Art History in Digital Dimensions

A Report on the Proceedings of the Symposium Held in October 2016 at The Phillips Collection, Washington D.C. and the University of Maryland, College Park

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I. Introduction

The symposium "Art History in Digital Dimensions" (http://dah-dimensions.org/) held at The Phillips Collection, Washington D.C. and the University of Maryland, College Park in October 2016 brought together an international, multigenerational group of forty-five academics, museum and cultural heritage professionals, information scientists, publishers, conservators, and program and grant officers to discuss the current state of digital art history (DAH)[1] and develop a roadmap for the future practice of the field. The three-day event, organized by the Department of Art History and Archaeology and the Maryland Institute for Technology in the Humanities (MITH) (http://mith.umd.edu/) at the University of Maryland and sponsored by the Samuel H. Kress Foundation and the Getty Foundation, comprised an interactive agenda featuring roundtables and breakout working groups that addressed core issues and concerns posed by the incorporation of computational tools and analytical techniques into the study of art history. This format encouraged participants to articulate the challenges and benefits that digitally-inflected, data-driven practices offered their own research, teaching, conservation work, and publications and determine strategies to address these opportunities effectively.

A. Background

In November 2014, with the support of the Samuel H. Kress Foundation, a planning committee convened for a two-day workshop in College Park. This meeting brought together an intergenerational group of nationally and internationally recognized scholars and museum professionals whose goals were twofold: to identify critical themes for digital art history and the digital humanities, and to design a symposium that addressed them. Subsequently, with support from the Samuel H. Kress Foundation and the Getty Foundation, a smaller advisory committee was formed to oversee key aspects of the planning, such as drawing up a list of invitees, adjudicating the open call applications, and refining the final agenda.

B. The Present Study

The key objective of the symposium was to draft a set of strategies that directly address the challenges confronting the field of DAH. While participants also discussed the advantages of utilizing new media technologies in their work, the organizers were primarily concerned that the resulting report focus on charting a roadmap for the future of the field. Thus, the present study is not a record of the conversation as it unfolded during the three-day event but, rather, a summary of the challenges confronting DAH as defined by the participants and their recommendations for future practice.

In short, the purpose of this paper is twofold:

a. To determine the challenges confronting DAH
b. To outline possible solutions to these challenges

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[1] The term "digital art history" (DAH) is used in this study to represent art-historical research, teaching, and publication that employ new media technologies. It should be noted, however, that some participants argued that this term is not necessary: using digital materials and computational tools is not a research method, they reasoned, but a means of communication.

C. **Methodology**

The first full day of the conference commenced with a roundtable discussion during which invited participants related their involvement in DAH, outlined the difficulties they occasionally encountered in their work, and raised five "provocations" based on their experiences in the field. At the conclusion of the session, all participants—primed by the roundtable discussion—were randomly divided into five groups, each of which was tasked with debating the most important challenges facing the practice of DAH and isolating five key issues. Each group subsequently presented these issues and the rationale for their selection to the entire gathering. During the Plenary session held later that day, all participants discussed the challenges as presented by each group and voted for those they believed were most pressing. The top five concerns[2] as determined by this vote were:

- Sustainability
- Diversity
- Valuing translators[3]
- Training
- Audience

The second day of the symposium was devoted to drafting a series of strategies to address these five issues (often referred to as "opportunities"). Participants were organized into new working groups and requested to discuss one of these key challenges and brainstorm possible solutions to this challenge that could be implemented immediately or in the near future. It is critical to note that participants were randomly assigned to various working groups: while self-selecting might have allowed participants to discuss topics they found urgent or pursue particular agendas, the random assignment helped to bring together people with different views on and investments in a topic. At the conclusion of the session, each group shared their results and all participants offered opinions, suggestions, and constructive alternative solutions.

Thus, the present study is organized around these five key points, articulating their impact on the development of the field of DAH *as determined by the participants* and focusing on the strategies *as formulated by the participants* to address them effectively.

II. **Overview of Presentations**

A. **Keynote Lecture: A Critical Digital Art History**

In his presentation, Paul B. Jaskot (DePaul University) called for a critical Digital Art History. He emphasized that available technologies should not determine art-historical research questions but that research questions should determine the technological methods. Art historians, he urged, should engage in public and proactive debate to discover the most appropriate computational tools and analytical techniques for their work. To launch this

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[2] Funding was a close contender for inclusion in this list. Although a breakout group was not devoted to the topic, it remained an issue discussed throughout the symposium.

[3] "Translators" were defined as the information specialists and software engineers who mediate between art historians and computer scientists during the production of DAH projects.

discussion, he suggested that questions exploring the relationships between space, time, and the object are inherently suited to DAH.

