



# Attitudes and uses of archival materials among science-based anthropologists

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## Abstract

While archival user studies have largely focused on humanities (and adjacent) scholars, this paper focuses on anthropologists engaged in scientific research. Based on qualitative results from an open-ended survey, we investigate how science-based anthropologists perceive and use archives in their work. We ask: How are science-based anthropologists and archaeologists reusing archival data in their research? What difficulties or barriers do they encounter in reusing archival data in scientific contexts? What attitudes or understandings about archival research are held by science-based anthropologists and archaeologists? Our findings primarily add to the body of literature about user experience in archives and more broadly to the emerging literature on archival data reuse. Major findings include (1) barriers and gatekeeping legacies that impact archival research and the ability of researchers to reuse data and (2) mixed perceptions about archives among researchers. We also discuss suggestions made by these communities of practice, and the ways that barriers to archival data reuse may stem from a lack of knowledge about core archival and information infrastructures among researcher communities. Together, this research showcases possible (re)uses of important primary source data in archives among scientific communities but highlights that barriers to access and misperceptions create a gap in exploiting that potential. We argue for a “re-imagining” of anthropological archives as relevant to contemporary communities and scientific pursuits toward a richer scientific research environment.

**Keywords** Data reuse · Archives · Anthropology · User studies · Communities of practice

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## Introduction and review of the literature

The discipline of anthropology has had a longstanding interest in archives as key sources of primary data, beginning in the 1960s but especially since its “reflexive” turn in the 1980s (Marsh et al. 2019, pp 7; Clifford and Marcus 1986; Marcus and Fischer 1986; Stocking 1983, pp 3). In the 1990s, the Council on the Preservation of Anthropological Records (CoPAR) sought to encourage anthropologists to (1) “identify and locate primary anthropological data” (2) “encourage preservation”; and (3) “foster the use of documentary records with anthropological value” (Parezo 199, pp 277). Yet, much of this focus of the disciplinary interest in archives in anthropology, in part due to its stemming from historical and reflexive interests in the field, has been focused on the fields of cultural and linguistic anthropology, which are very much grounded in humanistic, historical and social science methods (See Marsh et al. 2019, pp 6–10; Parezo 1999). Archaeological and biological scholarly communities tend to privilege original fieldwork or laboratory work as core data collection and analysis sites and tend to align their analysis with scientific methods, making archival collections a less obvious source of relevant data.

Yet, anthropology is increasingly interested in data reuse. That is demonstrated in the literature, which stems from open access movements (Björk and Solomon 2012; Harris 2012; Kozak and Hartley 2013; Eve 2014); interests in data sharing (Mulligan et al. 2022; Turner and Mulligan 2019); as well as via wider interest in ethical and sustainable access to fieldnotes, often containing anthropology’s primary data (Schmid and Cliggett 2011; Emerson et al. 2011; Kuklick 2011). It is via this interest in data reuse that we are beginning to see archives as sites of import for scientific communities within anthropology (e.g., bioarchaeology, biological anthropology, forensics).

A few definitional notes for clarity: throughout this paper, we refer to ‘data’ as the information *contained in* or *documented by* archival collections, here primarily in physical form but increasingly in electronic media. Throughout the paper, we are primarily referring to personal papers and other primary research documentation that has been acquired by archives and special collections, rather than documents held in institutional records. There are some notable exceptions, however, in records of the Bureau of American Ethnology, which in the 19th and early twentieth century did include research and field documentation within its institutional records.

An increased interest in archives, particularly digital archives, is reflected in the creation of many digital repositories for storing and sharing data collected in the field, which is of course increasingly recorded in digital formats. Many of these are archaeological in nature (e.g., tDAR, Alexandria Archive Institute, AnthroDataDPA, Registry of Anthropological Data Wiki), but increasingly these repositories are being created to serve biological anthropology and forensic sciences as well. For instance, the Forensic Anthropology Database for Assessing Methods Accuracy (FADAMA) has been created to share case reports and associated data, including biological profiles of deceased individuals; the Subadult

Virtual Anthropology Database (SVAD) is a repository dedicated to contemporary skeletal and dental data. The National Institutes of Health also sponsors an online data repository called GenBank that holds sequence data, used in studies by physical or biological anthropologists, and the Open Humans Network and Platform for Engaging Everyone Responsibly are enabling the aggregation of research data for physical and biological anthropologists (Turner et al. 2018).

Especially in archaeology, there is an increased interest in the reuse of collections and data given the field's "curation crisis" (Buchanan 2016, pp 40–47; Childs 1995; Marquardt et al. 1982; Merriman and Swain 1999; Miller 1999). The mass of material backlogged in museums and repositories have driven the recognition that the field might need to shift to relying on archives (although here, usually to mean museum collections more often than archival documents) as opposed to new collecting (Buchanan 2019; Bauer-Clapp and Kirakosian 2017). Collection and data reuse has become especially pressing in light of ethical concerns about the field's preoccupation with continuous new fieldwork and the colonial nature of that endeavor (Mickel 2021; Bruchac 2019; Redman 2016; Zborover 2015).

Biological anthropology of course faces similar ethical considerations for new collecting, although ethical protocols in both fields have made significant strides (Turner 2005; Turner et al. 2018). In biological and forensic anthropology, archival papers are increasingly used by scientists and repatriation staff to facilitate the repatriation of ancestral remains through the Native American Graves Protection and Repatriation Act (NAGPRA) (Fforde et al. 2015; Fforde et al. 2015; Colwell 2017; McKeown 2013). Anecdotally, archivists are seeing growing numbers of researchers from these fields coming to the archives to reinvestigate previous data or prepare new fieldwork.

