions about OA (or specific models), but also issues related to infrastructure and financial models supporting OA publication, particularly in the sciences. Arthur and Hearn (2024) elaborated these issues in the context of disciplinary differences between the sciences and humanities to note that models for open science cannot simply be imported into the humanities due to research culture differences that relate to the form and purpose of scholarship. Nonetheless, they also argued there are "opportunities for the humanities to develop their own frameworks for openness" [3]. Some preprint repositories in the humanities have appeared, including several of different degrees of specificity using the Open Science Framework's Preprints server such as SocArXiv (which treats arts and humanities as one of the major subject areas), BodoArXiv (medieval studies), and MedArXiv (media, film, and communication studies). Additionally, the HSS Commons and the Knowledge Commons (previously the MLA and then Humanities Commons, growing less disciplinarily specific over time) have preprint servers attached to their other community infrastructure.

Beyond OA to final published research outputs, however, scholars have also raised concerns for at least a

decade about what happens when research is made public, for example through social media as a form of public engagement. McMillan Cottom, for example, critiqued an assumption among advocates for academic publicity that "when writing for publics, actors are individuals simultaneously embedded in institutions and dislocated from stratified status groups," arguing instead that "microcelebrity and attention do not operate in the same way for all status groups" [4]. Likewise, Morrison noted that "While some viral academic media broadens reach and speech, other viral academic media is deliberately weaponized to suppress it" [5]. As she recognized, attacks are increasingly coordinated against academics, and more recent studies have investigated both scholar coping mechanisms as well as the poor support scholars receive from their home institutions (see, *e.g.*, Houldon, *et al.*, 2022; Gosse, *et al.*, 2024). These attacks are disproportionately targeted at those from marginalized communities, typically from right-wing political movements using established strategies (Lawless and Cole, 2021).

Recognition that simply sharing information may not be the primary challenge for the humanities can be seen in earlier discussions of "e-research" in the humanities. For example, Genoni, *et al.* (2009) called for structures that would go beyond information sharing to "enable[], support[], and sustain[] collaborative, distributed scholarship" [6]. More recently, a number of scholars have called for new models of open scholarship in the humanities that go beyond the focus on OA (which makes things available but does not require interaction between scholars and non-scholars) to active engagement with different audiences (Fitzpatrick, 2019; Hsu, 2016). Arbuckle, *et al.* coined the term "open social scholarship" to indicate "academic practice that enables the creation, dissemination, and engagement of open research by specialists and non-specialists in accessible and significant ways" [7]. In other words, these models seek to push the conversation beyond that of OA to actual engagement with publics around research.

Nonetheless, other studies have identified significant social components inherent in information sharing behavior that suggests that informational and social media are not in opposition. Indeed, the literature on information sharing substantially arose to correct an implicit assumption of solitary information users in traditional information behavior studies often focused more on information seeking (Erdelez and Rioux 2000; Talja, 2002; see also earlier Twidale, *et al.*, 1997, on what they called "serendipitous altruism" among information seekers) or a very limited sense of the information needs and tasks driving information seeking and sharing behavior that overlooked a substantial social and affective components in non-academic as well as academic populations (Marshall and Bly, 2004; Fulton, 2009; Tinto and Ruthven, 2016). As Pilerot noted in a review of literature on information sharing, the term is used in overlapping ways with other terms such that the literature encompasses discussions both of "sharing out" of information (ranging from what others may call information giving to information dissemination) and of "sharing between" that emphasizes reciprocity ("information exchange") [8]. Regardless, the term emphasizes information behavior that includes significant social components and relationships. In another survey of the early information sharing literature, Wilson (2010) identified key social factors that impacted information sharing, including trust, risk/reward, and proximity.

