Preparing for the Future of Research Services for Art History:

Recommendations from the Ithaka S+R Report

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Abstract—The authors present the results of Ithaka S+R's study of research practices in art history and related recommendations about scholars' needs for research services. Ithaka S+R is a strategic consulting and research service that focuses on the transformation of scholarship and teaching in an online environment. The article describes findings related to the discovery of primary sources, the management of scholars' personal digital collections, the use of new research methods in digital art history, the acquisition of research skills in graduate programs, and the management of art libraries' collections of secondary sources.

INTRODUCTION

Early in 2013, the authors set out on a yearlong investigation of the field of art history, with special attention given to two key questions: How have art historians' research practices changed over the last several decades? How can institutions and individuals who support research in the discipline adapt to these changes to provide the most effective services? This investigation was part of Ithaka S+R's Research Support Services research program, the goal of which is to foster a scholar-centered understanding of evolving research support needs in various disciplines. In each discipline that it covers, Ithaka S+R has conducted in-depth interviews with scholars in order to learn more about the current state of their research methods and practices. We analyze this information to identify actionable insights about the types of research services that scholars need both at the level of their individual institution and at the network level. In this project, our findings are directed mainly at the broad community that helps support art historians' research in the United States, including museum professionals, librarians, archivists, and visual resources professionals.

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This article summarizes the five major findings of our project, along with the related recommendations. We encountered a highly interdisciplinary field, distinguished from other humanities disciplines in its methods, with a rich and rapidly evolving engagement with technology. Art history has already benefited from technology in numerous ways, particularly from the widespread availability of digital images. However, working with digital surrogates brings its own set of challenges, which we explore throughout this article. Technology-enabled research methods, which are just beginning to have a widespread effect in art history, are evolving in ways that highlight the uniqueness of art historians' research approaches. We also encountered challenges for the discipline that were not technology-related, particularly the ongoing difficulty of providing highly customized library services and the need for new types of training for graduate students.[1]

METHODOLOGY

The research for this project was based on seventy-six interviews with scholars in the broadly defined field of art history. These interviews were organized around a series of site visits at various institutions. The visits included three studies at academic institutions, one at a research institute, and one at a museum. An Ithaka S+R research team completed visits at the Getty Research Institute, Princeton University, the Seattle Art Museum, Swarthmore College, and the University of Kansas. The project also benefited from an additional short visit to the Yale University Haas Family Arts Library. These site visit locations were selected to represent a diverse group of educational institutions. They include a large public research institution, a large private university, a small liberal arts college, a medium-sized art museum, and an art history research center that is not affiliated with a university.

Ithaka S+R's goal in pursuing a site-visit-based approach in this project was to position each of the interviews in a larger institutional framework. The visits allowed us to bring to each interview a basic understanding of the research resources available at each site. In addition, this methodology allowed us to examine scholars' research relative to the larger mission of their department or institution. We have excluded information that is specific to any individual institution. The comments made by interviewees have been anonymized throughout.

Art history is a broad field that can be defined in ways that include or exclude certain specializations and proximate disciplines. We did not create a specific definition of "art history" for the purpose of this project because we felt it would be difficult and restrictive. We have erred on the side of inclusiveness, and thus we spoke with some interviewees whose primary academic department is not art history, and indeed some interviewees whose primary methodological approach cannot be called art historical. The point of commonality for all of the interviewees is that they practice some form of critical analysis of art in the course of their research. However, the majority of the scholars who were interviewed for the project do indeed work in art history de-

partments and use art historical methods. We cannot claim that this report is representative of the full diversity of research practices in fields such as archaeology or media studies, though researchers in those fields may have many points of similarity with our interviewees.

While this study may contain many conclusions that are relevant to researchers and institutions outside the United States, it was focused solely on American organizations. This scope limits the project in some ways, but it helped us achieve a greater depth of detail in our observations of scholars working within the United States. Many of the interviewees have lived or worked abroad or otherwise have experience in the academic cultures of other countries, and their experiences helped contextualize our perspectives.