Jaskot expanded his argument to examine the benefits that DAH can bring to the discipline of art history. He focused on the field's ability to offer new insight into the social history of art by shifting attention from the social context of the production of the work of art to the analysis of what works of art communicate about the societies that produce them. Thus framed, DAH is embedded in the long tradition of critical inquiry regarding what constitutes the most crucial subject(s) of art history as a discipline, offering its practitioners the possibility of participating in central debates. For example, DAH may attend to issues of scale more effectively than a monographic approach: digital methods insist on the granular and demand large datasets, thus making what art historians often perceive as the center *decentered*. This encourages art historians to understand the historical record in a new way, which has the potential to be more inclusive. Jaskot noted that more data does not necessarily provide "more truth," but it does allow for increased access to the relationship between larger structures of society and larger groups of objects, potentially revealing the holes and biases in the art-historical record at the same time as it allows for the analysis of large bodies of relational information that are analytically more true to the complexities of human experience. In short, DAH may unearth what was buried, visualize what was overlooked, and model what could not be easily conceived. DAH, Jaskot concluded, allows art historians to probe the relationship between the work of art and its environment in new ways, providing additional insight into the workings of societies.

B. Roundtables

Three roundtables were held over the course of the symposium. The first comprised several early career and senior scholars who discussed their engagement with the field. The themes that emerged from the discussion included: training; sustainability; collaboration; and valuing all members of the DAH project's team. The second roundtable addressed "The Two Art Histories" and invited speakers from museums and cultural heritage institutions and the academy to debate how DAH could be effectively integrated into their work. Issues raised during this conversation included: how to position the humanities in a world where technology takes precedence; how to capture the subjective nature of humanities research in a digitally-inflected project; how to achieve greater connectivity between digital art historians; and the legacy of the DAH project. During the final roundtable discussion on institutional perspectives, four themes surfaced: the demand for updated best practices; the need for project and program design that encourages sustainability; the importance of open access; and evolving approaches to publishing and discourse, especially peer review.

These points were addressed throughout the symposium. Strategies to address these challenges are incorporated into the recommendations listed below.

III.   Core Challenges for DAH and Recommendations for Future Work

A.   Sustainability

a.   Challenges: Preservation and Reproducibility

Participants isolated four areas of concern regarding the sustainability of DAH projects: indexing the project and maintaining its visibility; addressing the project's life-cycle costs; the fate of the archive; and reproducibility.

Although the issue of reproducibility is not directly related to the long-term conservation of an existing DAH project, most participants agreed that any discussion of sustainability must confront the issue of transparency—i.e. the ability to confirm results. For DAH to gain legitimacy, these participants argued, the results presented (the "conclusions drawn") must be reproducible. The data should be available and the computing environment maintained, allowing for complete transparency. In the sciences, providing full access to data and documenting environmental factors are the norm. This is not happening, however, in DAH: art historians are not publishing their datasets and they are not documenting their computing environments adequately, thus preventing the community from evaluating their results fully.

b.   Recommendations

   i.   Implement a data management plan at the inception of the project

   DAH project managers must determine how long they want their project to last. Although these projects rely on the same standards of research and argumentation as traditional publications, DAH projects are not books and DAH practitioners should never measure their projects in "book time" but instead anticipate that the project is an iterative process that will necessarily develop as technologies and the field evolve. Recognizing this issue and implementing a data management plan at the inception of any DAH project is crucial to its long-term success.

   ii.   Document all stages of the project fully

   Complete documentation of the inception, design, planning, and implementation of a DAH project is necessary and should be archived. Such documentation should be recorded with the advisement of computer scientists and/or technology specialists who can explain the benefits and limitations of various software and content managements systems to the project managers. Such practice would allow for successful archiving and the potential to migrate data to new platforms if the original platform is retired or new opportunities arise. The ability to operate in different environments would be one important benefit of this practice.

   iii.   Develop models for migration or retirement

   The reality is that most DAH projects will not survive the next decade in their current form. Most participants agreed that while unfortunate, this situation would not discourage them from continuing with their current DAH projects or initiating new ones: the contribution of these projects, they concluded, was based on original

research and if new tools that allowed them to convey their conclusions in innovative or improved ways became available, then this would only benefit their work. A best practices model for the migration or "graceful" retirement of an existing project, however, would be beneficial. Therefore, participants recommended convening a working group of art historians, librarians, information specialists, and archivists that could outline the proper steps for retiring a DAH project and recording its activity for the archive. One participant suggested contacting the Art Libraries Society of North America (ARLIS/NA) (https://www.arlisna.org/) for professional support in organizing such a panel and recording its recommendations.

iv. Establish a registry that lists and notes the status of DAH projects

Several participants advocated for the production of an online Annotated Directory of Digital Art History Projects that would provide ease of discoverability and access to DAH projects. The Directory might also provide supplemental information for users such as reviews of DAH projects and tools, educational materials, and software tutorials, thus connecting art historians with the tools and techniques most appropriate to their research questions.