Pilerot (2015, 2013) echoed Wilson's findings related to social factors in a succession of studies of design scholars that note trust as a key issue in relation to proximity, where issues of writing style and confidence in shared disciplinary community are key to forming a positive information sharing environment with unknown colleagues. This follows earlier work by Genoni, *et al.* (2009) that found an online "e-research community" in European studies "actualised' on a personal level an ideal of scholarly community" [9]. Information behavior studies of humanists have thus long since left behind the cliché of humanists as either solitary or anti-technology, showing an information sharing culture among scholars that is particularly important and active in the development of research (Buchanan and Erdelez, 2019; Lehnen and Insua, 2021). Moreover, despite critiques of the problems with social media, scholars in the humanities have pointed to it—and particularly Twitter (prior to its acquisition by Elon Musk in October 2022)—as a key resource for public engagement in the humanities and digital humanities (Warwick, 2012; Ross, 2019). Studies of scholars' use of social media have confirmed digital humanities as a particularly engaged community, and even among more engaged disciplines digital humanists participate in more discussion-based activity in social media (Holmberg and Thelwell, 2014; Quan-Haas, *et al.*, 2015). Similarly, Jeng, *et al.* (2017) noted a greater number of discussion threads among one particular set of humanists, art

historians, on ResearchGate, as compared to disciplines from the social sciences and hard sciences (library and information science, astrophysics). More recently, academic participation in the social media landscape was disrupted with Elon Musk's 2022 takeover of Twitter and rebranding as X, with some studies already beginning to look at the impact. Bitterman, *et al.* (2023) suggested a link between open science advocacy and movement to Mastodon, one Twitter/X alternative. Bisbee and Munger (2024) characterized the early impact of the Musk takeover on academic posting, showing a decline in producing new content but not necessarily in reposting or replying.

The HSS Commons has been developed as one part of the endeavor to support open social scholarship: it allows scholars to create profiles and deposit works to make them OA, but also incorporates social elements such as the ability to follow other scholars, write and publish public blog posts about their research, create groups with shared resources, and collaborate on specific projects. As a result, the platform provides a more expansive approach than traditional disciplinary (or institutional) repositories that primarily function as distribution points for preprints. The use of the term "commons" deliberately invokes an idea not just of dissemination but of community participation. Likewise, the more social aspects of research sharing evoke other academic social networking (ASNS) platforms such as Academia.edu and ResearchGate, but features for community conversation (groups, blogging) and project management exceed the scope of those sites. Additionally, the HSS Commons, like other platforms such as the Knowledge Commons and the CUNY Commons, have emphasized academic ownership and governance as opposed to corporate social network models that seek to exploit user data and monopolize attention with algorithmic rankings and content sorting (Duffy and Pooley, 2017; Fitzpatrick, 2015; Winter, et al., 2020). Jensen, et al. (2022), for example, explained how the HSS Commons is designed to avoid some of the challenges humanists and social scientists have identified with OA and social network models, including the "privacy and security concerns of marginalized scholars" such as McMillan Cottom and Morrison [10]. These are concerns that the Knowledge Commons has also sought to address (Hyde, 2021).

Research on traditional disciplinary or subject repositories, sometimes called preprint servers, tends to focus on impact measures such as citation metrics or "alt-metrics" that capture features such as mentions on social media (see, e.g., Li, et al., 2015; Wang, et al., 2020a, 2020b). Reacting to a lack of empirical information about stakeholder perspectives on preprint servers, Chiarelli, et al. (2019) interviewed a wide variety of stakeholders in fields with emerging preprint infrastructure: biology, chemistry, and psychology. These stakeholders valued speed of dissemination, the possibility for community feedback on manuscripts, and (with qualifications) the ability to put findings online before being scooped, with the largest concerns about quality assurance, the amount or quality of feedback, risks of media exposure for unreviewed and problematic results, harms in sensitive areas, and contributing to information overload [11]. These stakeholders also identified concerns over sustainability. Likewise, Metelko and Maver (2023) surveyed Slovenian scientists on their use and perception of arXiv. They showed significant use among astronomers, physicists, and mathematicians, with speed of access, greater impact, and career development as key motivators, with more skepticism from computer scientists and electrical engineers, particularly related to questions about quality of content. Likely because of the lower levels of OA participation outlined by Severin, et al. (2020), but also because humanities-based disciplinary repositories are either not wellestablished or else follow a different model, there is a lack of empirical investigation into the use of disciplinary repositories in the humanities.

While they provide some insight into use of particular technologies, information studies of repositories, social media, and discussion communities, regardless of academic discipline, assume that these functionalities are separate and take the technologies out of the broader disciplinary contexts of information behavior, much as Hasani Mavriqi, *et al.* (2020) noted about the platforms themselves. Because spaces such as the HSS Commons in Canada (and counterparts such as the Knowledge Commons in the United States) have emphasized community building and collaboration with a wide range of features often found in different kinds of platforms, there is an opportunity to look more closely at information system design from the perspective of a more complicated set of end-user needs and behaviors.

