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Nineteenth-Century Art Worldwide's "Digital Humanities and Art History": Reflections on Our First Articles

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Abstract:
> From 2012 to 2015, *Nineteenth-Century Art Worldwide* published six articles in its "Digital Humanities and Art History" series, supported by a grant from the Mellon Foundation. In this article, Petra Chu, Emily Pugh, and Elizabeth Buhe review the series and share their experiences working on these articles. They discuss the goals of *NCAW*'s DHAH initiative, present lessons learned, and share their insights into the influence of digital humanities methods and techniques in the field of art history.

Digital Humanities and Art History

Nineteenth-Century Art Worldwide's "Digital Humanities and Art History": Reflections on Our First Articles
by Emily Pugh

with Elizabeth Buhe and Petra Chu

In the summer of 2011, *NCAW*'s managing editor, Petra ten-Doesschate Chu, collaborated with Emily Pugh on a proposal for funding to support the expansion of the journal's digital publishing capabilities. Later that year, *NCAW* was awarded a generous grant by the Andrew W. Mellon Foundation, and from autumn 2012 to autumn 2015 the journal featured a total of six articles as part of a series called "Digital Humanities and Art History" (DHAH). For all but the last two of these articles, Emily Pugh served as the lead publication developer, a role that included project management and web development tasks. For the final two articles in the series, she shared her duties with project manager Elizabeth Buhe and web developer Allan McLeod.

At the outset, Pugh worked with Chu to select the six articles, the proposals for which went through a blind peer-review process. These DHAH articles cover a wide range of topics, from early American landscape history to the study of art markets in Europe to nineteenth-century photography and museum history. The articles feature a range of digital art history methodologies, including geographic mapping, social networking, and virtual recreation of museum galleries, as well as a variety of presentation platforms, from Neatline and ArcGIS to a modified version of the Internet Archive's BookReader. Some of the authors were very experienced in digital technologies; others less so. Some of the research projects were well underway by the time their corresponding articles were submitted; other projects were begun and completed in the few months dedicated to the production of the published articles.

Now, following the publication in autumn 2015 of the sixth article in the series and the final article funded by the Mellon grant, we have the opportunity to reflect on the process as a whole, recounting our efforts and sharing what we and those who have worked on these articles learned in producing them. Ultimately, with the DHAH series we tackled all aspects of digital publication, from the use of computer-based tools and methods in art-historical research, analysis, and discovery to the use of online publication platforms for presenting the resulting scholarship. Our hope and expectation is that our experiences will contribute to the further exploration of digital humanities within art history, offering both concrete examples of research questions that have been addressed through the use of advanced computing platforms as well as models for online publishing of scholarly essays.

Our Goals and Approach
One of our primary goals in undertaking the DHAH series was to expand the potential of

NCAW's online publishing platform. Although it had always been the intention of the journal's founders to do so, by 2011 *NCAW* had not yet taken full advantage of available online technologies, such as streaming video, zoomable images, or various forms of interactivity. The journal had also not had the opportunity to publish articles by authors working with digital humanities—articles that often need the enhanced possibilities of online publication to convey the full interpretative effect and extent of the research. While we sought to expand the technological capacity of *NCAW*, we did not want to preselect a particular technology or set of technologies to fulfill this goal, nor did we want to reinvent the entire infrastructure of the journal, which is built in the Joomla content management system.[1] We felt we could not build a publication platform to support digital art history without first having a clear idea of what presentation formats were needed. Moreover, we did not want technology dictating the art history we produced, nor did we want to abandon our existing models and standards of scholarly art-historical publication. For these reasons, rather than rebuild the journal itself, we chose to let the research questions and methodological approaches define what technologies would be used for these articles, in either their analysis or presentation phases. Accordingly, in our call for submissions, we outlined the following key areas of research and methodology in which we thought digital tools for analysis and presentation would be most efficacious: data mining and analysis, geographic information systems (GIS) and maps, and presenting high-resolution imaging and dynamic-imaging.

Another reason we chose not to rebuild the technological infrastructure of the journal relates to a second key goal of our DHAH effort: to support the broader adoption of digital technologies for research and publication within the field of art history. In order to fulfill this objective, we sought to address practical, even mundane issues related to digital art history publishing (such as citation, multiple authorship and attribution, peer review, and sustainability) that need to be solved if digital publication platforms are to become mainstream. We felt that by taking a research-focused approach we could begin establishing standards and models that might guide others. We also hoped our work would result in the creation of a network—made up of art historians working in the digital humanities, technological specialists such as programmers and application developers interested in humanities research, and experts in digital publication platforms and techniques—that could support the further development of digital art-historical research and publishing.