Pursuant to this suggestion, several members of ARLIS/NA, including specialists in digital humanities, web archiving, cataloging, and systems librarianship, met at the society's forty-fifth annual conference in New Orleans in February 2017 to discuss the implementation of an online Annotated Directory of Digital Art History Projects. Members agreed that ARLIS/NA's Web Archiving Special Interest Group should be closely involved in this endeavor: the expertise of this group would ensure the successful preservation of DAH projects, the rigorous development of best practices guidelines, and a standard for charting changes in methodological approaches in DAH over time. Furthermore, an ARLIS/NA Directory may also address challenges regarding diversity (see the section "Diversity" [III.B] below): the range of institutions represented in ARLIS/NA would assure the full representation of DAH projects from a variety of sources, private and public. Thus, this initiative as addressed at the ARLIS/NA conference would advance both the visibility of DAH projects as well as the partnership between art historians and librarians (see below, section III.A.b.v).

v. Promote partnerships with libraries and archives

Currently, libraries and archives are at the forefront of thinking about the documentation of digital content. In order to document and archive a DAH project properly, it makes sense to consult with these specialists at the inception of any DAH project. DAH will benefit from best practices created in the realms of cataloging, preservation, and access, all of which fall under the purview of information specialists.

vi. Found a consortium

An additional initiative that would directly benefit the field is the establishment of a consolidated online hub for DAH research and resources. Many university art history departments, art research libraries, and conservation studios (for example,

the University of Maryland's Maryland Institute for Technology in the Humanities; Duke University's Wired! Lab [http://www.dukewired.org/]); and the University of Pittsburgh's Visual Media Workshop [http://www.haa.pitt.edu/visual-media-workshop]) support online spaces dedicated to DAH research and resources. These websites, however, often duplicate materials presented on other DAH sites. Instead of "re-inventing the wheel" each time a new DAH initiative is launched, collaboration among all North American DAH groups on one research hub would benefit the entire field, offering a centralized access point for announcements, forums, DAH projects, resources (from bibliographies to syllabuses), and best practices guidelines. This hub would connect directly to the Annotated Directory of Digital Art History Projects discussed above in the section "Establish a registry that lists and notes the status of DAH projects" (III.A.b.iv), thus supplementing this resource.

B. Diversity

a. Challenge: Including New Audiences

Participants agreed that the issue of diversity—both in terms of content and audience—is a pressing one for the field of art history as well as DAH. One scholar, a university professor, noted that the lack of diversity in the study of art history in the United States is partly a "field problem": many American art history departments focus on the study of Western art and devote only one or two tenure lines to non-Western subjects. The fact that access to information about and images representing the arts of Africa, Oceania, and Asia is limited compounds this problem. As another participant observed, Anglo-American institutions often lead the way in providing access to high-resolution images and extensive data and—not surprisingly—these materials often focus on Anglo-American objects. Thus, DAH projects based on these materials are, by nature, restricted by the limitations of the online archive.

The issue of diversity also encompasses the question of audience. Participants noted that there persists among many art historians, curators, and museum staff members the assumption that their audience is of a certain ethnic group, class, and education level. Embracing new audiences is a topic that has been discussed before in relation to the study of material culture, but with mixed results. For example, Public Art History as a movement has not gained as much traction as Public History. How can DAH address this issue? At first glance, digital tools and popular platforms for aggregating and disseminating knowledge such as Wikipedia have the potential to expand audiences; yet they often perpetuate certain problems, including voice and intended audience. For example, Wikipedia articles rely on published, widely accessible information, which in the case of art-historical topics often translates to exhibition reviews and scholarly books and articles, materials that are already "tainted" by targeting a certain audience—i.e. the art professional or "informed" individual.[4] Thus, once again, the practice of DAH is inextricably bound with the issues confronting the discipline of art history in general.

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[4] By raising these concerns, however, participants were clear that their intention was not to devalue expertise; instead, their objective was to encourage specialists to consider the needs of a diverse audience when preparing online publications.

b. Overview: What Can the Digital Do?

It is crucial that the problems listed above are not perpetuated in the digital sphere. Characteristics of DAH that would allow for increased sensitivity to these issues are the speed with which changes can be made to DAH projects and its ability to aggregate many responses. Online catalogues and resources provide art historians with the opportunity to draw on a wide base of contributors, encourage their input, and incorporate their solutions immediately. One example is the museum website that encourages visitors to tag items as they view them and designate their favorites or those of special interest, thus transferring the curatorial practices of describing objects and selecting those items for increased attention from museum staff to the audience. Yet, the question remains: Who is visiting these websites? Are these sites attracting certain sectors of society? Certainly, only individuals with access to a computer and sufficient leisure time can engage in these practices of searching, viewing, and tagging. As one participant commented, "open access does not necessarily mean equal access." Is it possible, another participant asked, for the digital to help art historians reach audiences that do not have *regular* access to computers?

