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The Alignment of Open Access with FAIR Principles in Musicological Publishing and Teaching

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ABSTRACT

Open Access (OA) publishing and FAIR Principles both present opportunities to make music and music scholarship available to broader audiences and for innovative uses. This paper leverages findings from interviews conducted with music scholars about their perception of the opportunities, benefits, and disadvantages of OA publishing to explore how they might embrace FAIR Principles. While musicologists' engagement of OA is generally passive, their perception of it is positive enough that OA could be used as a starting point for a deeper understanding of FAIR Principles.

CCS CONCEPTS

• Digital libraries and archives;

KEYWORDS

Open Access, musicology, FAIR Guiding Principles for scientific data management and stewardship, Open Educational Resources

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1 INTRODUCTION

Open Access (OA) publishing and FAIR Principles both present important opportunities to open up music and music scholarship to broader audiences and innovative uses. In this paper we explore the implications of a recent study on the perceptions music scholars have regarding the opportunities, benefits, and disadvantages of OA publishing for how they might embrace FAIR Principles. After briefly discussing some of the ways in which OA and FAIR Principles intersect, we present findings from interviews with musicologists at various stages of their careers to establish how OA fits, or does not, with conceptions of scholarly communication in the discipline. We then explore the implications of our findings on musicologists' ability or likelihood to conduct and share their research in ways that adhere to the FAIR Principles.

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2 FAIR PRINCIPLES, OPEN ACCESS, AND MUSIC SCHOLARSHIP

The FAIR Guiding Principles for scientific data management promote the findability, accessibility, interoperability, and reusability of data, both by humans and machines. Open Access promotes free access (*gratis*) and reuse (*libre*) of data and publications. The FAIR Guiding Principles and OA intersect considerably, both in their principles and the processes for realizing them in practice.

The document that introduced “The FAIR Guiding Principles for scientific data management and stewardship” conveys that these principles may be most applicable in a scientific context [1]. Integrating big data into humanities and arts research is relatively new and the methods may still be perceived as experimental. There is a tradition of skepticism in the humanities for empirical methods, but scholars are nonetheless increasingly leveraging big data for diverse humanities and arts-related research projects [2]. Music encoding, annotation, and other digital endeavors have also proliferated in recent years [3, 4].

Despite this increase in digital projects and research in music, there are significant challenges to music researchers embracing FAIR principles. In their survey of musicologists' attitudes towards technology, Charles Inskip and Frans Wiering found that “Digital methodologies are apparently not yet well integrated with mainstream research practice” [5]. Alexander Refsum Jensenius identifies three challenges as file types, privacy, and copyright and licensing; he argues that a “good enough practice” may serve music researchers better than an attempt at strict adherence to the principles [6].

We suggest that as a subset of Open Science, engagement with OA represents a critical step towards researchers embracing FAIR principles. Publishing in, supporting, or otherwise promoting OA is likely to facilitate an understanding of Open Science and FAIR principles among music scholars. OA is most commonly associated with journal publishing, a scholarly communication system with which music scholars are well acquainted. Using this familiar format to highlight how OA publishing aligns with FAIR Principles may lend awareness to the importance of striving to make all research outputs and related data—whether journal publications, datasets, or music encoding initiatives—findable, accessible, interoperable, and reusable.

2.1 Findable

According to Wilkinson et al, to be findable: “(meta)data are assigned a globally unique and persistent identifier, data are described with rich metadata, metadata clearly and explicitly include the identifier of the data it describes, and (meta)data are registered or indexed in a searchable resource.” OA has similarly evolved best practices for findability. The use of the Digital Object Identifier

(DOI) for article and chapter-level OA works is standard, as is registering content with agencies like Crossref to establish DOIs and ensure that they are activated and updated. Although DOI is perhaps the most widely used unique identifier, digital objects may also have an identifier issued by a repository, journal, or other publisher. The DOI not only establishes an object uniquely and persistently, but also allows for tracking citations and user engagement. Rich metadata facilitates the discovery of content, regardless of whether it is OA. Many OA publishers and platforms share their metadata with indices such as the Directory of Open Access Journals (DOAJ), which indexes *Current Musicology*, for example. Participation in such indices promotes findability of OA content in internet search engines, library catalogs, and other platforms for discovery.

2.2 Accessible

According to Wilkinson et al, to be accessible: “(meta)data are retrievable by their identifier using a standardized communications protocol, the protocol is open, free, and universally implementable, the protocol allows for an authentication and authorization procedure, where necessary, and metadata are accessible, even when the data are no longer available.” Free and persistent access is also central to OA. OA repositories, whether disciplinary or institutional, promote accessible (meta)data using standardized communications protocol. Institutional repositories often allow for authentication where necessary, and ensure that metadata remain accessible, even when data or content are not.