Finally, in order to encourage digital humanities approaches, we wanted to use part of the funding to help authors as they developed their articles. Normally journal staff are not involved in the research phases of the articles they publish, but we believed that hands-on support for this part of the scholarly process would be necessary if we wanted to encourage authors to experiment with new technologies and methodologies. We also assumed (correctly, as it turned out) that it would be difficult to find authors with ready-to-publish articles of the kind we hoped to feature. We surmised that there were many more art historians interested in trying new approaches than authors who had the financial means and conceptual know-how to execute them, much less publish the results.

NCAW's DHAH series was very much an experiment. We hoped it would be successful, of course, but we also knew that, because of its experimental nature, we would face challenges that would limit or frustrate our progress. Discovering and understanding such obstacles was a critical motivating factor of the DHAH project; we felt certain that new and unforeseen

questions would be raised in producing these articles, and we considered the identification and articulation of these questions an important outcome of the endeavor. After publishing six articles, in addition to creating models for online digital humanities scholarship that we hope are useful for others, we believe that we have, indeed, identified many of the critical issues facing the widespread adoption of digital humanities in art history, and we hope that our insights will invite and encourage the community to address them.

Lessons Learned

Many of the most significant and persistent issues we faced in producing the DHAH series related to the articles' production. Working through these challenges required us to break down the process of producing an art-historical publication and to think consciously and deliberately through each step in the creation of a piece of scholarship, from research and analysis to presenting interpretation, argumentation, and evidence. Examining this process helped us understand the potential of digital publications as well the key difficulties of publishing research produced through the use of digital humanities methods in online formats.

The first challenge became readily apparent as Pugh began work with Anne Helmreich and Pamela Fletcher on their article, "Local/Global: Mapping Nineteenth-Century London's Art Market," which maps the locations of major London commercial art galleries in the second half of the nineteenth century and presents visualizations of the social networks of art dealers based on sales data drawn from the stock books of Goupil & Cie and its successor, Boussod, Valadon & Cie, for roughly the same period. The challenge was this: it is difficult to draft all of the article's content (essay text, captions, images, hyperlinks, data visualizations, maps, etc.) when one doesn't know the final form the article will take; however, to decide on the final form of the article (its layout, how components will link together, how and where links or text will appear, how many web pages it will comprise), one has to know something about all of the article's content. In traditional modes of print publication (i.e., books and journal articles), this problem does not exist. One always knows what the end product will look like: a physical page with numbers, footnotes, illustrations, and the rest of the elements that are expected features of print publication. Moreover, these elements are governed by the well-defined standards outlined in resources such as *The Chicago Manual of Style*. Even when one opens a new document in software like Microsoft Word, the first thing one usually sees is the visual representation of a piece of paper. In this way, authors are from the start producing content that is tailor-made for a particular, narrow set of regulated formats and styles that readers, in turn, have been trained to interpret. By contrast, in producing digital humanities articles, authors, programmers, and editors alike cannot always envision the final product.

As we began this endeavor, it became clear that each member of the production team, including the authors, needed to see a draft version of the article, and all of its elements, online to inform their decisions about the form and content. For example, let us look at the Spring 2013 DHAH article, "'In the Park': Lewis Miller's Chronicle of American Landscape at Mid-Century," by Therese O'Malley and Kathryn R. Barush. The text for the "Transcription and Description" and "Notes and Sources" elements of the digital facsimile at the centerpiece of this article was created and edited in a Microsoft Word document, but it was at first unclear how the text would be connected to the sketchbook images being annotated. Where would it appear on the screen? To the left? At the top? What functionalities would be activated by a

reader clicking in this or that block of text? Would pop-ups appear? Web pages load? Without seeing the transcriptions, descriptions, notes, and sources in their final presentation format, it was impossible to either finish drafting the text or finish editing it.