A third participant queried if art historians should consider the museum itself a database. Is the information disseminated to the public neutral, he asked, or mediated? The general response was that yes, such information *is* mediated and art professionals must be transparent regarding their interventions. For example, digital images—often considered "neutral content"—can function as hubs for information but they are also points of manipulation and consumption, as Mike Pepi has discussed.[5] Raising awareness of this issue is critical to developing a less compromised archive.

c. Examples from the Field

Two possible models for more sensitive museum practice include recent initiatives launched by the Rijksmuseum, Amsterdam and the Cleveland Museum of Art, Cleveland. In the latest iteration of its online collection, the Rijksmuseum has developed the "RijksStudio," which allowed a user to create a personal collection that posted new titles for works of art collected during the country's colonial period (see "Black Presence & Colonial History in the Museum" at https://www.rijksmuseum.nl/en/rijksstudio/1572676--black-presence-colonial-history-in-the-museum/collections/black-presence-in-the-rijksmuseum), thereby empowering a museum audience member to address the inherent biases in museum cataloging practices actively and efficiently. The Cleveland Museum of Art has installed a forty-foot interactive, multi-touch MicroTile wall in a dedicated space near the entrance to the institution (http://www.clevelandart.org/gallery-one/collection-wall) that displays all works of art from the permanent collection currently on view. This wall allows visitors to experience an instant overview of the collection, select objects they would like to see, and post comments, thus simultaneously personalizing the museum experience and connecting museum audiences.

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[5] Mike Pepi, "Is a Museum a Database? Institutional Conditions in Net Utopia," *e-flux* 60 (December 2014), http://www.e-flux.com/journal/60/61026/is-a-museum-a-database-institutional-conditions-in-net-utopia/ (accessed January 1, 2017).

d. Recommendations

i. Share resources

Participants engaged in the study of non-Western arts suggested that they might in some way compensate for the limited data available to the public by sharing their personal and institutional images and data in a robust online environment. Possible platforms include GitHub, Zotero, and established Photoarchives with an online presence that could be encouraged to expand the scope of their collections and integrate these scholarly gifts into their holdings.

ii. Establish a special interest group on minimal computing

The physical limitations that restrict access to the digital will remain an issue for the foreseeable future. Thus, scholars must be sensitive to the issue of low bandwidth— that in many regions of the world, cell phones may be the only connection to the Internet. A special interest group devoted to exploring minimal computing would be a first step in developing creative solutions to this problem.

iii. Signal that art historians and curators are interested in diversity

Participants noted that the public often considers the professionals responsible for the care, preservation, and interpretation of cultural heritage "gatekeepers," i.e. authoritarians who set limits on access to, interaction with, and understanding of cultural objects. Rethinking the tone with which art historians present their research—both on and offline—is crucial if they are serious about expanding not just access to but interest in their work. Avoiding jargon and opaque language, privileging the image over text, and developing digital spaces that offer multiple ways to engage with objects and information about them may be ways that they can attract new audiences.

iv. Develop a more playful attitude to art-historical scholarship

An innovative, if controversial, suggestion was for the art-historical community to encourage a more experimental and enjoyable approach to scholarship and its communication. The fact that many audiences view art history as the province of the elite necessitates that art historians review—and rethink—the presentation of their work. Encouraging play and personal exploration (both useful pedagogical strategies) might offer new ways to engage a broad public.

v. Reward those institutions that embrace diversity

Establishing a metric for audience participation might help institutions to incorporate the voices of diverse audiences productively.

C. **Valuing Translators**

a. <u>Challenge: Negotiating Collaboration</u>

DAH projects by their very nature demand the involvement of several professionals. One member of these teams, however, is often overlooked: the "translator"—the person able to mediate between the art historian and the computer scientist. The role of these collaborators is frequently undervalued primarily because they do not fulfill a traditional function in the academy or the museum: their liminal status contributes to the confusion of how to judge and reward their work. An additional issue is that these "translators" are often junior faculty members, graduate students, curatorial assistants, or information technology specialists—young scholars more familiar with recent technologies and/or more comfortable with learning new tools and methods or in the case of IT professionals, employees without much institutional clout. The potential to exploit these individuals (consciously or not) is unfortunately high.

b. <u>Examples from the Field</u>

As one participant remarked, scholars often expect those involved in computational technologies to be fluent in all aspects of the field. Such an assumption, however, is a mistake: just like art historians, computer scientists and IT specialists have their own areas of expertise. When art historians approach a member of an IT department assuming that that individual can handle all technical aspects of a DAH project, they are not conceptualizing their project in a productive manner. Art historians must do their homework and carefully choose the members of their team from those willing and able to work on their projects, perhaps even enlisting participants from other institutions. Such collaborations can be fruitful: for example, art historians from one museum have successfully teamed with an individual computer scientist and the engineering school of a nearby university to create new tools for art-historical research.[6] Despite the perceived division between the sciences and the humanities, technologists are often interested in humanities research questions. This is clearly an opportunity for the art-historical community.