2.3 Interoperable

According to Wilkinson et al, to be interoperable: “(meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation, (meta)data use vocabularies that follow FAIR principles, and (meta)data include qualified references to other (meta)data.” The Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) specifies criteria that must be met in order to allow third-party systems to harvest metadata from OA repositories. OAI-PMH facilitates not only interoperability, but also the findability and accessibility of OA meta(data) on diverse online platforms. Interoperability and standardized definitions and procedures are very much a part of OA platforms and tools, such as DOAJ and Sherpa Romeo.

2.4 Reusable

According to Wilkinson et al, to be reusable: “(meta)(data) are richly described with a plurality of accurate and relevant attributes, (meta)(data) are released with a clear and accessible data usage license, (meta)(data) are associated with detailed provenance, and (meta)(data) meet domain-relevant community standards.” The libre aspect of OA speaks to its reuse. Several OA journals and platforms have adopted Creative Commons licensing as a user-friendly means by which authors can stipulate how exactly their content can be used and specify any restrictions on reuse. Some sub-disciplines of music are producing excellent OA journals that embrace high community standards, especially music theory. This practice arguably promotes engagement with OA music theory content and supports reuse.

3 ABOUT THE STUDY

In interviews with twenty music scholars active in the United States and one in Canada, participants shared their interest and reservations about teaching with and publishing OA or affordable/open educational resources (A/OERs). The twelve musicologists we interviewed discussed the availability of OA publishing opportunities that exist in their discipline, how these are perceived, how they are evolving, and how they compare to opportunities in other music subdisciplines. Participants also spoke to ways in which institutions support or value OA. Open Access is defined differently in various contexts. In the context of the interviews we conducted, we defined OA as “publishing or sharing your work in a venue that allows readers to access it free of charge by any legal means.” We acknowledge that framing OA exclusively through the gratis (free to access) aspect and not libre (free to use) is a potential limitation to exploring connections between OA and FAIR Principles, which are, of course, extremely interested in reuse. The interviews investigated the experiences and motivations that led music scholars to publish their work OA as well as factors that have discouraged them from doing so. Because we also sought to learn more about the types of instructional resources faculty use and their motivations for doing so, we asked about the kinds of course materials they assign and who assigns them.

We were awarded a University Research Grant to conduct this study, which the Illinois State University Institutional Research Board reviewed and granted exempt status. We identified interested and eligible participants by developing a screening survey and distributing it to online disciplinary communities of higher education music faculty. The interviews lasted around 45 minutes each and were conducted and recorded via Zoom. Participants received a gift card after completing the interview and were invited to provide feedback on an initial writeup of our findings to promote validity. While study participants represented a variety of music subdisciplines—including Musicology, Theory, Librarianship, Performance, Education, Cognition, and even American Studies—musicologists were the largest single group by far, making up over half the total participants. A few participants had multiple affiliations, holding appointments at more than one institution, or were primarily independent researchers who occasionally taught courses for a college or university. A couple participants held an academic position other than faculty. The interviews focused on the OA publishing and teaching practices of participants and did not explicitly address FAIR principles. The complete interview instrument and research findings will be published separately. [7]

4 STUDY FINDINGS – PUBLISHING

Most participants indicated that OA is not a priority; venue, fit, and audience are. A handful of participants noted that they do keep track of OA venues and prioritize them. Several participants indicated that although OA had not been a factor in selecting publication venues, their OA publications are among their most read and engaged with. Participants appreciated the global impact and meaningful transmission of OA publishing. Minimizing cost to readers is a consideration for many scholars, some of whom shared concerns around privileged affiliations. Fewer participants noted concerns around OA publishing costs such as article processing charges. A

few participants identified changes in their publishing behavior after being tenured, when they had the freedom to prioritize OA over prestige. Several participants made connections between OA and pedagogy. Green OA is confusing and fraught, but also beneficial. Several noted that they use Academia.edu to share their content, explore the work of others, or both. Most of those who mentioned Humanities Commons did so with concerns about how hard it is to navigate and lack of plans or buy-in. Institutional repositories and ResearchGate were mentioned by very few.