We have used terminology that we hope will be useful and intelligible to both art historians and research support professionals, but which may at times differ from the norms of either group.[2] First, we categorize all sources used in art history as either primary sources or secondary sources. This may deviate from the usage of some scholars, who may not consider the artifacts that they study to be "primary sources." We have used the term "object" to describe a subset of primary sources, specifically, any item or material on which an art historian imposes his or her framework of formal analysis. As described in this article, an "archive" is any collection of non-published sources. Archives may contain primary and secondary sources, including visual materials that can be analyzed as objects. Finally, the word "image" is used to describe reproductions of primary sources. Images can exist in digital form, but they can also include slides or photographs. When we refer generally to "secondary sources" we do not intend to include images in this grouping.

FINDINGS AND RECOMMENDATIONS

DISCOVERING PRIMARY SOURCES

The manner in which art historians find and shape their research topics is deeply influenced by the primary sources to which they are exposed during their research processes. Scholars described how they constantly view and analyze images and objects, whether they are searching for them specifically or seeing them coincidentally. In the past, the discovery process through which art historians encountered new primary sources and revisited familiar ones occurred either through seeing those sources directly or through viewing reproductions of them in "traditional" media. Scholars could view the original works, or they could use surrogates, usually in books, but also in such places as slide collections or photographic archives.[3] In recent decades, the use of online tools has transformed the way that art historians find their primary sources. Our research confirmed that the creation of digital images that can be used as surrogates has upended the discovery process and created a new means of encountering sources. While this development has greatly enhanced researchers'

2. For a more in-depth description of our terminology, please see the full version of the report.

3. Elizabeth Bakewell, William O. Beeman, Carol McMichael Reese, and Marilyn Schmitt, *Object, Image, Inquiry: The Art Historian at Work* (Santa Monica, CA: Getty Art History Information Program, 1988).

discovery processes, there are still manifold barriers to discovering basic information about primary sources.

Scholars observed that many museums and cultural heritage institutions still have only limited information about their collections online. Detailed metadata about objects is the basic system that allows scholars to locate their research materials. In recent years, many museums have renewed their efforts to make descriptions of their collections available on their websites. This is an important step, but it is only a baseline for making information available digitally, since these institutions still rely on scholars to know their collections or find them through web searches. Only a small percentage of museums take the extra step of providing high quality online images for a significant portion of their collections.[4]

In the course of the project, we observed a host of issues that inhibit discovery at the network level. Most of the institutional collections that have been made available online are disconnected from each other and difficult to find; records about objects are still siloed by institution and by specialty. Only a small number of museums have made available a portion of their collection in an online database or tool that aggregates objects from multiple museums, such as ARTstor or the Google Cultural Institute. From the museum's perspective, it makes sense to organize all disparate holdings together, but from the user's perspective this is unhelpful, since scholars' research cuts across the collections of many different institutions. Hundreds of museums in the United States use similar systems to store information about their collections, but they have not adopted shared cataloging standards or built a common infrastructure for sharing information. The library community has created a central repository for bibliographic records, but there is no analogous "WorldCat for cultural objects" that serves scholars of art. Even within individual institutions such as large museums or universities, information about collections exists in multiple databases and cataloging tools that are not connected.

Many scholars recounted how they have benefited from the proliferation of small, specialized digital collections in art history. As in larger institutional collections, these materials can be difficult to find and often suffer because of their lack of visibility. Many of these resources are not indexed by Google, so researchers have to determine when to look at certain collections within their specialization. One interviewee said that she only ever knows about smaller digitization projects and online sources "by accident." There are so many of them that she feels she is unable to keep up with their proliferation in her field. Another art historian said that his greatest research need with regard to primary sources was for an "easily accessible center for helping me though what's available on the Internet now, directed toward me, as a scholar."

The discovery ecosystem is further complicated by the fact that many primary sources are held by small institutions, private collections, or in unexpected sub-units within larger institutions. Many of these objects are in "hidden collections" that have no online presence, either because they have not been described at all or because

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4. Kristen Kelly described portions of the museum access landscape in greater detail in her report *Images of Works of Art in Museum Collections: The Experience of Open Access* (Washington, DC: Council on Library and Information Resources, 2013), http://www.clir.org/pubs/reports/pub157/pub157.pdf. Her observations about the unevenness of the access landscape generally matched our own findings.

records about them have not been placed online. This project uncovered many examples of collections with no online catalog or finding aid; these included a collection of serials, an artist's correspondence archive that was held in a museum department, a poster collection in an arts library, and a retired scholar's personal image collection and archive. While these materials are available to scholars, they have little or no web presence, and they are difficult to discover and access. As scholars rely more on digital search tools, these collections may go unnoticed.