c. <u>Recommendations</u>

i. <u>Develop an intellectual team rather than rely on temporary "hired hands"</u>

Fostering effective collaboration and cultivating a robust working relationship among all contributors to a DAH project is directly dependent on strong institutional support for all parties. As mentioned above, the translator's role is often undervalued because he or she does not fulfill a traditional function in the academy or the museum. This problem will be perpetuated until a well-developed reward structure is in place at institutions that support DAH projects. Instead of relying on IT specialists, curatorial assistants, or junior faculty to facilitate projects on an ad-

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[6] For more information regarding this project, see Lhaylla Crissaff, Louisa Ruby, Samantha Deutch, Luke DuBois, Jean-Daniel Fekete, Senior Member, IEEE, Juliana Freire, Member, IEEE, Claudio T. Silva, Fellow, IEEE, "ARIES: Enabling Visual Exploration and Organization of Art Image Collections" to be published in a forthcoming issue of *IEEE Computer Graphics and Applications Magazine* (https://www.computer.org/cga/).

hoc basis, these institutions are encouraged to establish a program or department to provide support for all projects.[7] Within such a program or department, academic directors and managing directors (both of whom are crucial to the success of any DAH project) would ideally be equals; this model would motivate scholars and curators, who are generally the instigators of DAH projects, to act less as leaders and more as collaborators.

ii. <u>Train art historians to become collaborators</u>

It is a given that art historians must become familiar with the technologies that they will be employing in their DAH project. (How art historians may gain this knowledge is discussed below in the section "Training" [III.D].) These skills, however, are not the only ones that they must cultivate. They must also become familiar with the research, methods, and philosophies of the other members of their team so that they may communicate effectively with their collaborators and understand fully the benefits and limitations of the selected tools and methods and how these techniques affect art-historical research questions. They must also learn to translate their work for different audiences so that they may successfully function as mediators between various contributors. In short, art historians must learn to explain, share, and negotiate rather than demand solutions. This is indeed a new way of working for academics and curators, and participants acknowledged that this may not be a comfortable development for many scholars. Yet art historians must realize that the sense of compromise that often pervades the DAH project is illusory: the anxiety that frequently accompanies collaboration is the result of fundamentally poor structures in their organizations. The full collaboration of equal partners would resolve this perceived conflict. DAH projects achieve new solutions only through a sustained process of listening, sharing, and negotiation between peers.

iii. <u>Invest in co-teaching across disciplines</u>

Developing a curriculum that incorporates more co-taught co-disciplinary courses has the potential to encourage collaborative working—and thinking—in the university setting by cultivating an environment that promotes an awareness of different methodologies and the appreciation of different perspectives. Such a curriculum also models for students (and faculty) what collaboration looks like in the academy, a valuable lesson in itself. To stimulate this academic trend, academic departments might consider reallocating tenure-track lines to methodologies rather than regional schools.

iv. <u>Clearly define roles and recognize all contributions</u>

All collaborators deserve appropriate training, reasonable opportunities, and full recognition for their contributions. To foster an environment in which a DAH project can flourish art historians must remain aware that technology professionals are not "working" for them but are key members of their team and must be compensated and credited appropriately. For example, when publishing, all members of the research team should be credited alphabetically. Those supporting

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[7] The staff of such departments and programs will certainly include several "translators." For information on the expanding alternative-academic market, see http://mediacommons.futureofthebook.org/alt-ac/.

this recommendation were aware that not all art historians would be comfortable following this model. Such concern is understandable: it reflects how art historians are valued in their communities. Several co-authored papers may not impress a tenure committee or the head of a department. It is therefore crucial that established academics and curators lead the charge and model this approach for the rest of the field.

v.   Integrate "translators" into the scholarly field and professional realm

The widespread adoption of DAH will necessarily produce new jobs. This has already happened at the National Gallery, Washington, which employs several specialists in digital content management. Similar positions need to be defined, funded, and implemented. When such positions become common, training will become a more straightforward process: various skill sets will be defined and academic programs can address the issue of developing these skills directly.

D. Training

a.   Challenge: A New Way of Working

DAH demands not only fluency in computational tools and analytical methods but also a new way of working. The discussion regarding this new way of working touched on three core issues: data, sharing, and the very nature of art-historical scholarship.