Most participants' reluctance surrounding OA had to do with the availability of quality OA journals in specific domains. Publishing decisions have implications for tenure and promotion (T&P) and career advancement and are accordingly of great importance. Some expressed concerns about the peer-review and editing processes for OA materials and wondered if they were as rigorous as those used for traditionally published materials. Only a handful of participants mentioned Article Processing Charges at all, let alone as a deterrent to OA publishing. But concerns around the costs and realities of scholarly communication were raised, with one participant asserting that people should pay for the work done by authors and publishers.

Musicologists largely reported enthusiasm and interest in OA, sharing that "Open Access is starting to be looked at as just another publishing opportunity rather than a lesser publishing opportunity." Several participants noted that music theorists are ahead of musicologists in terms of excellent OA venues, including society journals and platforms for peer-reviewed scholarship. Several participants raised questions and concerns about OA monographs, considering the OA model more experimental for manuscripts than research articles. Some felt that junior scholars may be less comfortable pursuing an OA monograph than scholars with more established reputations.

Participants reported minimal support for OA publishing at their institutions, though not all participants are in positions that require conducting or disseminating research. Nonetheless, many participants who must publish do not have institutional support for OA publishing or indicated that it is not relevant to them. One participant expressed a desire for their institution to better educate scholars about options for OA funding, and another voiced concerns about competition and uncertainty surrounding available OA funding. Most participants mentioned T&P, including those who are not affiliated with a university. Most participants indicated that OA journals are not treated differently in T&P evaluations, even if they had been in the past. Institutional repositories, digital scholarship centers, and disciplinary societies were mentioned by a few participants for their OA publishing support. Only one participant spoke to publishing digital projects and their needs around metadata and data sets.

5 STUDY FINDINGS – TEACHING

Participants voiced strong opinions related to textbooks. Many participants use a textbook and anthology for sequences but use a variety of materials for upper-level undergraduate courses. Strategies to address affordability include placing a copy on reserve in the library, using a single textbook for several semesters, and assigning as much of the textbook as possible. Most participants routinely

assign some materials that are open or available to students at no extra cost. Few, however, have incorporated an open textbook. Participants emphasized the difference between adopting open educational resources (OER) versus assigning affordable materials. Many participants have chosen not to replace traditional textbooks with OER due to the difference in quality. Nevertheless, a few participants have created or are currently working on OER to use in their courses. One received a grant from their university library to develop an OER for their music history survey classes.

Most participants agreed that commercial textbooks are expensive and contribute to financial hardship for some students. A few participants noted that students do not understand how to engage with the textbooks and attributed this to the ways in which textbooks are written. The overwhelming concern is that textbooks limit the intellectual freedom of the instructor. Textbooks align teaching outcomes and objectives across multiple instructors and semesters and provide ready-made assignment and testing material, thus realizing time savings and ensuring consistency. Unfortunately, however, they also force individuals into teaching content and methods that may not align with ideal pedagogical practices. Participants who use textbooks frequently supplement them to address gaps in coverage or provide additional support for students. Textbooks also leave little room for non-western traditions and contemporary perspectives. This comes into conflict with endeavors to teach diverse musics from a multiplicity of perspectives and to present learning materials differently than in the past.

Concerns about A/OER materials centered around stability, quality, and availability. Participants noted having encountered previously open materials becoming paywalled or disappearing entirely. This happened to content in an array of formats, from journal articles and eBooks to videos on YouTube or institutional library platforms. Concerns about quality emphasized that many music appreciation texts do not seem to have been written or peer-reviewed by musicologists and do not include diverse representation. However, more than one participant mentioned a particular open textbook in music—*Resonances: Engaging Music in its Cultural Context* by musicologist Esther Morgan-Ellis—as being well done, and attributed its quality, in part, to input and feedback the author received from peers in the American Musicological Society (AMS) pedagogy group. Finding relevant, quality open materials was a barrier for most participants. Participants highlighted that commercial textbooks include source readings, notated music anthologies, testing materials, sound recordings, and other content. Searching for freely available and stable sources for all of these formats requires time and flexibility.

Many participants recognized textbook affordability as a problem and indicated that most of their colleagues did as well. Discussions about textbook affordability have led several participants and their colleagues to select books that are more affordable, use textbooks across multiple courses and/or semesters, or to make texts available via the library. Some participants identified the need for further discussion of textbook affordability in scholarly societies as well as the need for recognition for creating or adopting affordable resources.

Most participants were not aware of any institutional recognition or reward for creating or integrating OER. Several participants spoke to the reality that music academic publishing is still staunchly

prestige-based. Some participants work at institutions that offer grants for writing or adopting OER. One participant who received such a grant noted that they had spent far more time on the project than was funded. No participants mentioned FAIR principles with respect to either publishing or teaching.