This study seeks to explore how the development of academically governed open social scholarship

platforms fits into information sharing behavior of humanities and the broader array of social platforms and repository systems they may already use. Specifically, the research asks what the existing information sharing behaviors and associated challenges are with the current information sharing environment for humanities research. It then considers what needs those uses and challenges reveal for development of open social scholarship infrastructure to support information sharing in the humanities.

# Methodology

Following ethics approval at the institutions of both researchers, individuals were recruited by e-mail and verbal announcements at two large events bringing together scholars, students, practitioners, and others in the humanities — and particularly the digital humanities, a disciplinary community that has been very active in the context of social media in the past. Participants joined a workshop providing an overview of the HSS Commons followed by a feedback session in the form of a focus group.

Focus groups are an appropriate research methodology when conducting needs assessments or community analysis related to the creation of digital information services [12]. Additionally, Lindlof and Taylor (2019) suggested they are the most popular form of group interview for studies of communication [13]. Focus groups are particularly useful, as are other types of individual or group interviews, as a way of getting the perspective of participants in their own words, with focus groups offering the opportunity to collaborate on the generation of ideas of shared interest or for participants to note differences. In this case, the focus of the study was on the needs and behaviors related to the sharing of scholarly information and the research systems best suited to fill a community's needs in that area. The participants would not only have shared investments in that topic, but could even see one another as audiences for their shared scholarly information. Therefore, they could respond to others' comments both from the perspective of another scholar sharing similar information and from the perspective of someone receiving or discovering shared information.

One investigator provided the overview of the HSS Commons, and the other led the focus groups with the presenter listening, taking additional notes, and contributing follow-up questions. The workshop was meant to prime the discussion and provide a point of reference that would help elicit ideas about the needs researchers would have for open scholarship systems. Topics included researcher profiles in the system, how to follow others, an overview of "groups" and "projects," the repository functionality for preprints and other publication types, discovery of deposited resources, and the creation of blog posts and collections of resources.

The focus group discussed the overall scholarly information sharing environment and the audiences participants have for their communication of research and scholarship, followed by discussion of their reaction to the HSS Commons and how they see it as fitting into that broader context. The focus groups followed a semi-structured format and encouraged conversation among participants to draw out points of similarity and difference and to identify the concerns that attracted the most attention. Questions were developed following the principle that "focus group questions start broadly and then narrow to specifics within the area of interest" (Chase and Alvarez, 2000). The following questions were used as prompts to move the conversation forward as needed:

- 1. Can you tell us about the ways you share your research and scholarship with colleagues or the public, including social media, depositing copies of research in other locations, or more kind of formal and informal sharing?
- 2. Can you tell us about any non-scholarly audiences you see as potential audiences for your scholarship and how you share information about your research with them?
- 3. What are some of the challenges or weaknesses you see in the current options for sharing information about your research online with scholarly or public audiences that we have discussed in the prior

questions?

- 4. From what you have seen of the HSS Commons, what do you see as its potential value?
- 5. From your experience of the HSS Commons so far, what do you see as the biggest obstacles to further use for you to achieve the possible value we previously discussed?
- 6. Where do you see as the greatest overlap between the HSS Commons and other systems you use to share information about your research with the scholarly community or the public? What is most unique?

Focus group interviews rely not on the quantity of participants but the depth and variety of participants. Therefore, we sought to maximize the diversity of perspectives within the groups in terms of stage of career and types of roles in research and scholarship. Three focus groups were held in total: one in person at each event, and one as an online offering related to the first event but extended as an opportunity to members of the broader community who could not travel to attend that event in person.

The analysis in <u>Results</u> begins with an overview of the reported scholarly information sharing behavior of the participants and then focuses on general themes related to challenges for scholarly information sharing in the contemporary environment. These themes were identified through a grounded analysis of the transcripts, within the general framework of challenges with existing sharing infrastructure and general needs for scholarly information sharing infrastructure. Feedback on the HSS Commons is only included where it suggests general issues for the design of open social scholarship systems. Participants are given distinct identifiers (P1, P2, etc.) to distinguish them in quoted passages from the transcripts.