Negotiating the tension between content and format revealed yet another conflict, this one between tools of analysis and tools of presentation. As authors worked on their data visualizations (among them maps, virtual environments, and diagrams), both authors and the *NCAW* production team were compelled to explore and define the function of these visualizations. To what extent were they research tools for the authors, as opposed to evidence the authors used to illustrate or support their arguments for readers? This ambiguity between sources used for research and those used as evidence is already a function of art-historical publications. In many cases, the artworks we analyze are both tools for our research and, when they appear in publications, evidence invoked to advance our arguments to an audience. Researchers routinely survey many more works of art, as well as many more books and archival documents, than they reference in their final publications. Then, in presenting their arguments as a published piece (whether books or journal articles), authors engage in a process of transforming their research into a suitable format, carefully considering which sources to include based on the efficacy of these sources in illuminating or bolstering the interpretations authors make in the text. This process can be more difficult to navigate when one is working with research tools, publication platforms, and methods specific to the digital environment. For example, the relationship between a tool of analysis and one for presentation becomes even murkier when the two look similar and are interacted with through the same web browser. Many of our authors faced this ambiguity in developing their articles, and Elizabeth Buhe in particular reflected on this tension very thoughtfully in the project narrative for her article ["Sculpted Glyphs: Egypt and the Musée Charles X."](#) Considering the creation of what she calls the digital "reenactment" of the Egyptian section of the Musée Charles X, Buhe writes:

> It is also important to recognize that the experience of viewing the model is necessarily different from the experience of "making" it (selecting objects based upon their relationships to one another), which was both a creative and an analytical exercise that made [curator Jean-François] Champollion's choices apparent to me in a way that they otherwise would not have been. Therefore, creating the model was just as important to the scholarship as its eventual accessibility to viewers.[2]

Producing the articles for the DHAH series forced all involved to think through the steps by which research and analysis become published materials. This was a conceptual but also practical process. Digital files in proprietary formats must be transformed before they can appear online. For Helmreich and Fletcher's article, for example, we had to consider how we might create web-friendly illustrations from the .gephi files produced by the eponymous network visualization tool. This meant deciding on an appropriate file format and web script to use in embedding those graphic files into the HTML for the article.

Initially, our approach in publishing these articles was to simply share the authors' digital components directly on the web. Once faced with the challenges described above, however, we thought less about posting "raw" digital tools on *NCAW* and instead began to ask authors to think in terms of "edited" versions of those digital tools or platforms. For example, working with Dana E. Byrd on ["Tracing Transformations: Hilton Head Island's Journey to Freedom, 1860–1865,"](#) Buhe and Pugh advised the author to begin by putting every point of interest and

detail on her map as she continued to research and write her article. We asked Byrd to think about readying the piece for publication as a second step—which we began to call "curating your data"—at which point she would choose which details or points to retain based on which were most important to her argument. In this way, an author's dynamic map or social network diagram can direct a reader's attention to those aspects that support and enhance the article's thesis.

As it turned out, by electing to focus on research questions and methodologies, and to support the research phase of each DHAH article, we had unknowingly committed ourselves to resolving the tension between the research, analysis, and presentation parts of the process. Using our method meant choosing to contend with the entire process of researching and publishing digital art-historical scholarship all at once and in a limited time frame. Taking on the whole of each article's production process was in some ways a strength of our project in that it forced us to identify and confront the issue of transforming research into a publication; however, taking on the entire process also introduced complications that perhaps interfered with our ability to innovate. In order to accommodate our ambition, we had to curtail experimentation in other realms. For example, we had originally hoped to use a JavaScript viewer developed by Elijah Meeks, then the digital humanities specialist at Stanford University, to present the network diagrams in Helmreich and Fletcher's article. Unfortunately, once we realized that creating publishable versions of the network diagrams was essentially a project unto itself, we simply ran out of time. For publication in *NCAW*, we chose a more simple, straightforward approach: we used JavaScript to integrate SVG (Scalable Vector Graphic) files into the HTML of the article page.[3]

Indeed, from the first DHAH article we worked on, it was apparent that our second most critical challenge would be accommodating the complexity of the production process and establishing an effective workflow for efficient publication. Working as *NCAW*'s first web developer from 2001 to 2014, Pugh and the journal's editors had created a reliable workflow for producing its more straightforward content: after an issue's articles have been written and edited in Microsoft Word, the executive editor gathers the main text and any associated images, captions, and paratexts (including article abstracts, author biographies, and the table of contents for the journal issue) and delivers their edited versions to the web developer (initially Pugh, and now Allan McLeod), who converts it into HTML and transfers it to the journal's content management system, Joomla. For the DHAH articles, Pugh soon realized that in undertaking this endeavor we had given ourselves the task of reimagining virtually every aspect of this publishing process, which itself had been painstakingly refined over the course of ten years.