RECOMMENDATION:

Large museums, universities, and cultural institutions should begin to plan thoughtfully for how they want scholars to find and use their metadata and images in an online environment. There is an immediate need for them to focus their attention on making detailed metadata about their collections available on their websites. In the current context, it is possible that many important objects have been overlooked or ignored by the scholarly discourse because they are difficult to find. Objects are effectively hidden from view until there is information about them online, so this is an important first step toward improving scholars' access to primary sources relevant to their research.

With more objects represented online, institutions can begin to work toward a next-generation architecture for discovery, a "semantic web for images" that could use metadata to reveal the rich interconnections between different objects. Some efforts are already working toward centralized systems. The Digital Public Library of America is creating a central discovery platform for many different types of sources, and ARTstor's participation in this initiative is ensuring that metadata from museums will enrich DPLA's content. However, these efforts lack the widespread reach necessary to transform discovery in art history. The first step toward this goal is to begin building a common framework for collaborating on discovery issues. Efforts to create metadata standards are particularly crucial to improving the infrastructure for discovery and collaboration in art history, and the museum and archive community should make them a priority.

PERSONAL DIGITAL COLLECTIONS

Digital photography and the wide availability of images of art have opened up new horizons for scholars who can now maintain large personal collections of digital images for research and teaching. Over the past decade, it has become easier for scholars to scan or download images, and there has been a corresponding decline in the use of many institutional visual resources collections.[5] While this trend has empowered scholars and increased ready access to images, it has also created the illusion that any problems related to access to and storage of images have been solved. While art historians have started to take advantage of digital images, many of them still need better tools and skills for organizing, accessing, and manipulating image files.

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5. For more information on threats to visual resources, see Christine Sundt, "The 'Crisis'—Revelations, Reactions, Reinventions," *Visual Resources: An International Journal of Documentation* 27, no. 4 (December 2011): 277–300, http://dx.doi.org/10.1080/01973762.2011.622261.

Almost all art historians now keep large personal collections of digital images that include both photographs they have taken and images they have downloaded from online sources.[6] Digital images have replaced physical slide collections and vastly expanded the number of materials that scholars can keep. These collections range in size from hundreds of images to tens of thousands of images, and they also range widely in their quality and content. Some are merely duplicates of images taken from museums' websites or institutions' visual resources collections. However, others include rare or unique images that scholars have captured in the course of their research, such as images of artworks held in private collections or difficult-to-access architectural examples.

There is a deficit of knowledge in the art history field about managing and utilizing collections of digital images. Most art historians use simple organizational systems for their image files, but these systems add little value and sometimes prove time-consuming to manage. Many scholars organize their personal image collections in a hierarchy of folders on their computers' operating systems. Sometimes they embed a small amount of metadata into the folder names or the filenames, or they focus on creating filenames that will be easily findable during searches. A small minority of interviewees uses some other type of program or application such as Lightroom, Flickr, or iPhoto to manage files. Many scholars have some simple form of personal file backup—they either duplicate their files on multiple hard drives or, less often, on a network drive that is backed up by their universities. However, at many institutions, they make little use of their departmental or institutional image management tools.

Beyond the issue of personal collection management, we found that few art historians receive any formal training about proper digitization, photography, image quality, digital preservation, or digital projection. They cannot always evaluate the quality of a digital image or assess the best way to display it. When preparing images for publication, they sometimes need the help of someone with additional expertise who can deal with issues related to image resolution and file manipulation.

The current situation surrounding digital images has impeded the development of a greater culture of sharing in art history. While some scholars reported that they occasionally informally share files through e-mail, they do not often request images from each other. Some interviewees expressed reticence about sharing images, since they often mix their own images with downloads and thus are unsure about the copyright status of their personal collection.[7] In the current environment, each scholar builds his or her digital collection in isolation, often with duplication, and shapes it specifically to his or her needs.