Thus, it appears we are seeing a convergence of these trends across science-based anthropological disciplines such as archaeology, bioarchaeology, forensics, biological anthropology, and so on. This interdisciplinary movement mirrors wider trends in data reuse in scientific communities, which is of current interest to information scholars (see Shiue et al. 2021a, b; Wofford et al. 2019; Pasquetto et al. 2019; Pasquetto et al. 2017; Palmer et al. 2011; Wallis et al. 2013). Increasingly, across the sciences, there is a growing attention to data reuse via historical documentation—mining archives and other historical primary sources for data sets that can be utilized in contemporary research (see Shiue et al. 2021a; Wippich 2012; Brunet and Jones 2011). The expanded interest in data reuse has developed in tandem with increased requirements for data management plans from government funding organizations, and the push in the US at the national level to make original data accessible (Holdren, OTSP 2013, 2014; Turner et al. 2018) is also bolstering this interest. Still there exists a lack of standardization and shared practice around engaging in ethical and accessible data curation, especially regarding reuse and recovery (Shiue et al. 2021b).

This paper, therefore, draws attention to these scientific communities that have been understudied despite both these wider trends and a growing interest in information fields in these specialized user communities. There has been some information scholarship in this vein on the reuse of archaeological data in the form of museum collections (Daniels 2014; Kriesberg et al. 2013), but very little is known about

disciplinary practices and perceptions regarding archival collections in the form of paper, notebooks, photographs, audio recordings, film, and the like. Archival user studies, too, have largely focused on how humanities—and adjacent—scholars use archives (e.g., Torou et al. 2010; Anderson 2004; Tibbo 2003; Toms and Duff 2002). To date, few studies focus on the practices of using archival data within anthropology’s scientific communities.

Therefore, based on qualitative analysis from open-ended survey questions, we investigated how science-based anthropologists use and perceive archives in their research, focusing on three research questions: How are science-based anthropologists and archaeologists reusing archival data in their research? What difficulties or barriers do they encounter in reusing archival data in scientific contexts? What attitudes or understandings about archival research are held by science-based anthropologists and archaeologists? Our findings primarily add to the body of literature about user experience in archives and more broadly to the emerging literature on archival data reuse.

## Methods

This project emerged from a more extensive study undertaken by the National Anthropological Archives (NAA). The NAA, part of the Department of Anthropology at the Smithsonian’s National Museum of Natural History (NMNH), is one of the world’s largest archival repositories dedicated to the history of anthropology and the world’s cultures. Collections at the NAA include the papers of numerous prominent anthropologists, one of the world’s largest collections of international Indigenous language documentation and ethnographic film, a large collection of Indigenous and plains artwork, as well as documentation of original fieldwork from all four anthropological disciplines, which in the Americanist tradition includes archaeological, biological, cultural, linguistic anthropology disciplines (Marsh et al. 2020).

In 2017, the NAA began a 3-year funded grant from the National Science Foundation, “Re-aligning Archival Practice and Anthropological Needs: Improving Data Discovery at the National Anthropological Archives” (#1627066) that sought to increase the discovery and use of anthropological collections, taking into account the needs of both researchers and repository archivists (see a fuller description of the wider project in *Anthropology Today* (Marsh et al. 2021)). The project was carried out in two phases: (1) an environmental scan and semi-structured interviews with NAA Users, and (2) a national survey with key user groups identified in phase one. Both phases were conducted by Diana Marsh, then a postdoctoral fellow, in collaboration with NAA staff, and were approved via Smithsonian IRB in the Office of Sponsored Projects. Phase one findings (Marsh 2019) shaped the design of the phase two national survey: the team sought to explore whether many of the barriers and perceptions identified in semi-structured interviews would hold true on a larger scale. The team, therefore, designed a national survey aimed at the archives’ top two user groups: professional anthropologists and Indigenous community users. Marsh collaborated with the two most prominent national professional organizations of those users, the American

Anthropological Association (AAA) and the Association of Tribal Archives, Libraries, and Museums (ATALM) to develop and distribute the survey. The survey instrument was developed based on information survey methodologies (Hank et al. 2016), previous archival studies (including Anderson 2004; Conway 1994; Tibbo 2003; and Yakel 2002), and the Archival Metrics project (<https://sites.google.com/a/umich.edu/archival-metrics/>, also see Duff et al. 2010). We also designed questions based on phase one findings: several questions were designed to either replicate or expand upon questions from long-form interviews, to triangulate that qualitative data. The survey was designed with a mix of open- and closed-ended questions.

Marsh developed the draft survey in collaboration with organizational partners at AAA and ATALM, and with Smithsonian NAA and Department of Anthropology staff. To ensure points of comparison, we constructed the ATALM survey to be as close in content to the AAA survey as possible. However, we had to account for a few differences, as the ATALM survey required additional attention to cultural needs, and was also collaboratively pretested and developed with Council members from the Native and Indigenous Studies Association and members of the staff of the Smithsonian National Museum of the American Indian. We are continuing separate analysis of the ATALM survey and preliminary results of that analysis were presented at the 2022 Association of Canadian Archivists meeting (Davis 2022), which focus primarily on barriers to access and use for Native and Indigenous community-based researchers. This paper, focusing on the interests of anthropologists, will discuss only the survey distributed to the AAA.

After development and pretesting, we revised the AAA survey and piloted it with 20 participants, half internal staff in Anthropology and half external professionals. The final survey was administered via SurveyMonkey to AAA's networks via its Communities platform and section membership lists, from July to September 2019. The survey was started by 183 people with a completion rate of 83%. The final survey contained 33 questions, of which 17 were open-ended. Sample questions included:

- (1) In your understanding, are archives used as primary research sites in your field or line of work? Why or why not?
- (2) How would you rate your familiarity with archives and archival collections?
- (3) Describe any other barriers you have experienced in conducting archival research.
- (4) In your opinion, what would archival collections or their related catalog records contain that would make them more relevant to you and your work?
- (5) In your opinion, what could archival institutions do to improve their accessibility?