# Results

A total of 15 individuals participated, representing perspectives from graduate students and post-doctoral researchers to junior and senior faculty, as well as an individual affiliated with a research publisher. Types of scholarly work represented included single-author research, participation in research teams, scholarly society management and communication, and publishing. Most individuals were from Canadian research institutions, with a small number of participants from institutions in other countries.

Participants indicated a broad range of digital, and some analog, methods for dissemination of ideas about their scholarship or the scholarly work of their teams, collaborative partnerships, or societies. These included traditional forms of dissemination such as monographs, journals, edited volumes, conferences, and newsletters. However, they also included a large range of nontraditional sharing mechanisms that ranged from those narrowly targeted for specific audiences or collaborators to those that were more undirected for broad disciplinary or non-academic audiences: academic and popular social networks, document and data repositories, project management tools, project Web sites, and numerous others. A full list of sharing mechanisms can be found in the Appendix. Recipients for this work include colleagues, scholar and community collaborators, members of societies, specific publics engaged in particular issues, and broader undefined publics.

Three key themes related to information sharing arose from the focus groups: technical fatigue and burnout, sustainability, and audience. The last theme is subdivided into two interrelated areas: reaching audiences and the role of metrics in understanding audience. A fourth and final theme gathers miscellaneous ideas for information-sharing infrastructure that were not discussed in depth but did come up across the groups.

# Technical fatigue and burnout

Many participants described some version of what P10 called "techno-fatigue," which related to a sense of frustration with the diversity and turnover in platforms for sharing scholarly information. P5, for example, described the redundant effort needed for his research groups to distribute the same information across

multiple spaces, but this could also manifest, as it did for P12, in having different research outputs in various research data and document repositories such that "everything is scattered." P14 avoided most digital sharing platforms except for long-established e-mail lists. He shared document folders with close colleagues to avoid being overwhelmed. There was a strong desire for fewer accounts to manage and less duplication of effort, since even the prospect of having to invest extra time and effort was sometimes enough to prevent participants from creating an account on a new platform. For example, P10 described a group that delayed joining Twitter only to have their fears confirmed: "I think actually that some of the hesitancy even to go into Twitter was really coming from a place of like, we've like, you know, invested time into learning one thing, and then it just changes or it stops functioning, and then you go." This group finally began using Twitter/X just as it began to suffer significant losses in users following Elon Musk's takeover of the platform in fall 2022, and they no longer see it as worthwhile.

While the changes at Twitter/X did not create this sense of techno-fatigue, they clearly exacerbated it. P6 noted his small humanities society continued to use Twitter/X despite it "not doing what it was designed to do originally in our workflow," in part because of a lack of clarity on another solution — a concern with "diminishing returns" echoed by P4 and demonstrating the individually felt longer-term impact of the early drop-off in content creation on Twitter recently shown by Bisbee and Munger (2024). Connecting these challenges to fatigue and burnout, P12 noted that "it's been hard to find a similar platform … some people use Mastodon, but some people went somewhere else or some people didn't even try to create a new account [elsewhere], so it's kind of a little bit all over the place now and there's not a central platform." Several participants noted that they had found a group of fellow scholars had moved to LinkedIn, but that platform was seen as much more limited in terms of the types of information or audience available and due to a mismatch in values. Only one participant, P15, suggested he knew of a specific disciplinary research community still actively using Twitter/X to reach each other and the public, although still with some attrition, with some shifting to startup alternative Bluesky.

## Sustainability

The second theme to emerge from the focus groups was a need for sustainability. This theme relates to the previous one on technology fatigue and burnout inasmuch as stable, sustainable platforms would help to reduce the need to continuously learn new platforms to replace old ones, or to redo work. For example, P6 expressed a sense of being "anxious" due to the HSS Commons still officially listed as being in "beta," despite it being a very functional prototype, and he were worried about doing significant work to move a research group's work there if it meant needing to redo it: "you don't want to do that work and then lose that work." P10 suggested a similar concern.