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6. Art historians have always built personal collections, and to a certain extent the formats of their collections are always in transition. The 1988 report *Object, Image, Inquiry: The Art Historian at Work* documented scholars' decisions about when to use photocopies, 35mm slides, or microfilm. Bakewell et al., *Object, Image, Inquiry*, 13–18.

7. The issues surrounding image copyrights have an extensive impact on the discipline, and while we cataloged some of these effects, copyright issues were outside the scope of our research. For a detailed description of these issues, see Patricia Aufderheide, Peter Jaszi, Bryan Bello, and Tijana Milosevic, *Copyright, Permissions, and Fair Use among Visual Artists and the Academic and Museum Visual Arts Communities: An Issues Report* (A Report to the College Art Association, February 2014), http://www.collegeart.org/pdf/FairUseIssuesReport.pdf.

RECOMMENDATION:

In the digital age, scholars have taken on many of the tasks of organizing their own research information and personal collections. As scholars' personal collections of digital materials grow, they need new types of training on how to create strategies for organizing and preserving their important sources. They now need specialized knowledge and skills in working with digital images and tools. In a broader sense, they need responsive services that help them deal with issues of personal information fluency in the research process. Developing new services in these areas may be particularly challenging, since interviewees often saw these skills as an afterthought to their research. However, fluency in using digital tools and manipulating digital images will be increasingly important skills for the next generation of art historians, and these basic digital skills are also an important precondition to the expansion of the field of digital art history.

GRADUATE STUDENT TRAINING

The academic environment that graduate students enter upon the completion of a PhD program is evolving rapidly. Within the discipline of art history, there is uncertainty about whether tenure-track academic positions will be available, what types of scholarly publications will be widely read and preserved, and what research methods will grow in importance in the future. Not all aspects of graduate training have kept up with these changes. Further innovations may be needed to ensure that students are prepared for a very different (and difficult) job market.

The techniques needed to conduct original research are sometimes taught in courses about theory, but in some graduate programs they do not have a major role in the curriculum. Optional training sessions for graduate students in libraries and visual resource collections are not always robust, in part because they are rarely required as part of the curriculum. Many interviewees knew about them, but few indicated that they had attended them or found them useful.

There are a number of key areas where scholars—including both graduate students and their advisors—reported that they see the need for more extensive training and preparation. First, digital research methods are rarely taught within departments, and in order to learn how to deploy these methods, students have to seek out additional training in specific skills. Second, learning to conduct research at libraries, archives, and other institutions outside the United States is an important skill for graduate students who have to work with international topics, and it is not always a focus in graduate programs. The related issue of language training is in a state of flux in the discipline, with some scholars expressing grave concern over what they see as a decreased emphasis on foreign languages in graduate programs, while others believe that this is not an important issue. Finally, graduate programs do not always help students learn how best to develop research topics in ways that will yield useful publications, and much of the work they do in preparation for their dissertations is not relevant to what might eventually be publishable.

Art history departments' diversity is their key strength in some respects, but it can complicate graduate education. The diverse nature of the methods used in art history

can make it difficult for graduate students to acquire the skills that are most relevant to their research. In some cases, graduate students work with advisors who have similar specialties but very different methods. For example, an advisor and a student may both study Italian Renaissance art, but one might have an approach based in archival research, while the other is more interested in artists' techniques. At some universities, there are extensive discussions between students and faculty members about methodology, and the faculty members think of their discussions with students as one of the important ways that they develop their own scholarly arguments. However, this is not universally true. In some of the less well-represented specialties, the historic time periods that a graduate student chooses to study may differ substantially from those of his or her advisor. Some students are effectively alone in their research area and methodology within their institution.

Some graduate students see informal interactions with peers as a vital part of their methodological formation. Several interviewees mentioned the importance of their peer group as a means of learning about methods. They share with younger students and feel more open to discussing methods with their peers than they might with faculty members. Graduate students who are in smaller subfields sometimes realize less value from being in an art history department, since they have fewer peers on whom to draw. One interviewee said in this situation "you have to make your own peer group" that might include students from other departments or other institutions.