Starting in early 2021 Diana Marsh and Selena St. Andre, a former graduate research assistant at the University of Maryland, began analyzing a subset of the AAA survey data—those who identified as working in science-related fields of anthropology, emphasizing the archaeological and biological disciplines. To

**Table 1** Science-based anthropologists sorted by discipline

American anthropological association discipline		
	Participant affiliations	Number of participants
	Archaeologists	28
	Biological Anthropologists	15
	Environmental Anthropologists	1
	Medical Anthropologists	5
Total	4 Disciplines	49

**Table 2** Science-based anthropologists sorted by AAA section membership

American anthropological association section memberships		
	Participant affiliations	Number of participants
	Archaeology Division	24
	Biological Anthropology Section	8
	Evolutionary Anthropology Society	4
	Society for Anthropological Sciences	23
	Society for Medical Anthropology	9
Total	5 Sections	68

begin our analysis of science-based anthropologists, we applied for and received an Independent Ethics Committee Authorization Agreement to allow University of Maryland researchers to access the data collected as part of the Smithsonian project, as Marsh also maintains a Research Associate status with the NAA.

We identified relevant AAA survey participants based on two main closed-ended questions: one which asked them to identify their disciplinary affiliation, and the other which asked them to identify their subdisciplinary group membership. All participants that self-identified themselves as archaeologists, biological anthropologists, medical anthropologists, or environmental anthropologists were included. In addition, we included those members that identified themselves as members of the following AAA sections and interest groups, even if they were also members of other unincorporated groups or did not self-identify as being primarily concerned with a science-based discipline: Evolutionary Anthropology Society, Archaeology Division, Biological Anthropology Section, Society for Medical Anthropology, and Society for Anthropological Sciences (see Table 1 and Table 2). Several participants overlapped. For example, participants may have self-identified as biological anthropologists and also been members of one or more science-based sections. One limitation of note is that although we used section membership to identify a part of our subgroup, all respondents identified in this way may not necessarily self-identify as anthropologists focused on science-based research. From these two qualifications, we isolated a set of 62 respondents, or a little over one-third of the total survey participants.

Then, we used the qualitative coding software NVivo to analyze the open-ended questions answered by our subset of participants using a grounded theory approach (Charmaz 2008; Glaser and Strauss 1967). We iteratively developed a codebook, and coded responses within each question, which yielded major finding categories. Finally, we identified three main common themes from respondents which we will discuss in this paper: (1) barriers and gatekeeping legacies that impact archival research and the ability of researchers to reuse data, (2) mixed perceptions about archives among researchers, and (3) suggested improvements to archival access suggested by these communities of practice.

Throughout our analysis of the responses received from participants, we often found that not all participants had the same understanding about core archival and information infrastructures. Some of the beliefs participants expressed were not accurate of archives or archival practices. Despite this, we have included some of these responses to demonstrate that scientific researchers may experience barriers when accessing and using archival records due to these misconceptions. Explored at length in the discussion, this lack of knowledge among our subgroup of participants demonstrates the need to engage with users within scientific communities.

## Findings

### Finding 1—barriers and gatekeeping

The most prominent theme that emerged from our respondents was a strong perception and experience of barriers to successful archival research (and therefore the ability to reuse data) rooted in gatekeeping legacies. There were 193 unique responses and four categories that emerged, in which respondents noted barriers to the use of materials of interest. Respondent suggestions for improving barriers can be found in our third finding: Improving Access: Suggestions from these Communities of Practice.

### Search and discovery methods

For context, and from closed-ended responses, we learned that the clear top discovery pathway identified by our science-based participants—with 71% of these researchers listing it as their top choice—was following leads (such as footnotes, bibliographies, or textual references) found in books and articles. The next top three ways they discover and find archival materials are (1) directly searching the websites of repositories they believe might hold relevant primary materials, (2) contacting staff at a relevant institution and, (3) searching the Web using a search engine such as Google to locate relevant finding aids and collections.

The latter three of those choices do suggest that these researchers are using information-seeking approaches typically advocated by professional archivists. Yet, about a third of respondents noted difficulties relating to search and discovery. In part, that

may be because, when asked to share typical search terms they used to search for information in their current research, most described highly specific disciplinary subject terms. Some of these included specific names of places, civilizations or communities, or expeditions, such as “British Raj,” “Maya,” “Powhatan,” “Chaco,” or “Hyde Exploring Expedition.” Responses also included specialized techniques such as “maize agriculture.” Among medical and biological anthropologists, examples included subject terms relating to medical such as “medical ethics,” “obesity,” “mortality,” “assisted reproduction,” or “aDNA.” Others, especially in archaeology, were specific places, or terms dealing with the earth or navigation such as “mounds,” “river basin survey,” or “archival maps.” These findings are in contrast to the overall trend among academics found in our phase one interview study, where most were found to search for individuals’ or ‘record creator’ names. Of the third of respondents who noted challenges in searching and finding relevant materials, six were focused on how laborious it was to find collections or resources. Respondents further expressed that they found difficulties in using search tool interfaces and that variances in finding aids and web collections were prohibitive to the research process. Other respondents also expressed that search interfaces were not well-designed for users, with participant 10 expressing, “search tools aren’t designed with users in mind.”

One of the other main issues the participants found with researching in archives was that those collections relevant to their work are often dispersed among multiple institutions. For example, an anthropologist may have personal papers, institutional papers, and professional materials at three different repositories. Individual repositories that have one anthropologist’s papers may not know there are other materials elsewhere. Participant 3 expressed, “...I find that in the US, materials are haphazardly dispersed.” This issue is explored further in the Improving Access section.

A number of participants felt that discovery and use were limited by descriptive practices. Participant 1 found discovery prohibitive due to a lack of detail saying, “When all that is listed is a box of items and I am the first person to inventory those items, I wonder how many times the materials weren’t used previously because there wasn’t an inventory?” Participant 7 added, “While some collections have a decent description of what they contain online, most... seem to lack sufficient detail to know if it would be worthwhile to make a visit in person.” Other participants discussed the lack of key details in finding aids, such as researcher names or information about specific documents, noting that they desired item-level or “full” inventories.