Obviously, developing a dataset is fundamental to any work in DAH. The dataset, however, is the primary obstacle for many art historians and students. Many participants—from all sectors—noted that while there is interest among art historians, students, and other professionals in experimenting with the tools and methods of DAH, there are few datasets available for them to work with, let alone one that is meaningful to them. The Museum of Modern Art, New York, the Cooper Hewitt, Smithsonian Design Museum, New York, and other institutions have helpfully uploaded their institution's collections and/or exhibitions databases onto GitHub (e.g. https://github.com/MuseumofModernArt/collection), thus providing useful datasets for research, training, and teaching. (One participant suggested that all museums be encouraged to make as much non-sensitive data about their collections available in a similar fashion, thus providing art historians with a wealth of datasets for these purposes.) Yet even with these available resources, the majority of researchers will have to develop their own dataset. For many, compiling this dataset has the potential to be more challenging than mastering new software. It is laborious: the sheer volume of material is overwhelming. Scale begets another issue: as researchers enter massive amounts of information into a spreadsheet, a great leap of faith is required that when the set reaches a critical mass and a preliminary analysis can be attempted, meaningful patterns will emerge. This is not a situation most graduate students running out of funding or assistant professors racing against the tenure clock would risk. Although most art historians are trained to work in archives (admittedly often tedious work), building a dataset requires a different set of skills, and data entry, many participants admitted, does not feel like scholarship.

Another issue raised was that of sharing—not only knowledge and expertise but also datasets. The dissemination of data is a sensitive issue among art historians. Traditionally, freely sharing materials is not how art historians work (although this is the norm for

scientists). Researchers in the humanities make discoveries (archival or intellectual) and then publish their findings, receiving credit from the scholarly community for their achievement. Working with datasets, however, raises a new set of issues. Certainly, it may be argued that these datasets are original scholarship, even in their raw form. In many cases they comprise unpublished information culled from a variety of resources, including archives. They must also be structured in a certain way for the visualization selected by the researcher to mean anything—or, more specifically, for the visualization to mean something to the researcher and his or her audience, which is an interpretative act. Thus, is it the data or the visualization (which is essentially the argument) that is the original work of scholarship? If it is the latter, participants concluded, then the data should be made available. After all, the "heavy lifting"—determining patterns, structuring the argument, conveying the results—has been done and is available. The data is simply another tool: Or, participants asked, is it? Opinion was divided and a consensus was not reached. One participant joked that researchers should only share their datasets when they earn tenure. Another participant observed that datasets are not copyrightable: since they are compilations of factual data, they do not meet the legal requirement necessary for copyright protection. This point is understandably of great concern to scholars. These issues link to another theme that was heatedly contested throughout the conference: How much should the sciences act as a model for the Digital Humanities, DAH in particular? By adopting the sciences as a model, how much is the discipline of art history compromised?

b. Recommendations

   i. Integrate DAH into the curriculum

       A key concern is to naturalize computational fluency among art historians, not isolate practitioners of DAH into one skill set. Even those academics and professionals supportive of DAH must recognize that workshops and brief (i.e. one- or two-week) courses in specific tools and software are not effective strategies for developing digital literacy and a long-standing, productive engagement with DAH.

       The first step to rectify this situation is to create new courses. Instructors should consider reaching out to members of humanities and computer science departments and collaborate on additional interdisciplinary courses that assign the development of a DH/DAH project. Departments should also consider establishing certificate programs in DAH. The study of computational languages and analytical techniques would parallel traditional training and be formally recognized and valued by the university. Formal recognition might translate to future opportunities on the job market.

   ii. Establish baseline competencies

       Determining professional standards for baseline competencies in DAH would offer a concrete roadmap for the development of a robust undergraduate curriculum in the field. As a group, digital art historians must debate what methods, techniques, and strategies constitute digital literacy.

iii. <u>Create an online space for pragmatic approaches</u>

All discussions regarding the development of a curriculum in DAH should be open and inclusive. This exchange could be conducted through a listserv designed to share syllabuses, assignments, in-class exercises, and student projects or a centralized repository hosted by a professional institution. Mobilizing online art-historical and pedagogical publications to devote issues to the theme of teaching DAH would also promote such discussion.

iv. <u>Mobilize existing professional organizations to advocate for DAH</u>

The College Art Association (CAA) (http://www.collegeart.org/) has demonstrated its commitment to the field of DAH through, among other activities, its joint publication in January 2016 with the Society of Architectural Historians (SAH) (http://www.sah.org/) of the "Guidelines for the Evaluation of Digital Scholarship in Art and Architectural History" (http://www.collegeart.org/pdf/evaluating-digital-scholarship-in-art-and-architectural-history.pdf) and the launching of new section on *caa.reviews* (http://www.caareviews.org/) devoted to the assessment of DAH projects, together with adding an editor charged with overseeing such reviews to the open access born-digital journal. The organization, however, should be encouraged to take on additional roles of advocacy and organization. Suggestions for how CAA could promote training in DAH included establishing centralized repositories for teaching resources in DAH and for DAH projects by students and teachers on the organization's website. In addition to mobilizing CAA, other professional organizations with strong membership among art historians should be encouraged to support training in DAH.