Beyond the issue of avoiding redundant work, though, participants wanted to be sure that the contents of their work (public documents or records for groups like scholarly societies) would be maintained as part of the academic record and that the broader functional community supported by a site would persist. Sustainability in terms of preservation and persistent access related to issues of national infrastructure stability as well, with P1, P5, and P15 noting that researchers (themselves, their collaborators, or their audiences) in some countries had concerns about technical maintenance or growing censorship regimes, if not both. The HSS Commons's willingness to welcome researchers from outside Canada was seen as important from the perspective of protecting points of view and records of research that may face these challenges.

The need for that functional community points to another aspect the participants described as tied to sustainability: achieving a "critical mass" of users, as P13 put it. By attracting people to the site so that they and their research materials were there to be found in the same place, other users hoped that the platform would continue to exist and the community would be large enough to merit their efforts and contribution. Participants suggested transparent community governance but also a business plan were important to have a sense of the success of a platform, with many seeing corporate solutions as largely unresponsive to community needs due to prioritization of ad-driven "engagement" and monetization. Nonetheless, they also saw academic models as less likely to have a business plan.

#### Audience

Two related sub-themes emerged related to audience: reaching audiences and the promises or drawbacks of metrics for audience assessment.

#### Reaching audiences

The participants generally felt it was important to reach broader audiences with shared scholarly information, but also emphasized finding the right audiences and creating a sense of community. As P14 noted, "it really is hard to reach out to anyone except the usual suspects." His society was able to attract non-academic members to the group primarily through word of mouth. They felt social media was the method offered to address this problem, but they were not sure it was ultimately very helpful. While P15 noted a strong social media community in their discipline that sought to engage the public, he also noted this could have significant pitfalls due to politicization and misinformation. P10 summed up the general problem:

"... you want your work to be discoverable, but you don't want to lose like a sense of who your audience is, you know ... It's nice when people pick up your work that wouldn't normally, but also I think there's also a lot of it's difficult to write for that possibility when your work could be taken up by anybody and everybody and some bad faith actors and you don't know who and now you're responsible."

P11 echoed, "you want your work out there, but it also needs to be fostered in a community somehow." These statements relate both to the issue of bad faith actors but also a desire to be able to write to and share with specific audiences to be more effective communicators, something undermined by simple broadcasting to the "general public." The individual who described the fewest problems with non-academic social media, P3, used Flickr to share images from a digital repository.

The researchers most directly engaged with non-academic publics were generally working with particular targeted local communities or interest groups on types of engaged research. As P15 noted of projects he had worked with to produce OA community archives, these researchers "have a particular catchment area that they imagine as the public that they want to reach. And not merely the general public." This targeting meant the information was available to other audiences but the researchers had a clearer sense it was seen by the non-academic publics that would care most, and who may even co-produce that scholarly information. By contrast, research sharing with less targeted non-academic audiences rarely produced this sense of community. When it did, it happened in small group or one-to-one encounters that were unique to the researcher or the project. For example, P3 created analog art objects related to a digital repository project, and she then shared them with people in day-to-day life. P4 shared with individuals and small groups who joined virtually to watch him stream video games on Twitch and who often asked about his research, even asking him to read sections from written research during the stream.

The desire not just to share scholarly information out but also control the reach led to some appreciation for the granularity of control over the public status of different forms of content in the HSS Commons. P5 noted a frustration with systems with no ability to "selectively turn on and off user privileges" in terms of visibility of content. P11 noted that the ability of individual documents, projects, and groups, as well as specific profile details, to be made public or private made it more likely to foster community by allowing individuals or groups to share scholarly information with the appropriate internal or external audience. On the other hand, participants such as P6, P8, P10, and P12 felt that the ability to follow and get updates on the information shared by people they were following needed to be amplified in the HSS Commons in order to foster the communities that were there, including by serving as a way to help new members of the community connect and understand the social landscape.

At the same time as participants expressed a desire for some control over reach to avoid bad-faith actors, sharing infrastructure that was excessively institutional (particularly, institutional repositories) did not seem conducive to fostering community due to being locked down in unhelpful ways. These perceived constraints included a lack of login credentials for users outside the institution in most cases and a related sense that cross-institutional groups such as scholarly societies could not find a home due to not fitting the mandate of these systems either in terms of the breadth of users or of scholarly content supported. However, institutional branding was also seen as potentially off-putting to non-academic publics who they seek to reach: it can "just reinforce feelings that are already pre existing of who's holding the power," as P10 noted, although she went on to suggest a version of that problem could exist even in institutionally agnostic academic spaces as opposed to spaces that specific non-academic communities share control over.