Considerations related to the job market occupy an important place in some students' planning for the future. For example, most of the graduate student interviewees had thought carefully about the scope of the courses that they could teach, and they had worked to position themselves so they were "marketable" when looking for jobs. Similarly, career considerations also influence research projects and dissertation topics. Several experienced faculty members and curators said that they caution their undergraduate students about continuing their education in art history, given the difficult job market for graduates of PhD programs. A couple of current graduate students said that they would prefer to teach at institutions without graduate programs because they did not want to educate more art historians who might be unable to find jobs.

In this time of upheaval in the academic job market, many interviewees shared the sense that museum careers have become substantially more "respected" within doctoral programs over the past few decades. One interviewee said that the graduate program of which she was a part has changed its point of view dramatically in a relatively short period of time; now students are actively encouraged to explore careers at museums. Many said that museum positions were looked upon not as an "alternative career path," but as a core of the program, and departments are proud of their record of sending graduates to museums. Curatorial internships provide important training opportunities that prepare students for the multifaceted responsibilities of a curatorial position.

RECOMMENDATION:
There is an opportunity for institutions, scholarly societies, and funding agencies to create programs to help graduate students learn about specific methods and connect to peers and more experienced scholars. For example, a mentoring program could systematically connect students to seasoned scholars in their specialization at other

institutions who can supplement the advice of a student's advisor. Method-specific training programs can immerse students in selected research techniques and bring them together with other practitioners.[8]

Graduate students may be open to greater experimentation in collaborative methods. Models for collaborative research already exist in archaeology, where teams of researchers work together on a single research subject, but still produce individual publications that will be recognized as original research in hiring and tenure decisions. The application of similar team-based research models in other areas may yield valuable research conclusions.

DIGITAL ART HISTORY

Some commentators have seen art history as a field where technology-enabled methods have had little or no major impact. This is due in part to the strict definition of "digital humanities" methods that have been carried over from other disciplines, especially literature, which have a strong focus on quantitative analytical techniques like text mining. The awareness of digital humanities in art history seems to have lagged behind the actual use of technology in the discipline. In particular, Diane Zorich's 2012 report on the state of digital research methods noted that many of the techniques that are commonly classified as digital humanities are not yet widespread in art history.[9] However, the application of this framework to art history oversimplifies the use of technology for the study of art. There is a broader spectrum of research projects that fit under the umbrella of digital art history. These digital methods range from those that are technology-enabled, where new software or technology has a transformative impact, to those that are technology-facilitated, where technology has a more incidental impact.[10] This Ithaka study uncovered a diverse set of projects that fit somewhere along this spectrum of digital art history.

Many of the transformative uses of technology in art historical research have come in areas that can either be considered "subfields" of art history or as related fields, such as archaeology, architectural history, and technical art history. For example, it has become relatively common for architectural historians and archaeologists to use three-dimensional modeling to enhance their ability to view and interact with their subjects. Architectural historians build models of cities and individual buildings to understand what ancient buildings might have looked like. One interviewee explained how computer modeling helped him reconstruct the sightlines in an ancient

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8. Programs like the Rare Book School's Andrew W. Mellon Fellowship of Scholars in Critical Bibliography, which brings together a group of younger scholars seeking to improve their knowledge of methods in the study of book history, may provide a good model for training in art history. Another example is the Summer Teachers Institute in Technical Art History, a partnership between New York University and Yale University funded by the Samuel H. Kress Foundation.

9. Diane M. Zorich, *Transitioning to a Digital World: Art History, Its Research Centers, and Digital Scholarship* (A Report to the Samuel H. Kress Foundation and the Roy Rozenweig Center for History and New Media, George Mason University, May 2012), http://www.kressfoundation.org/uploadedFiles/Sponsored_Research/Research/Zorich_TransitioningDigitalWorld.pdf.