Participants in "Art History in Digital Dimensions" are also exploring the possibility of creating a new society, to be a CAA affiliate, that would support and advocate for the education of digital art historians.

It is important, however, to connect with professionals and organizations outside, though aligned with, the field of art history such as ARLIS/NA and the Visual Resources Association (VRA) (http://vraweb.org/) and enlist their support. These professionals and organizations can assist in the development of new means of discoverability and access to DAH projects, produce relevant tools, provide datasets, and organize workshops and training sessions.

v. <u>Incentivize graduate students and junior scholars to explore DAH</u>

Providing support—whether financial or formal recognition for distinguished achievement—for DAH projects is an extremely effective means to encourage experimentation with DAH among younger scholars. One possible model for such support is the Graduate Student Award sponsored by New York City Digital Humanities (NYC-DH) (http://nycdh.org/nyc-dh-graduate-student-project-award/). Adding such awards to other forms of scholarship recognized by CAA or other learned societies could be another opportunity for these societies to support DAH.

vi. Encourage mentorship

Veterans in the field should be mobilized to offer practical advice to graduate students and junior scholars curious about DAH, especially in regard to the impact undertaking such work might have on their careers. To foster mentorship, veterans should be encouraged to sponsor events (sessions, roundtables, or even informal lunches) at a variety of professional conferences that will bring together a broad range of DAH practitioners at all stages of their careers.

E. Audience

a. Challenge: Expanding Interest and Accessibility

Despite the potential of computational tools to bring art-historical research to a broad and diverse audience, accessibility remains an issue. Standardization is necessary yet creates additional problems. For example, in what language should DAH projects and DAH journals be published? The *International Journal of Digital Art History* (http://www.dah-journal.org/) is published in English; its editors, however, have pointed out that this decision promotes readership in the United States and Germany at the expense of other regions of the world. Will their choice result in DAH being more widespread among English and German-speaking audiences?

Another issue raised by the participants was the need for platforms that allow for widespread access to complicated DAH projects. This is a technological issue that will require sustained research and funding.

b. Recommendations

i. Practice thoughtful identification

Art historians should place the consideration of their audience at the center of their projects, especially at the planning stage. Participants recommended the implementation of feedback loops as one means of assessing audience engagement and response.

ii. Favor open source software

A commitment to openness should be at the heart of all DAH projects and art historians must determine a way to reward the projects and institutions that take this mandate seriously. Establishing a metrics of success for a range of DAH projects that rewards the adoption of open source software (as well as audience participation) has the potential to address this issue.

iii. Develop new tools for iterative projects and project evaluation

To involve the public in a meaningful way, there must be an ongoing process of evaluation from the project or site's audience. This is what the digital can do well: aggregate responses and implement changes rapidly. Art historians must embrace these strengths, using to their advantage this ability to canvass users and address their needs and desires. Participants were aware that many art historians might be

uncomfortable with this recommendation as this model forces the scholar to surrender some control of the project. Audiences will inevitably favor objects, themes, and issues that art historians find extraneous or misleading. Yet scholars must learn to compromise if they are to gain a more complete understanding of the interests of their audience.

iv. Increase attention to interface design

Participants stressed the importance of an effective and engaging interface for DAH projects. Many expressed surprise that this crucial aspect of a DAH project was often neglected until the last stages, if considered at all. Thus, participants strongly recommended that teams consult designers as well as specialists in design history (a remarkably underutilized resource among art historians) during the planning stage of their projects.

IV. Additional Considerations

A. Funding

Maintaining sufficient funding for DAH projects and the journals and programs that support them is an ongoing concern. Not surprisingly, each participant's experience acquiring and maintaining financial support for their projects was vastly different, ranging from complete institutional support to taking on adjunct teaching assignments to self-finance their research. The majority were aware of several projects that were abandoned or retired due to lack of funds. All agreed, however, that this issue—like the challenge of diversity—is endemic to the humanities as a whole.

Fortunately for the field, the Getty Foundation, the Samuel H. Kress Foundation, and the Institute of Museum and Library Services (IMLS) among other institutions have been active supporters of DAH. Yet, art historians cannot rely on the continuance of such support, as generous as it has been. For the field to progress, all museums, cultural agencies, and universities with art history programs must institute an ongoing means of support for DAH projects, allocating resources for the development and maintenance of DAH projects into their annual research budgets.

a. Recommendations

Several participants called for the establishment of an online site dedicated to the aggregation and dissemination of information regarding possible funding opportunities for DAH projects. Such a space would also provide a platform for the exchange of strategies for obtaining financial support and promote networking, thus also allowing research groups to discover new opportunities for collaboration.