Three additional participants specifically noted collection management issues that resulted in unorganized materials, further hindering discovery. Participants also found that discovery was stifled by materials being lost within the archives before they were able to review them, whether due to a mistake, poor collection management, or lack of sufficient funding to provide proper maintenance to the material.



## Costs of physical access

Of the total 62 respondents, 20 participants discussed physical access equity, where one-fourth stressed the high cost of visiting and doing research within archives. Three participants specifically emphasized this barrier for students or junior researchers, noting the need for institutional access to view materials. Although mostly a historical practice now, researchers may be pointing to the fact that some institutions used to have "serious researcher" requirements, or otherwise restrict access ability for students or early career researchers. Additionally, some may require letters of reference or other documentation to use materials—a generally outdated practice that has mostly been eradicated (Panofsky and Moir 2005; Overbeck 1993). It may be that these respondents reflected perceptions (rather than lived experiences) in these cases, but nonetheless, they reflect an overall assumption that archives are difficult to access. Cost and lack of financial support at junior career levels may also be an undercurrent of these responses. Other respondents specifically discussed physical access at the Smithsonian's NAA, which they said can be particularly difficult to get to because of its location outside of Washington, D.C.; that while public transport was a viable option, it is time-consuming and "eats into archival hours." Additional external barriers included geographical constraints and inaccessible building design. One participant stressed that archival institutions needed to better follow ADA guidelines to increase physical accessibility for in-person researchers.

## Time

Four participants also noted that the time requirement of archival research itself (beyond physically getting there, but undertaking the research) was a major barrier to reuse. One participant, for instance, said that, "finding the means to travel, physically review, and make relevant copies" presented a barrier to their ability to use archives. Three participants specifically commented on the difficulty of physically accessing and researching archival collections given the quick pace of their field's work. Three participants shared that the time it took to adequately research in archives did not meet the pace of work for most anthropologists, with participant 32 saying, "People have too much to do to use [archives] when they are still going to the field" and participant 5 saying, "[the] pace of work makes travel to archives (even locally) difficult." The distribution of related collections also adds to the time that must be dedicated to searching for and reviewing materials, exacerbating issues of access equity, as collections that are scattered throughout multiple institutions will require time and resources to adequately research.

## Collections restrictions and reuse

A little over a quarter of survey respondents also expressed frustrations when attempting to reuse archival data due to institutional collections restrictions—those common and required by factors such as donor restrictions or lack of processing. Six participants pointed out that reuse was difficult due to access and use restrictions placed on collections. Talking about these restrictions, researchers found it difficult to seek approval to use research materials in their own work when such policies regarding use and permissions varied from institution to institution. As participant 12 expressed, “It can be frustrating to deal with multiple institutions with very different policies about access to material and publication of the material. It would help if there was a more unified approach to/philosophy regarding access to archives.” In regard to staff interaction with researchers, four participants specifically pointed to archival staff creating significant research barriers. These barriers primarily resulted from inadequate reference assistance or limitations imposed on access to materials. To illustrate how staffing barriers and physical access barriers intersect, participant 29 shared that they experienced “inadequate assistance from archives professional[s] at archives too distant to visit, especially art museums.”

Responses about difficulties in reuse overlapped significantly with other barriers, including lack of funding (for both researchers and institutions), lack of digital access, reproduction issues, and difficulties of traveling to institutions.

## Finding 2—split in the field: archives vs. fieldwork

Among science-based anthropologists, perceptions about the importance or usefulness of archives for research were largely split. Even though 79% of respondents in this group stated that they had used archives in the past, and many noted the unique value of archival collections for research, about a third of respondents reiterated in open-ended responses that archives were *secondary* sources of information (whereas live, field-collected, or laboratory-based data is).

To get a sense of what these researchers were using and producing through archival research, the survey asked questions about what they had researched or used in the past. Respondents had an impressively wide range of research topics in which they were engaging with archives. These were as wide ranging as topics such as to human health, lithic classifications, Indigenous populations, ethnobotany, and rock art sites. Interestingly, respondent 7 said “reusing archival data for new research” was among their research topics. Among our subgroup, the three most important archival materials for respondents were (1) fieldnotes, diaries, or journals, (2) Photographs (prints or negatives), and (3) Reports, minutes, or other organizational documents. Additionally, archival research aids in many outputs for science-based researchers. Among our respondents, the top five outputs were (1) Publications (e.g., articles, books), (2) Community programs, (3) Social media, (4) Class assignments, and (5) Blogs (or non-academic publications). Other outputs included exhibits,

films, curriculum development, advocacy materials, public policy reports, and public or conference presentations.

Despite the varied research topics and outputs of these respondents, many still had differing perceptions about what significance archival research had in their research. One hundred and eight unique responses were identified as relating to this cognitive dissonance. This second finding is broken down into three distinct categories with two focused on why respondents valued archives, and one focused specifically on archives as secondary sources.

### **Archives provide valuable primary information**

Twenty-nine of 62 respondents noted that archives provide unique and valuable data. Several respondents noted how essential archives were to their work. Two participants focused specifically on the value that archival materials have on science. One participant said they made use of biospecimen archives when fresh samples were not available while another researcher, an archaeologist, said, “archives are another type of artifact.” Other participants mentioned how archives were valuable to longitudinal studies. Participant 16 mentioned the depth of longitudinal information available, by saying, “it’s like ethnography with a time dimension we don’t usually get in fieldwork.” One participant said that archives contained the “only observations and community data available for Tribal development.” This longitudinal observation by this population is present throughout the rest of Finding 2.