## Metrics

The groups all raised the question of metrics during the sessions, and these discussions made it clear that there was an inherent tension regarding their use.

Participants wanted to know, regardless of the scope of the audience, that their information sharing was worthwhile, and they wanted to understand their audience better in order to shape more effective research sharing. As P2 noted, without any measurement of reach or impact, "we're just kind of throwing darts in the dark, you know, and we hope we're hitting the board somewhere, but we can't really tell if we're missing sometimes." For P4, knowing if there was a geographic concentration of interest could create opportunities for localized public outreach. Several participants noted some benefits in at least the principle of the kind of information provided by some commercial academic and popular social network platforms to gauge impact, noting that this information was used to sell these products to anxious academics.

Participants also described those corporate systems, however, as over-collecting information without regard for user privacy or even accuracy, using data and notifications to drive exactly the anxiety they seek to resolve. P6 described Academia.edu as promising connection while in fact "want[ing] to corner you and isolate you and take all your data." P10 similarly complained, "it's an anxiety producing culture" that "creates its own consumers." None of the participants specifically used the word "algorithm," but this comment reveals a concern with the capture of user data to drive algorithmic selection and promotion of content in many systems in addition to more general privacy concerns (*e.g.*, selling user data). Several participants had dropped specific corporate social media due to this cycle, or stopped using Google Analytics or other similar metrics services for sites that they controlled as a means to increase privacy. While generally participants believed academically governed sharing infrastructure would avoid using data to intentionally drive academic anxiety in the same way as corporate social media, they still wanted data collection to be done in a way that maximized respect for privacy and focused on understanding reach to audience and opportunities to connect. P2, although interested in metrics, was not keen to have the HSS Commons collect additional data but simply to better organize and summarize the information that was already available.

# Miscellaneous needs

While not generating the same extent of conversation as the themes above, a number of other needs to support academic communities also surfaced during the focus groups:

- Multilingual support, not only in the interface but in terms of the languages users could write in, was seen as key to fostering global research communities.
- Marketing was seen as important both in terms of getting the word out and fostering interest generally as well as in terms of fostering better user experience by having clear use case examples that could help scholars build a mental map of the different ways to participate and share content given the diverse sharing and community functionalities of the site.
- Participants made additional recommendations that indicated the importance of a strong user experience without usability challenges.

# Discussion

The interview themes suggest a variety of needs related to scholarly information sharing infrastructure in the humanities. One of these is broadly contextual: a need for a simplified platform environment for research sharing. Additionally, scholarly information sharing infrastructure needs technical and social solutions for longevity and preservation of work; the ability to reach audiences at different scales, from close collaborators and small research clusters to non-academic publics; minimally invasive means to assess audience interest in shared content; multilingual support for global scholarly communities; a successful marketing and outreach strategy; and a strong, simple user interface.

The need for a simplified scholarly information sharing environment due to technical fatigue is a major concern that this study identifies that would have been much harder to understand by simply looking at humanist use of one particular platform or platform type. This finding shows the value of looking at scholarly information sharing behavior from a more generally contextual perspective rather than focusing on specific technologies. However, specifically because it is not tied to one specific platform solution that a group controls, the problem is systemic and hard to solve. The study confirms ideas suggested in the blog post from the Humboldt Institute that open science infrastructure faced problems of fragmentation as a "political economic" issue (Hasani Mavriqi, 2020). The present study, though, ties that fragmentation to what the blog authors call a separate "technical" issue in a lack of user engagement that leads to "isolated solutions based on very specific requirements that are ill-suited for broader use." Fragmentation and overspecialization go hand-in-hand.

With the numbers of research and scholarly communication startups identified by Campfens (2019), the startup-focused boom and bust cycle of platform innovation is likely a major driver of technical fatigue, making it hard to sustain communities of practice. The sense of Twitter/X as unusable post-Musk, and the dispersal of its communities across other solutions, made this particularly acute in the focus groups in terms of sharing scholarly information with non-academic audiences as well as academic ones: while Twitter/X was like other tools relatively specialized in function, it had allowed reach to a broader mix of audiences as opposed to alternatives. In the time since this data was gathered and since the 2024 United States election, there has been a new wave of academics leaving Twitter/X with perhaps more focus on a shift to Bluesky, though it remains to be seen if it resolves this gap (McIntyre, 2024).