10. This distinction is influenced in large part by Johanna Drucker's definition of digital art history. Drucker has applied a fundamental dividing line in digital art history methods by asking "What new research questions can be asked?" She draws the distinction between the already ubiquitous "digitized" art history, in which scholars take advantage of the wealth of digitized materials, and "digital" art history, which will involve a substantial transformation of research techniques and methods that has not yet come to pass. Johanna Drucker, "Is There a 'Digital' Art History?," *Visual Resources: An International Journal of Documentation* 29, no. 1–2 (2013): 5–7, http://dx.doi.org/10.1080/01973762.2013.761106.

city and develop a hypothesis about why the city was laid out in the way that it was.[11] Similarly, conservators and technical art historians have used new types of imaging to answer new research questions. One example is Reflectance Transformation Imaging, which allows scholars to view an object with a variety of different light sources, something that might not have been available to them in a traditional museum setting. Some museums are making these new types of images available through online catalogs created through the Getty Foundation's Online Scholarly Catalogue Initiative.[12]

Even in the core of the discipline, digital methods have begun to enable researchers to substantially transform their methodologies and ask new types of research questions. The first set of digital approaches to art historical research has been through the quantitative analysis of large sets of metadata about works of art using sources such as the Getty Provenance Index.[13] In addition, there have been some efforts to use technology to gather quantitative data from images of artwork. This approach might enable researchers to collect entirely new types of information about art, or it might allow them to gather and analyze information on a much larger scale than was previously possible.[14] These projects are still new and somewhat experimental; they have an approach that is markedly more quantitative than most art history research.

Finally, there are a number of other technology projects that could be said to lie somewhere toward the technology-facilitated end of the digital art history spectrum. These are projects that may not necessarily open up new research questions or methods of analysis, but which have an important impact on the way that scholars work. For example, the Getty Research Institute's Scholars' Workspace project provides a new way for researchers to collaborate on creating critical editions of historical texts. This tool will make it easier for scholars to work together, but it does not necessarily introduce a new type of method to the discipline. Some digital tool and database development could also be said to fit into this category. Digitization projects such as the Blue Mountain Project at Princeton University have been created with an eye toward opening content to reuse in digital research.[15]

Interviewees who are using new digital methods expressed concerns about quality control within the field since they do not want their research to be compared to work perceived as being of lower quality. They tended to apply a narrower definition to "digital art history" and even expressed mixed feelings about how digital methods should be recognized in tenure review processes. Almost all senior researchers who are engaged in digital methodologies said that they have steered their graduate students away from experimentation since they see it as a risk to an untenured scholar's career.

11. See also the work of Diane Favro, which includes projects such as "Digital Karnak": http://dlib.etc.ucla.edu/projects/Karnak.

12. The Online Scholarly Catalogue Initiative allows museums to layer different types of visualizations that enable scholars to use richer and more detailed digital surrogates with x-ray images or three-dimensional visualizations. See the Online Scholarly Catalogues at the Art Institute of Chicago website, http://www.artic.edu/collections/books/online-scholarly-catalogues.

13. Pamela M. Fletcher and Anne Helmreich, *The Rise of the Modern Art Market in London, 1850–1939* (Manchester, England: Manchester University Press, 2011).

14. See, for example, the "Digging into Image Data to Answer Authorship-Related Questions (DID-ARQ)" project at the University of Illinois at Urbana-Champaign: http://isda.ncsa.illinois.edu/DID/.

15. Blue Mountain Project, Princeton University Library, http://library.princeton.edu/projects/bluemountain/.

RECOMMENDATION:

Art history is an incredibly diverse and interdisciplinary field of study—some scholars are doing archival research, others are participating in archaeological digs, and others are hunting for artwork in remote churches. In this varied environment, there is no easy blueprint for the broad application of a simple technique such as text mining. Consequently, the idea of digital art history needs to be reframed to encompass a broader scope of research activities, some of which may be technology-facilitated but are not quantitative. In order to best serve the discipline, institutions and funding organizations need to have a scholar-centric approach to the use of technology that recognizes the current research objectives of art historians.

There are still many questions to be addressed in digital art history. Will quantitative research methods become more prominent in the field, or will there be other models of digital research? What types of collaborative models will emerge as the best approach to digital projects? There is an opportunity for scholars to catalyze these important explorations in a way that is responsive to the uniqueness and diversity of art historical research. New methods are still seen as risky and experimental. Even where there are excellent support services for art historians who want to apply digital methods, only a minority are as yet interested in using these methods. Institutions that want to stimulate more interest should consider other types of interventions, such as dedicated grant programs to support these activities or tenure systems that are responsive to methodological innovations.