6 IMPLICATIONS FOR FAIR PRINCIPLES

This study revealed a number of perceptions and behaviors related to OA that have implications for the extent to which musicologists might seek to make their scholarship more findable, accessible, interoperable, and reusable. Study participants lacked confidence in scenarios related to copyright and licensing, such as depositing copies of their publications in online repositories. Confusion surfaced in topics surrounding green OA. One participant commented, “I’m not really sure how it works. I have work on Academia.edu, but I only link to my materials that are already online, I wasn’t sure because of copyright issues. I’ve noticed colleagues posting their proofs, but I haven’t. I’m most comfortable with people accessing the publisher’s PDF and would rather people not see other versions.” If scholars become more aware of open licensing structures like Creative Commons, they may feel more equipped to determine if and how they can reuse others’ work, or more able to determine what they are allowed to do with their own work. This awareness may lead them to examine copyright agreements with publishers more carefully and seek out publishing venues that offer authors more favorable licensing terms. The lack of confidence expressed by faculty regarding copyright, different online venues for sharing their scholarship, and which version to share imply opportunities for education and outreach on these issues.

When speaking with music faculty about publishing OA, it is important to consider each scholar’s tenure and promotion status and where they are in their career, particularly if the institution values certain publishing venues and kinds of work over others. Participants noted that many key musicology journals are not OA and “Tenure and promotion requires the best.” Those not in a tenure-track position have different considerations and may reach different conclusions. One musicologist shared that publishing multiple OA articles is a better use of time and has more impact than publishing a single monograph. These examples highlight the tension between the prestige of publishing for T&P requirements and the desire to engage broad audiences and have an impact on the discipline. The second example demonstrates the importance of findability and accessibility to the decision-making process that musicologists undergo when selecting a venue for publication.

A handful of participants noted librarian assistance in creating, funding, or identifying OER, or supporting software and applications that enable their discoverability and interoperability. The challenges participants encountered around previously open materials becoming paywalled or disappearing entirely are also certainly relevant to FAIR principles. One participant created their own digital library of instructional materials after having learned the hard way that digitized content, even from an academic library, sometimes disappears. One participant’s library offers publicity and promotion of OER that are written by institutional authors and published by the library. Two participants noted services and support offered by institutional centers for digital scholarship. Others

mentioned library support for creating digital collections, running an institutional repository, and hosting OA journals, and two participants commented on transformative agreements their libraries had signed with publishers. Music librarians at institutions who offer these services may want to promote them to faculty and collaborate with their library colleagues who manage these programs as needed. Institutions that support publishing, whether of monographs, journals, data sets, or other digital projects should be able to demonstrate how their practices adhere to FAIR principles.

The data needs of music scholars are evolving. Only one participant in our study spoke to the importance of metadata surrounding the digital projects in which they were involved. There is not currently a widespread awareness around FAIR principles or data stewardship in musicology. In fact, in speaking about versions of articles with scholars, we heard that some were highly uncomfortable with anything besides the version of record being digitally available. The culture of transparency around iteration is more established in fields that deal more frequently and explicitly with (meta)data management. [8] It is still relatively uncommon for music scholars to curate or generate large data sets to work with or to share their data or works in progress, though A Directory of Digital Scholarship in Music highlights a growing list of open data sets, digital editions, software, and other digital projects and resources specific to music. [9] Musicologists are unlikely to consider working with primary sources as working with or generating data, and may not see value in openly sharing their annotations or analyses that led to a final publication. Data curators can help by speaking with music scholars about the benefits of making their materials and research process available to others through online repositories. [10] As engagement with big data becomes more common place, establishing best practices aligned with FAIR principles will be essential.

7 CONCLUSION

Musicologists largely hold positive perceptions about OA publishing and are eager to integrate open and affordable materials into their instruction. Nevertheless, as many increasingly engage with OA publishing as scholars and teachers, it is important to know that they do so, for the most part, rather passively. Most participants in our study were not creating OER for their classrooms or actively flipping to OA society or commercial journals with which they are affiliated. Accordingly, it seems unlikely that most will understand and work within the FAIR principles in the near future. Jensenius suggested “good enough” practices to get started with FAIR principles [6]. We propose leveraging conversations around and support for OA to promote deeper understanding of the FAIR framework. With significant and growing support for OA via Plan S, Open Science is gaining significant momentum. If institutions, societies, and information professionals use conversations about OA to show the importance of FAIR Principles to the work and practice of musicologists, the findability, accessibility, interoperability, and reusability of music and music scholarship would only be enhanced.

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