Other participants talked more broadly about archives’ usefulness. Some noted the real-world impact that archival data can have, especially in supporting human rights research: participant 46 shared how “archival material (i.e., government and researcher correspondence, reports, meeting transcripts) has been essential in efforts to substantiate narrative complaints of human rights abuse” while highlighting crimes against humanity experienced by Indigenous and ethnic communities, especially those abuses involving the military or economic development. Respondent 32, although calling back to the time barrier for active anthropologists, emphasized that archives were still important by saying, “People have too much to do to use [archives] when they are still going to the field, but archives are an essential part of any discipline.”

Interestingly, seven participants said they viewed archives as containing valuable information because they had donated or used archival materials in the past, although they did not share information about why the materials were valuable.

### **Archives provide (secondary) contextual information**

On the other hand, 20 respondents talked about the benefit of contextual, or secondary, information provided by archives. Six participants said they used archives to find more information for their research in both primary and secondary ways. For example, archival materials can provide longitudinal data for ongoing projects, such as was the case with participant 39, who said that because of material held in

archives, they knew another anthropologist had done research in the same village, adding ten years of data to their current research. Archival materials can also provide contextual information that helps researchers to understand recent research and fieldwork. Five participants said that archives assist current researchers in understanding recent data or fieldwork in addition to past research. For instance, participant 6 said, “Archives of field records are crucial to amplifying ongoing fieldwork.”

In addition, six participants directly noted that collections allowed for extensive lengthy research, expressing that archives provided value because of how archival data allowed for longitudinal studies. Participant 6 made note of how archives add value to “...conducting research in areas where most sites have been destroyed or are too dangerous to access,” by providing researchers access to currently inaccessible sites. Some shared that research done on the same sites over decades has aided in their research, while others valued how archival materials contextualized information or helped to construct cultural contexts. Participant 50 summed up many of the values of archival data stating, “How else can you get access to much of the work that has gone before?”

### **An emphasis on original (collected) data**

Finally, 12 of 62 respondents noted that original fieldwork was essentially the only valid form of research in their discipline, and downplayed the role archival research might have in their work. Eleven of these respondents focused on archival research and data as taking a supplemental role, while six stated that new research was needed for progress—that the anthropological field overall had a strong preference for original fieldwork. Participant 27 expressed, “[My] discipline has a strong bias toward primary fieldwork. My perception is that archival work is not valued as much as primary research.” Three respondents talked about how archives are most useful after completing fieldwork, where sources help to flesh out or supplement their original data. One participant even viewed archival research as having the potential to generate bias in new, original work.

Ten respondents simply did not find archives to be relevant to their research, either because they did not normally think about using these materials or they believed that archives were meant to be used solely by those in the humanities. In other words, anthropologists perceived archives to be relevant to a limited number of fields, and not in the sciences. Participant 41 in particular shared that they thought archives were useful for genealogists and historians, but that there were “ample other primary and secondary sources” for anthropologists.

### **Finding 3—improving access—suggestions from these communities of practice**

From these responses emerged several suggestions on what archival institutions could do to increase access and ease of use among these researchers.

## Increased digitization

Half of the subset (31 of 62) discussed a need for increased digital access, pointing out the equity digitized materials allow. Of these, 15 of the respondents stressed a need to digitize more materials. Two respondents specifically encouraged public digitization programs and digitizing non-Western archival material. Twelve respondents stated that increased digital access to materials, in general, was the most important action archives could take to reduce research barriers. The convenience (and realistic research undertaking) for working anthropologists has been highlighted by previous quotes from participant 32 and participant 5, both of whom mentioned how it's often difficult for working anthropologists to fit in time to physically visit archives. Additionally, when describing increases to more equitable access, two participants wanted digitized archives to have open access availability for those without an institutional affiliation, allowing junior researchers or those no longer actively working in the field to access materials.

## In-person support

Several researchers suggested programmatic approaches to assisting researchers, and to creating more equitable in-person access to collections. Two suggested offering research fellowships, while another two simply wanted institutions to offer some funding assistance. These last two participants stressed that institutions should work to make user costs more reasonable, including, in the words of participant 7, “Offer funding opportunities, when possible, or perhaps discounted rates in lodging, food, etc., with local hotels and such.” One participant suggested that archives make more material available online since that may be easier than trying to solve the monetary and time expenses associated with in-person research, tying back to a greater need for digital equity.

## User experience design

A few participants emphasized that archival institutions needed to increase their focus on user experience. Three participants expressed this idea with one also discussing the need for archives to perform usability studies. Another participant suggested that archives could enlist the help of researchers to maintain databases for public use. Participant 10, expressed that one way for archives to equitably offer increased digital access could be through “digital portal(s) designed for user experience—with rich, deep information available in multiple ways, really deeply well designed, tested and continually improved and updated (requires major investment and significant ongoing budget).” This response was one of few that acknowledged the significant labor and monetary investment that would be required to fulfill this request. They continued, by noting that “these interfaces should be developed by user experience experts consulting with researchers, academics, professors, teachers, community users, and descendant communities...” notably leaving out consultation with professional archivists.

## Improved, interoperable discovery systems

In conjunction with wanting a user-friendly interface design, participants wanted tools that were aimed at better discovery. Examples given included a central catalog, interconnected institution systems, and keyword searching. Increasing this call for equitable access and discovery, participant 51 asked, “Do they appear in [G]oogle [S]cholar?” suggesting that even if collections are openly available, their finding aids may be undiscoverable by many researchers unfamiliar with internal archival repository databases, something that participant 10 also addressed earlier when discussing how archival search tools are designed. Participant 3 compared archives in the USA and the United Kingdom saying, “...the UK is much easier to access information about archival materials because they have a website devoted to listing... which institutions have which bits of a collection.”