ART LIBRARIES AND COLLABORATIVE PLANNING

Arts research collections have evolved to serve the unique needs of a small set of users. Art historians differ from other humanities scholars in a number of ways; for example, they rely more heavily on expensive print books that are not available digitally, and they use sets of semi-rare periodicals that have never been digitized. On academic campuses, branch libraries for the arts (sometimes joined by architecture or archaeology) usually serve a very small segment of the campus community. At museums, the library provides very specialized services for a small set of curators. Art historians rarely confine themselves to their institution's library in their search for sources. They may patronize a constellation of nearby libraries in their search for secondary sources, or be heavy users of interlibrary loan. Art historians rely on specialized expertise and purpose-built collections from a network of art libraries to fulfill their needs for secondary sources.[16]

Scholars spoke about how they value a broad range of types of secondary sources, often rare and difficult to collect. Examples are ephemera, auction catalogs, art books for a popular audience, catalogues raisonnés, and various types of historical "gray literature." Many of these have no digital presence. The same is true for printed scholarly sources; many journals and other print publications are not yet available in

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16. D. Vanessa Kam's investigation of library collections for art and architecture gives a detailed description of these issues that closely matches our own findings. D. Vanessa Kam, "The Tenacious Book, Part I: The Curious State of Art and Architecture Library Collections in a Digital Era," *Art Documentation* 33, no. 1 (Spring 2014): 2–17, http://www.jstor.org/stable/10.1086/675702.

digital form. Several scholars gave the example of Japanese art history journals, many available only in print.

Art historians' ways of using scholarly books set their discipline apart from other fields. They sometimes use books primarily as sources for high-quality images of objects. Interviewees described a variety of reasons why they value print books. Print books (both monographs and catalogs) allow them great flexibility in examining images because they can place the books side-by-side to compare images. Scholars can also easily scan images for their personal digital collections. Several researchers mentioned that they trust the reproduction quality of images in books more than that of digital images. Interviewees reported that they do not generally read monographs cover-to-cover, but instead use images, tables of contents, and indexes to navigate to sections that are most relevant to their research. In particular, several interviewees emphasized the importance of the index as a means of accessing information in a published book.

There are still relatively few e-books available on scholarly topics in art history. This is due largely to the high costs of image permissions.[17] Art history e-books that are available sometimes come with significant restrictions such as excised images. Most scholars expressed disinterest in e-books, in large part because they are often inferior at serving scholars' needs for images. One area where digital versions of books (including scanned versions of print books) add significant value is that they make books searchable.[18] However, even when they use a digital version for keyword searches, most interviewees said that they still prefer print versions for reading large sections of text.

Given the importance of print materials, many art historians still feel that physical proximity to the library is a key convenience factor, whether or not their institutions maintain a branch library for art history.[19] Most interviewees regarded it as preferable that their offices and/or classrooms be located in the same building as an arts library or on the same part of campus as the library that holds arts materials. There are a variety of reasons for this, but the most important factor is scholars' need to have ready access to print books. Since portions of many art collections do not circulate, physical proximity is still the best guarantee of easy access. As noted above, books are still the most important sources of images, and scholars need ready access to images. Even scholars who use a library delivery service for most of their materials preferred proximity to the library. Researchers at institutions that did not have excellent collections in their field are generally able to overcome this obstacle. Most interviewees felt

17. There is a larger debate within the art history community about art historians' format preferences and whether they will accept electronic publishing. See especially Maureen Whalen, "What's Wrong with This Picture? An Examination of Art Historians' Attitudes About Electronic Publishing Opportunities and the Consequences of Their Continuing Love Affair With Print," *Art Documentation* 28, no. 2 (Fall 2009): 13–22, http://www.jstor.org/stable/27949518. This discussion of preferences sometimes overshadows more important factors influencing art publishing, particularly the economic trade-offs confronting publishers and libraries.