Adding to this challenge, the DHAH articles were larger in scale than other *NCAW* articles: they included more images, more captions, and more paratexts. The DHAH articles also included new and varying file formats, many of which we had not dealt with before. The JavaScript and SVG graphics for "Local/Global" required the web developer to edit the code each time a change to a particular network image was made. Version control—that is, keeping track of which was the most current version of a particular document—became an incredibly difficult task. Copying and pasting text from Word to the content management system and then reformatting it for the web, already an arduous and error-prone process for conventional *NCAW* articles, became even more so with the DHAH content. Even editing the articles' text

components proved to be an unexpectedly significant challenge as editors were faced with new types and styles of content, for which there were in some cases no established style or formatting guidelines. In addition, we had to devise ways for editors to communicate requests for changes and corrections to content that appeared in fluid and dynamic presentation platforms; it was often difficult for the editor to specify to the web developer which particular piece of text needed changing.

Moreover, the challenges of negotiating between the content and its presentation format and between the analysis and publication stages of each article complicated the production workflow further, particularly with regard to timing. We soon found that the hours upon hours needed for building, using, and transforming the technological aspects of these articles was often so consuming that research teams frequently did not leave themselves enough time to reflect on what was revealed in the period of analysis. In some cases this necessitated last-minute editorial efforts to help authors better formulate their arguments. While we gradually became more adept at predicting how much time a particular step might take, we continued to struggle with the amount of effort these articles required. Authors also struggled with timing in the production of their articles. In the project narrative for her article "Mapping the 'White, Marmorean Flock': Anne Whitney Abroad, 1867–1868," Jacqueline Marie Musacchio notes that time constraints required her to "limit the scope of the project to Whitney's first sixteen months abroad, though she was in Europe for a total of five years over three trips." Yet, she writes, "even this shortened period encompasses some one hundred letters to and from Whitney, and I had to make difficult choices about the information I presented."[4]

Over time, the *NCAW* production team devised a number of ways to contend with these and other challenges. For example, although Pugh had not necessarily envisioned playing a central role in the production of these articles at first, she assumed the role of project manager very quickly, once it became apparent that someone needed to guide the articles through the production workflow; to provide advice and support to the authors; and to facilitate communication between authors, editors, the web developer, and other technical experts. As the project manager, a position Pugh termed "publication developer," she, and later Buhe, also monitored the schedule and budget for the articles.

Another solution to the complications of publishing these articles was to make the production workflow as iterative as possible. With each article, we built in more and more points at which we checked in with authors. We asked authors to begin writing their articles earlier in the process and also to share with us at these check-in points their text and any draft versions of their technological tools. Producing more content at earlier stages allowed us to provide significantly more informed guidance to authors and helped ensure a tighter integration between scholarly and technological development. It also helped the publication developers in identifying and addressing issues or challenges specific to each particular article.

To alleviate the tension between form and content, we tried to create a fixed framework into which we could place each article. That made it easier for authors to envision the final version and made production workflows more standardized, static, and thus more easily repeatable. The framework was based on separating the text from the technological content of each article; the text provided the context for interpretation of the tool, and the tool could be presented as its own entity. Planning each article in this way not only eased workflow but also

was often a necessity because the digital components for almost all of these authors' articles were created and stored on other institutions' servers.[5] Rather than migrating these resources to *NCAW* servers, we made the decision to simply direct readers to them via web links. Taking this simpler approach meant that *NCAW* would avoid having to assume responsibility for the long-term maintenance of authors' digital resources, as well as the difficulties inherent in reconfiguring our servers to accommodate the various technologies associated with each article.

Taking the approach of pointing to, rather than hosting, the articles' digital components also allowed authors to retain ownership and control over the platforms they created and helped us address issues of sustainability. We realized early on that privileging innovation and experimentation meant employing new and evolving technologies and standards and thus sacrificing the longevity of the resulting articles; that is, in using experimental technologies, we could not expect these articles to remain accessible and functional indefinitely into the future. Instead, by separating out the less durable technological components of the articles, we could better maintain the more durable textual components (i.e., the straightforward text and images). We could then create sustainable versions of the digital platforms and visualizations, saving them in more stable formats, such as videos or static images.

We began to devise solutions to address these difficulties of production and sustainability, as well as those for multiple authorship and attribution. We attributed primary or lead author status to those members of the research team who performed the majority of the analysis and interpretation for the article, whether the activities associated with that were composing text, writing code, or some combination thereof. We listed as secondary authors those involved to varying degrees with the production of the article. Critically, we paired this primary and secondary attribution approach with project narratives that provided detail about the tasks and responsibilities of each team member. We felt that such detail would be helpful not only to other research teams working on similar projects but also to tenure and review committees, to whom the particular nature of the work involved might be unknown or unfamiliar.