A second recommendation is for each institution to establish a metrics of success for a range of DAH projects. When art historians and art professionals have the tools and language to clarify the goals, achievements, and benefits of their work they can more effectively communicate the importance of their projects to their home institutions as well as outside funders. While some participants raised concerns that instituting a set of standards might stifle creativity and orient the field toward a business model, others

maintained that encouraging institutions, especially universities, to establish a reward system and contingent funding structure was necessary for DAH to advance.

A third, admittedly controversial suggestion was to reach out to technology companies and private investors for additional support. A few participants observed that many computer scientists, IT specialists, and business leaders are interested in art-historical research questions and the technological problems raised by them and may through exposure to DAH discover new investment opportunities. Certainly, these participants were aware of the risks involved in such collaborations; nevertheless, they argued that art historians should explore this potentially important source of financial assistance.

B. "Cost"

Most participants agreed that DAH requires sacrifices. As discussed above in the section "Challenge: A New Way of Working" (III.D.a), collaboration is crucial to the success and sustainability of a DAH project. While there are significant benefits to this model, it inevitably requires compromise—a significant cost for most scholars. In the context of training, DAH requires difficult decision-making for students completing their undergraduate or graduate degrees. As one participant argued, "Students can't learn German, French, and the language necessary to their specialization *and* two computer languages in an eight-year period. What sacrifices," he asked, "must be made and will such strategizing pay off in the end?" A similar concern plagues junior scholars embarking on their careers: How much time and energy should they devote to work that employers and tenure committee members might not value—let alone understand? Beyond the issue of acquiring and maintaining financial support for DAH projects, the costs of doing DAH are prohibitive for many art historians.

b. Recommendation

Implementing the above-mentioned CAA/SAH recommendations for publishing, reviewing, and valuing DAH projects is crucial to resolving these issues (see "Mobilize existing professional organizations to advocate for DAH" [III.D.b.iv] and "Funding: Recommendations" [IV.A.a]). Each institution should supplement these recommendations with their own metrics for scholarly and public engagement as appropriate to its mission and audience.

C. Definition of DAH

At several points during the conversation, participants raised the issue that DAH as a field has not been clearly defined, which may be one reason why those engaged in its practice experience resistance among more traditional art historians. As one graduate student commented, gaining the necessary computational skills was the easy part for him: what was more difficult was understanding what DAH meant to his work and the discipline as a whole. Yet as mentioned above (see note 1), some participants argued that the term DAH is not necessary: using digital materials and tools is not a research method but a means of communication—the researcher's methodology is embedded in the research questions posed and the choice of materials consulted, not the dataset. For these participants, as more art historians embrace digital tools as a means of disseminating their research findings, the term DAH will become irrelevant.

a.   Recommendation

As a group, supporters of DAH must determine the parameters of DAH, noting what it means for both the educational and cultural heritage sectors, and become proselytizers for the field.

V.   Conclusion

A.   DAH or the DAH *Project*?

Throughout the conference, the conversation focused primarily on DAH projects rather than the field as a whole. As noted above in the section "Definition of DAH" (IV.C), many participants were concerned that DAH as a field has not been clearly defined, thus causing confusion and promoting resistance among some art historians. While the development and sustainability of DAH projects is of great importance, more attention should be focused on articulating what DAH means to art-historical research.

B.   Reviewing Traditional Methods

During the concluding remarks of the conference, several participants raised a surprising and intriguing point: that new digital tools such as high-resolution images as well as the sheer volume of digital materials presently available were refocusing attention on the object. Decades after the intervention of cultural theory, art history, they suggested, might be experiencing a widespread "re-turn" to the in-depth study of the work of art (the practice of connoisseurship) and issues of organization (the practice of cataloging). Participants debated if this trend would be profitable for the discipline as a whole and speculated what issues art historians should concentrate on if this turn became more widely instituted. Art historians, they concluded, must be sensitive to both the advantages and limitations of this direction.

C.   The Central Location of the Image

It is a truism that art historians work visually; yet art historians convey their understanding of images and objects with words. DAH has the potential to change how art historians communicate, allowing new means of expression that incorporate imagery in more productive ways. This may be one of the most important contributions that DAH can bring to art history. In a digital environment, images can become hubs of information, literally (as the central node of an information network) and figuratively (thus regaining its primacy in our thoughts and research). Perhaps taking on this challenge—restoring the image to a more central location in art-historical research and its communication—will help art historians to define what DAH means to the discipline as a whole.

D.   What DAH Can Contribute to Art History

Despite the challenges facing the field, participants were united in their affirmation that DAH is of immense benefit to art history, if only to challenge art historians to review their current practices. As one participant attested, only by breaking out of the language, structures, and frameworks to which art historians are accustomed will they be able to determine what art history means to them and how they hope to shape it to the future. Perhaps the greatest benefit of digital methods and technologies is that they render the

familiar unfamiliar and motivate art historians to view their work from additional perspectives.