The creation of a single platform for all sharing needs for different audiences in the humanities is unlikely. However, the need for a simplified scholarly information sharing environment suggests some promise for academically governed sharing cross-functional platforms, whether the HSS Commons or otherwise. To do so, developers must overcome the platform fatigue and skepticism that is already deep-rooted in the academic community and convince people to try something that may, on first glance, appear like just the latest platform fad. Bringing this functionality together in one place pairs well with access controls that facilitate different levels and types of research sharing, including those that qualify as peer-to-peer information exchange as well as targeted and untargeted sharing out to broader audiences, or information dissemination. In that regard, the user needs identified in this study validate the motivations that led to the creation of the HSS Commons and similar research infrastructure initiatives, and the non-commercial nature of the platform may increase confidence in its commitment to sustaining community and content over treating consumer data and captured attention as the primary product.

Nonetheless, the discussion related to these themes also points to some challenges for infrastructure supporting open social scholarship, particularly as it relates to reach and engagement with non-academic audiences in the spirit of openness. Engagement with non-academic publics, specifically when they are not community partners, can invite challenges with misinformation that range in intentionality and severity, including direct attacks from communities opposed to specific research findings and themes. In other cases, scholars may face challenges of censorship from governments, or from platform providers themselves.

Even absent these problems, the participants in this study noted the difficulty of finding the right ways to connect to the publics that would care most about their work beyond simply making things available and hoping people would find them. Unlike formal academic journals, for example, that may register with indexing and discovery systems to improve reach to the particular disciplines that could care about their work, participants did not see informal means of sharing scholarly information online that helped to engage the communities they wanted to reach. They saw the openness of academically governed open social scholarship platforms as likely to help facilitate the creation of communities of scholars, but were less clear on how they might reach non-scholarly communities.

Echoing Chiarelli, *et al.* (2019) on preprint repositories in the sciences, participants also raised issues of sustainability. While in some ways academically governed infrastructure was deemed more reliable in terms of their governance models and values commitments including preservation, they also expressed concerns about funding that have arisen in more general conversations about new models of open scholarship infrastructure. Due to the precarity of academic labor in general and the conditions on their campuses, scholars are very aware of the funding issues faced by infrastructure initiatives that have been identified by those working on open infrastructure initiatives (Goudarzi, *et al.*, 2021; Hasani Mavriqi, *et al.*, 2020).

This study confirms trust as a major factor in information sharing in the context of humanities scholars' information behavior, following Wilson's (2010) early observations about information sharing studies in general. Moreover, the desire expressed for research to be "fostered in community," to adopt P11's phrasing, shows a desire for what Pilerot and Limburg (2011) observed among their earlier group of design scholars over a decade ago, where information sharing "create[d] a positive sense of community spirit". However, these issues of trust and the resulting sense of community it creates have evolved due to calls to share information about scholarship through engagement with new audiences who may range from enthusiastic to skeptical of academic expertise, to openly hostile to research knowledge and seeking to undermine it through political pressure campaigns. While open scholarship platforms such as the HSS Commons may foster similar forms of community as those observed by Pilerot and Limburg (2011), or by Genoni, et al. (2009) among European studies scholars, those scholars were talking about negotiation of trust within dispersed research domains made up of individuals with shared disciplinary assumptions and goals of advancing scholarship. When engagement with non-academic audiences takes priority, it may call for different infrastructures for scholarly information sharing. Impact and trust may be greatest when specific non-academic communities can be defined, when they are engaged on their own grounds, and when the outputs are shared openly when appropriate but through targeted mechanisms.

### Conclusion

This study confirmed that perspectives of the participants matched the goals and philosophies of the creators of infrastructure for open social scholarship, including those related to fostering noncommercial solutions, availability of scholarship to broader audiences while offering control over access when necessary, and sustaining and preserving the scholarly conversation. They also pointed to participant awareness and concern over issues of funding that may affect sustainability, and identified a need for better solutions to reach specific non-academic publics beyond making content open.