18. In general, interviewees did not use the term "e-book" with any precision. Sometimes, they used it to refer to Google Books scans of print books rather than born-digital e-books. Scholars typically use Google Books scans of print books to search the text of books. Additionally, "e-book" is often taken to connote electronic-only publication, rather than dual-format publication. This lack of precision may reflect the current scarcity of online publishing in the field.

19. Scholars who work on interdisciplinary research subjects mentioned that the proximity issue can be more complex for them. If their institutions have a stand-alone arts library, they often find themselves using both the branch library and the main library with some frequency.

very comfortable with requesting materials through interlibrary loan, which generally gives them access to all of the materials they need. One scholar remarked that this means that she cannot always "run over to the library," but she can ultimately still get access to the books that are important to her.

Building research collections for the discipline requires specialized expertise because of the diversity of materials that scholars need. In order to build a research collection that includes the broad variety of materials beyond current journals and books, librarians need to be familiar with the discipline and the research interests of their users. Collecting these specialized materials in a meaningful way remains an art rather than a science. To support art historians' regional specializations, librarians must also acquire foreign-language materials from around the world. Several scholars who work in Asian art mentioned the importance of having access to a librarian with language training in their field. Many of these scholars use print materials that are not easily available in the United States or specialized online databases. They need support to be able to find and access these materials. In order to do this, they often work in concert with both an arts librarian and an East Asian language specialist.

In addition to serving the needs of researchers at their own institutions, some academic and museum research collections serve a broad audience of art historians who travel to do research there. Many scholars reported that they occasionally make research visits to use the resources of other institutions beyond the one where they work. Museums and smaller academic institutions often develop formal or informal relationships with local universities that allow their curators, researchers, and students to access larger research collections. Researchers also visit some libraries in person because all or part of their visual arts collections do not circulate. Most scholars' research visits to other libraries are relatively infrequent, but a handful of interviewees said that they make extensive use of the strong collections of nearby institutions. This was especially true in the Northeast, where individual scholars may commute to the institution where they teach but prefer to do their research at another nearby library.

RECOMMENDATION:

Meeting the research needs of art historians requires a networked community of cultural and educational institutions. In art history, no institution holds all of the sources that its scholars need to conduct their research. For secondary sources, art historians use interlibrary loan frequently to access books they need in their work. Scholars who work in large metropolitan areas often work in other institutions' libraries. A university may think of its own faculty members as the only users of its arts history branch library, when in fact it serves scholars at a broad range of smaller institutions through research visits and interlibrary loan requests.

Research libraries, visual resource collections, and other research collections should reflect on their interdependence with nearby collections and make this a substantive part of their strategic planning. Collaborative planning holds the opportunity to significantly improve services for scholars, and art history libraries are particularly well-suited to collaborative collections management. In geographical areas where public libraries, academic libraries, and museum libraries maintain overlap-

ping collections, there are opportunities to use cooperation to build better, more efficient library collections and services. Networks of libraries at the national and regional level will be able to provide the most comprehensive collections for scholars, while also reducing the strain on any individual member of the network.

Administrators should also make provisions for the unique needs of art historians at their institutions. Institutional policies do not always take into account the research habits of art historians or their different ways of using research collections. Art historians need print copies of books and journals, since the high quality of image reproductions is important to their work, and this sets them apart from scholars in most other fields. At research libraries that are moving more of their collections to off-site facilities, art librarians often have to defend their constituents from institution-wide collection-management policies.

CONCLUSION

Each of the recommendations listed above represents an area where improvements to research services and systems can make a tangible difference in the work of art historians. They touch museums, libraries, visual resources collections, publishers, and scholarly societies, and they offer opportunities for these existing service providers to expand and reinvent their engagement with the discipline. The needs we have identified here will continue to evolve at a rapid pace. Art historians' engagement with technology will continue to deepen in the future, which will have extensive implications for how they carry out their research.

The diversity of our conclusions reflects the diversity of art history, but this report touches only on the methods and work practices of art historians. It does not address the purpose of the discipline and the research questions that drive its scholars, nor does it address some of the other central issues that confront it. However, we hope that our work can serve as an important cornerstone in discussions of public engagement, art historical education, and the future of the discipline.