To this end, six respondents desired more cross-referencing in collection descriptions. Similar to the “Related Materials” section of a traditional finding aid, they wanted to get information on other relevant or related collections based on the collections they were already using. However, participants specifically expressed they wanted to see this utilized regarding related collections located at *other* institutions, rather than related materials at the *same* institution. Similarly, another respondent wanted to see links to published works that had used the archival material. Three people shared that they wanted to see more information about the provenance of materials, including how, when, where, and why the materials were acquired by the archives, particularly related to their ethical and legal acquisition. Some participants noted the greater depth of description more broadly, with participants one and four specifically preferring item-level processing rather than widely used minimal methods such as MPLP (see Greene & Meissner 2005 for a discussion of MPLP).

## Discussion

While in this paper we focus on qualitative analysis of open-ended responses, we have some statistical data of interest based on close-ended responses that may add some context. For instance, 79% of the science-based anthropologists we identified had used archives in their research. Throughout open-ended responses, we saw possible (re)uses of important primary source data in archives among scientific anthropological communities. Yet, this group experienced many barriers to discovery and access, both logistically and intellectually, and harbored many misperceptions that created gaps in exploiting that potential. This has important implications for archival user experiences among this population.

The growth of data reuse among any community of practice is dependent on data discovery in the first place (Kriesberg et al. 2013, pp 14; Daniels 2014). Barriers to discovery seemed particularly pronounced among this group. We found that anthropological researchers encountered significant barriers in finding relevant collections because of current archival norms. Of particular frustration to respondents were the layout of finding aids, and the institutional separation of collections, both between museum collections and archives and in cases of pan-institutional archival diaspora

(Punzalan 2014). But these provincial histories, which make discovery difficult, may be exacerbated by community search behaviors. For instance, our coding of search terms among this subgroup suggests a tendency toward searching by subject terms, and highly specific disciplinary terminology. Archival collections and finding aids are usually organized by the record creator, and may not include relevant subjects, especially in this case which might include fairly niche disciplinary terminologies.

Upon initial reflection, the above would suggest an overall lack of knowledge about archives—a lack of “archival intelligence” (Yakel 2003)—among this group. This community in particular tended to confuse traditional archives with museum archives, as many spoke of experiences they had working in museum archives. Although similar, many thought that traditional archives would hold objects in addition to papers about the object. Many did not realize that different repositories have distinct holdings and each has different operation policies. This confusion about the nuances of different types of archives is evident from archaeologists, in particular, that are increasingly seeing excavation sites as another type of “archive.” That discourse is very much akin to the trend in humanities and adjacent scholarship of conceiving “the archive” as a kind of metaphorical concept rather than a type of institution or collection. Such an approach has already been critiqued in the archival studies field, particularly for its disregard for archival labor and the realities of institutional practice (Caswell 2016). On the other hand, this lack of intuition for navigating archival systems may be indicative of their expertise in digital repositories, born digital databases, and museum collections, which tend to be organized as relational databases.

This disconnect is further exacerbated by the fact that the plethora of these digital repositories familiar to these fields often include contemporary datasets alongside information about object collections and fieldsites. Further, respondents described archives they had used in the past, which were actually research repositories or online databases, such as the Human Relations Area Files (HRAF). Three participants said that they did not understand what archives were or what was available and that they “may use this type of research but under a different terminology.”

Other respondents quite confidently believed that a majority of archival material was online and that items not available online did not exist, giving credit to a pervasive idea shared by many researchers in other disciplines (Marsh 2019). Participants also showed a lack of knowledge about archival discovery more broadly. Participant 30, for instance, highlighted that they found archival materials to be “beyond literature searches,” a thought that was perhaps echoed by the

**Table 3** Received training (Y/N) by percentage among science-based versus all anthropologists

% Y/N	Science-based (%)	All anthropologists (%)
Yes	24	22
No	68	64
No response	8	14

**Table 4** Received training (Y/N) by percentage among science-based versus non-science-based anthropologists

% Y/N	Science-based (%)	Non-science-based (%)
Yes	24	21
No	68	63
No response	8	16

participants that mentioned wanting to see archival collections appear in Google Scholar. This tells us that useful archival data is potentially being overlooked during the research process because of limited discovery methods.

This should not be particularly surprising given the wide prevalence of this disconnect among many researcher constituencies (Yakel and Torres 2003; Johnson and Duff 2005). As indicated in close-ended responses, this group has received very little formal training. Only 15 of 62 (24%) science-based respondents who answered this question had received training in core archival concepts or knowledge organization.

Readers should note that we were not able to find any clear statistical relationship between science-based anthropologists and either the whole survey population or non-science-based anthropologists and archival training patterns, perhaps in part because science-based made up a small overall percentage of respondents, and because more science-based anthropologists by percentage actually answered this question (the chi-square statistic was 2.5386 and  $p$ -value was 0.281024 and therefore was not significant at  $p < 0.05$ ). However, it is interesting to note that technically, science-based anthropologists showed a higher percentage of training (24% vs. 21%) than non-science-based anthropologists (Table 3).

Most of the respondents that had received training obtained it through their educational work (or degree programs). Because the majority of science-based respondents have used archives in the past (49 vs. 13, or 79%) and the majority view archives as primary research sites (41 vs. 21, or 66%), this suggests that anthropologists are increasingly using archives in their work, yet training initiatives for anthropologists is still low in comparison. A lack of training in archival research makes it that much harder for researchers to locate related collections, especially when archival repositories are often nested under many organizational branches, as is the case with the NAA (Table 4).

Some participants even noted this gap. Three participants shared that they desired to see an increase in training for researchers, especially on how to use archives. Participant 28 said, “More education about using them. I never received any training and was not encouraged to use them during my PhD but wanted to after reading a monograph that had masterfully woven together ethnography and archival records.” In addition, participant 38 added that training could also focus on the content and collections of particular archives, including how those collections might be used.

There may also be some lack of knowledge about what kinds of information can be found in archival collections, with the right provincial and institutional savvy. For instance, as Faniel et al. wrote in 2013, and as discussed in Morgan Daniels’



work, archaeologists feel that museum records lack the necessary contextual data they expect to find in other field archaeology data sources. In many cases, that data may be located in archival collections, not in museum collections or catalogs. But those collections may not be directly associated with museum artifacts and may be in completely different physical and intellectual (content management) systems, or located in other archival institutions entirely (Faniel et al. 2013; Daniels 2014, pp 66).