Further research and development of such delivery mechanisms for more targeted informal scholarly information sharing to publics (rather than broadcasting, for example, on general social media sites or through the simple fact of OA publication) seems necessary to foster the kind of impact on non-scholarly communities that advocates of open scholarship often strive to achieve. Development of new platforms and tools in this area needs to consider the issue of divided attention and may best maximize impact by helping to disseminate open information from existing sources rather than create new services from scratch. Further research may also be warranted on how scholars divide attention between the many services for information

sharing they have at their disposal, and how to minimize the negative impacts of the resulting technical fatigue on workflow and willingness to engage. If a problem with research infrastructure has been fragmentation into overly specialized tools, further research into information behavior beyond specific platforms or types of platform may help identify what functions pair most naturally.

Research on delivery mechanisms for scholarship to audiences (scholarly and nonscholarly) will also need to grapple with the ways social network systems, search engines, or other algorithms affect what shared content is even seen or by whom. Participants in this study only obliquely referred to algorithmic harms in their references to the ways academic social networks manipulated their own attention as contributors and amplified rather than reduced anxiety. Applying a typology of harms created by a scoping review of the literature by Shelby, et al. (2023), the concerns of participants in this study and those identified in discussions of the harms of corporate ASNS fall into the "interpersonal" category (online abuse, psychological harms, privacy attacks). However, many of the relevant systems (academic and nonacademic) use sorting algorithms to determine what shared content to display to what users, which creates the opportunity for a number of what the researchers call "social/societal" harms. Such harms include but are not limited to "information bubbles," blocking "alternate ways of knowing," and "systemic erasure of culturally significant objects and practices." [14] These all impact how shared information reaches actual potential audiences that scholars may wish to include in their communities. While the participants did not mention these societal harms directly, this may be due to the focus of the researchers' questions on information sharing rather than on information discovery and retrieval within these systems, which would bring those experiences more to front of mind.

Finally, related to these notes for further research, this study has implications for discussions of how to foster sustainability of solutions for information sharing on the Internet. A major recommendation of the Hasani Mavriqi, *et al.* (2020) report that opened this article, for example, was to include end-users in governance structures to ensure that solutions meet "community needs." Likewise, the focus on infrastructure governed by scholars has taken center stage in the open social scholarship movement and was voiced by participants in this study. Such inclusion is important to ensure that solutions fit community values, but ensuring that technical information systems meet community needs requires more than inclusion of a few members of that community on particular governing boards. These systems need robust research and investigation into aspects of information behavior and user experience to help inform those bodies, especially when they begin to reach beyond the scholarly public to more nonspecialist and varied publics.

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# Notes

1. Hasani Mavriqi, *et al.*, 2020, at <u>https://elephantinthelab.org/challenges-in-building-innovative-sustainable-and-open-research-infrastructures/</u>.

- 2. Campfens, 2019, p. 419.
- 3. Arthur and Hearn, 2024, p. 47.
- 4. McMillan Cottom, 2015, n.p.
- 5. Morrison, 2018, p. 62.
- 6. Genoni, et al., 2009, p. 106.
- 7. Arbuckle, et al., 2022, p. 397.
- 8. Pilerot, 2012, pp. 563-564.
- 9. Genoni, et al., 2009, p. 104.
- 10. Jensen, et al., 2022, p. 11.
- 11. Chiarelli, et al., 2019, p. 14, table 6.
- 12. Connaway and Radford, 2021, p. 358.
- 13. Lindlof and Taylor, 2019, p. 233.
- 14. Shelby, et al., 2023, appendix A, table 6.

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# Appendix

List of specific platforms or sharing mechanisms mentioned in focus groups: Newsletters

Instagram Twitter LinkedIn Facebook events Google Drive/Google Docs websites web projects Omeka websites research project pages Bluesky physical media: crafts, printed materials streaming gaming on Twitch institutional repository internal reporting system for university GitHub Pages and repositories Mastodon Flickr Webinars crowdsourcing platforms Academia.edu ProQuest (by default for dissertations) Figshare Zenodo Dataverse internal electronic file sharing tools blogs e-mail list serves **Open Science Framework** ResearchGate direct (person to person; person to small group) e-mail Slack conferences formal monographs, edited volumes, journals public events word of mouth

### **Editorial history**

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