These disconnects may help illuminate why, despite apparent use (again 79% among this group, with 2/3 noting that archives are “primary research sites” in their work), there is disagreement about the importance or usefulness of archives within the science-based anthropological community. There is no consensus around archives as valid spaces for finding relevant research data.

However, it is interesting to note that there may be a gap between older and younger members and their level of knowledge about archives. This echoes findings by Yakel and Torres of “archival intelligence” or of Johnson and Duff in 2005. The latter in particular noted that the more experience (or social capital) one has in doing archival research, the more likely it is that they will find the resources they need via networks and relationships. More directly, while mostly an outdated practice, some archives still require a letter of reference for access or require institutional affiliation. It is important to consider that archaeological or biological collections in particular may be held by private organizations, societies, religious groups, or even corporations where archival access may necessarily be limited due to legal, PII, or privacy considerations, or where archival access is not presumed to be public. And, because of the history of such practices, it may be assumed that those policies still exist even where they do not. Moreover, the recent uptick in putting archival materials behind paywalls exacerbates this problem. For instance, Wiley-Blackwell digitized the Royal Anthropological Society archives, but access to them now requires a university subscription. The COVID-19 pandemic has reinstated some of these outdated practices as archival reading rooms have slowly reopened. Many archives have prioritized high-ranking scholars or junior career scholars with institutional affiliations over, say, members of the general public. At the same time, COVID may also have contributed to increased user expectations for archival services, such as the availability of detailed, digital information for remote research.

Archivists will also need to keep in consideration that adding more ethical protocols for accessing collections, an important part of adhering to the Protocols for Native American Archival Materials, could add to the impression that archival institutions are gatekeepers—a longstanding stereotype based on previous models of allowing only “qualified” researchers to enter archival reading rooms (Theimer 2011, pp 62; Peckham 1956; Schellenberg 1956). Recently, most archives have simply encouraged non-community researchers to contact Tribes or other community stakeholders when looking at community collections, including especially documents or images relating to archaeological or biological sites. Others, however, have implemented more formal processes such as new appointment request forms or formal IRB processes (Carpenter et al. 2019; Richardson et al. 2017). These are essential practices. However, archival staff (especially in reference work) may need

to balance the need for these ethical protocols with outreach to these scientific communities of practice to combat those long-held stereotypes.

Respondents, specifically those that viewed archives as primary sources of information, directly expressed a need to improve the perception of archives to the anthropology community (as well as to the public). Participant 30 shared that “the immense historical depth of information that is available” was part of what made archives critical, yet they also expressed concerns about how to bridge the gap between older and younger anthropologists. According to them, it appeared that students were only aware of recent materials and lacked a historical perspective, saying, “...when I hear educated people talking who are totally unaware of historical works done in their field I get worried.”

Three participants expressed a desire to increase the recognition of the importance of archives within the field with one person asking how to go about “improving the perception in mainstream anthropology of archival research.” Several participants shared ideas about how to improve archival communication with the anthropological community. Some respondents specifically hoped to see this kind of “archival PR” improved in their field. Those who highly valued archives wanted to see improved perceptions about archives among peers in their disciplines. While many believed archives were critical to good, thorough research, they also recognized a lack of respect for archival research as valid in the field. Those perceptions, they noted, often play out between older and younger professionals in terms of acceptance of archives as primary data collection sites. Eight participants focused on increasing advertising and outreach efforts. Participant 25 said it seemed that “many archives fly under the radar of anthropology... (unlike history, for example). More visibility and outreach would likely help with this.” Some, such as participants 5 and 47, had specific ideas about how to go about this. Both suggested being more active at anthropology member meetings and on professional society websites to increase the visibility of the archives. Four other participants wanted to see active updates about new or updated collections, such as on social media or through blogs. Finally, two participants believed that archives could improve upon their communication about their rights and usage policies, which are essential for researchers to be able to reuse any archival data in their research.

On the other hand, our survey responses suggest some cognitive dissonance between the field-wide emphasis on power and some of the assumptions made by these respondents about archival research. As has been argued elsewhere—largely about archivists as “handmaidens of historians” (Caswell 2016)—these users are not necessarily understanding or acknowledging the labor involved in archival work—particularly in the areas of reference and digitization. They often indicated a perception of digitization as a given, taking for granted the labor of digitization and digital sustainability inherent in it. Like many scholars, they are on one hand aware of labor and issues of power, and yet totally oblivious to those dynamics in other spheres. We might ask these users: what is the cost of digitization? In staff time? In its carbon footprint? Perhaps, as a field, this group might be more receptive to such questions given their interests in these areas.

Perceptions have real power. If new anthropological researchers feel like archives are exclusive, or barring that, too complicated or lack depth, or are disheartened

when materials are not digitized, or lack the time to commit to the research, these disconnects will grow. That trend is in stark opposition to the field's increasing interest in data reuse. As data reuse is still growing into the community of practice in anthropology, continued growth may be dependent on the ability to discover data within collections.

## Conclusion

Throughout open-ended survey responses of this group of science-based anthropologists, we saw high reports of archival use and research value, and many exciting possible (re)uses of important primary source data held in archives. Yet, the survey also revealed the many barriers to discovery and access, both logistically and intellectually, that prevent more widespread use of archives in these fields. Our analysis further suggests that these research communities harbor many misperceptions and may lack the necessary “archival intelligence” or archival capital to successfully navigate, access, and repurpose data of interest.

There are potentially many mutual benefits to scientific anthropologists and archaeologists working more closely together to address needs and knowledge gaps in both fields. Over the past ten years, archival user studies has come into its own as a genre (Rhee 2015). In a perfect world flush with resources and staff, archives would be able to collaborate closely with their main communities to shape how the repository can best support the researcher and vice versa. With closer collaborations and action based on user feedback, archives, especially anthropological archives, can have an impact on how communities find and use collections.

Some smaller scale moves in this vein might be achievable. For instance, archives may be able to draw on user feedback for digitization priorities. Materials that are prioritized for digitization are often those that obtain funding, or those that already have established high use or high research value. Institutions might be able to engage in internal user studies to help determine digitization priorities according to what target researchers value most, and with more attention paid to what underutilized collections might hold that content. Of course, the majority of repositories do not have the resources to conduct formal user studies, so staff may need to pay attention to the types of researchers using their collections and their needs, and make small changes based on what they are witnessing firsthand.

Beyond that, it is worth considering what this population might be able to tell us about archival data reuse, and what this group offers to the archival field. After all, while some of the use and perception patterns among scientific anthropologists may be unique, they are but one part of the wider ecosystem of sustainable data reuse, and concerns in data curation. We offer a few considerations: first, as a profession, science-based anthropologists have had to think about how to translate data through greater depths of time than, for instance, most historians or literary scholars, who have been the subject of many archival user studies. These users therefore may offer possible modes of archival engagement with the Anthropocene, human impacts on earth, and climatic change, just as the archival field is beginning to grapple with these topics (Ferraiolo 2021; Winn 2020;

Mazurczyk et al. 2018; Tansey 2017; Gordon-Clark 2012). In that vein, these are users who might make connections between archives and environmental sustainability by drawing on what is already in the archival record. That may be a welcome angle in combination with discussions about the carbon footprint of archival (particularly digital) work and the use of data centers.

While somewhat uneven across these fields, many scientific anthropologists have also made it a priority to do more ethical work in collaboration with communities, which might be an important model as the archival field begins to grapple with shared stewardship and even physical repatriation. The passage of NAG-PRA in 1990 (see McKeown 2013) generated a huge amount of consultative and collaborative work between archaeologists and biological anthropologists and communities (Colwell 2017; Gonzalez and Marek-Martinez 2015; Colwell-Chanthaphonh et al. 2010; Colwell-Chanthaphonh and Ferguson 2007). While there are a few examples of adversarial relationships there (e.g., Bruning 2006), the long trend has been toward more ethical work and new protocols for undertaking projects (Atalay 2012). Archaeologists in particular have been thinking more carefully about the colonial and labor power imbalances inherent in fieldwork (Mickel 2021, 2019), which has itself driven both more archival and museum work. It also means that these users can offer historians and other scholars productive models for conducting archival research, especially when working on topics or collections of interest to BIPOC communities. These users may acknowledge their imperative to conduct archival research ethically, and thus provide a model for other scholar-users who perhaps have not considered the need for community contact or collaboration when undertaking archival research. As the archival field begins to tackle archival repatriation, we might look to archaeology and biological anthropology for how to take that on.

Archivists might be able to help anthropologists with some of the discovery and access barriers they face. Existing “how to” literature intended to help anthropologists navigate archival repositories seems to be produced without the consultation of archivists. A recent issue of *Advances in Archaeological Practice* focused on archaeology and archives, including a concluding practical guide to archival research for archaeologists. While the text provides important insights, it lacks citation of archival literature that might illuminate some of the issues archaeologists encounter when accessing archives (Kirakosian and Heidi Bauer-Clapp 2017). It focuses on archival reading room norms, and little on the actual intricacies of archival description, provenance, and infrastructures that anthropologists might need to navigate archival repositories and find collections of value.

Archivists may be able to help the archaeological field think more carefully about its data production and stewardship. We saw in our survey responses extensive use of one-off or homegrown digital repositories, which are conceived as archives. Some of these digital repositories, such as tDAR, are being built to address these problems and to think long-term about data curation. But others, such as HRAF or other databases which are essentially akin to subject-based digital humanities projects or websites, are not built with long-term sustainability in mind. As a report about crowd-sourced WWI archives has noted, such archives have a number of fatal flaws that make them “born fragile”: (1) selection/creation—their collections may

not be selected but rather are collected because researchers have them; (2) metadata/description—overall limited; (3) interface/access—requirements for access are not scoped and lack consistent updates; (4) sustainability—infrequently factored into the design; (5) use—hosted on local websites with fragmented content (Hanna et al. 2021). Fields such as anthropology, with such vested interests in sustaining data through time, in data reuse, and in data from the deep past, should be concerned about the sustainability of these systems being built to hold data.

Archivists working in repositories that hold collections of interest to these users—archaeological, forensic, or other collections relating to the deep human past—might be able to harness the potential predispositions of these users to better acknowledge archival labor, environmental impact, community responsibility, and data sustainability going forward. Anthropologists might offer models of collaboration and repatriation, or even attention to climatic shifts, while learning from archivists about data curation and holistic approaches to data stewardship. Thus, bringing together these perspectives may offer mutual benefits for the fields of both archives and anthropological science.

At the NAA, early findings from phase one of the project influenced the archives' current project to produce community-based subject guides for a wider group of community users. As a result of that work, the NAA also revised its appointment forms to better allow users to self-describe their researcher identity. In 2018, the NAA also began sponsoring “Archives 101” panels at the American Anthropological Association meetings, to begin addressing the gap in knowledge about archives among anthropological researchers. These survey results suggest that future activities in this vein should be expanded, and perhaps brought to other professional conferences such as the Society of American Archaeology and the American Association of Biological Anthropologists.

We hope here to add to the body of literature about user experience in archives and the emerging literature on archival data reuse. As archival institutions strive to serve and grow their user base, our findings suggest that such engagement with scientific research communities might be valuable in expanding archival user communities and untapped uses of collections and the data contained in them. With better training, communication, and collaboration, archives might grow their relevance to contemporary communities and scientific pursuits. In turn, these users may offer models for other researcher communities or might be attuned to many archival concerns due to their unique field interests.

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