We are proud of what we have accomplished thus far with the DHAH series. We feel we have made great strides in identifying many of the critical issues related to digital research techniques and publication formats, and individual authors and articles have pushed the development of particular platforms and tools to great effect. For example, in working on their article "Mapping the 'White, Marmorean Flock'," co-authors Musacchio and Jenifer Bartle collaborated with software engineer David McClure and, in doing so, added new functionality to Neatline, a mapping tool and plugin for the Omeka platform.[6] As part of their work on Lindsay Harris's article, "Imagining a Nation's Capital: Rome and the John Henry Parker Photography Collection, 1864–1879," Harris and digital humanities–focused programmer Luke Hollis were able to modify and extend the codebase for the HyperCities platform and share their findings with HyperCities's developers.

We are also pleased with the DHAH authors' scholarly accomplishments. For example, in conducting extensive archival and online research on Lewis Miller for "'In the Park': Lewis Miller's Chronicle of American Landscape at Mid-Century," authors O'Malley and Barush made a startling discovery about the artist. Historians have long regarded Miller's drawings as unvarnished and objective "eyewitness accounts" that provide documentary evidence of what

daily life was like in his time.[7] To the contrary, O'Malley and Barush found that Miller in fact based many of his drawings on images from illustrated magazines and guidebooks of his time; Miller's view of his world was thus actively shaped by the burgeoning nineteenth-century culture of printing and mass media. Similarly, Harris was able to gain new insights into the photographic archive of John Henry Parker in researching and writing "Imagining a Nation's Capital." Citing a particular image from the corpus, she writes:

> Ordinarily, a photograph like *Emporium (Rome, Italy) Excavations* would not prompt us to think about the history of medieval Rome, nor would it encourage us to consider different national perspectives of this history nearly a millennium later. . . . Yet, when viewed as visual data in a system of images that have been digitally charted onto a period map of Rome, this photograph reveals a far bigger picture that situates Parker's archive within the archaeological, photographic, political, social, and national histories. [8]

These are just two examples of the many discoveries made as a result of the research conducted for the DHAH series.

The scholarly achievements of our authors, as well as the DHAH series itself, also have been recognized by our peers. The Nineteenth Century Studies Association awarded its 2015 Article Prize to Elizabeth Buhe for her 2014 DHAH article, "Sculpted Glyphs: Egypt and the Musée Charles X." The first article in the series, "Local/Global: Mapping Nineteenth-Century London's Art Market," by Pamela Fletcher and Anne Helmreich, was awarded the 2015 ARIAH Prize for Online Publication by the Association of Research Institutes in Art History. Many of the authors of these articles share our sense of accomplishment in the project as a whole. Asked to reflect on her experiences writing her DHAH article, Helmreich wrote that she and Fletcher "are extraordinarily proud of [the article]" and she said she was "particularly pleased that we included the 'lessons learned' section and also developed a methodology to acknowledge the multiple contributors to our project." Fletcher told us that, for her, "publishing in that series was a really a game changer." In response to the same question, Kathryn Barush commented that she and O'Malley "were able to enhance the article in many ways that wouldn't be possible via print[, such as by] adding contemporary music, an interactive map, [and] comparative images."

We feel that the DHAH series was a success, and yet, perhaps unavoidably, we also feel we could have done more. We had hoped to foster even more groundbreaking innovation in the format of these articles, in particular by integrating the technological components with the art-historical analyses to a greater degree. Regardless, we have learned an incredible amount in producing these articles. As we predicted, it would simply not have been possible to gain this knowledge without the trial and error that were part of the process.

Art History and the Digital Humanities
Tackling the challenges of managing both the research and publication phases of the DHAH articles taught us a great deal about both the conceptual and practical aspects of digital humanities research and digital publication. Producing the DHAH series also gave us insight into the challenges that face the field of art history in integrating digital humanities scholarship and digital publication.

We would argue that the adoption of what we call "the digital humanities" or "digital art history" should focus less on the "digital," or on this or that tool, and more on research questions, methodologies, and standards of practice. What we call "digital art history" is simply art history, except that its practitioners employ computing tools for research and publication in an informed and critical way. The emphasis should be not on forging or naming a new field but on ways to do what we *already* do in better, more effective ways. Accordingly, we should think about how we might use computing tools as well as about how the techniques and practices of library and information science—which rely heavily on digital practices—can expand and enhance art-historical practice. Of course, art historians already rely heavily on the discipline of information science in conducting their research; we collaborate regularly with those who maintain library and museum collections and archives, and we depend on their expertise to find and retrieve books, archival materials, visual resources, and collection information in both digital and analog forms. What discourses around the digital humanities have exposed, and even highlighted, though, is the ever-greater need for art historians themselves to acquire some of these skills. This is because while art historians' training was designed with the goal of helping them identify and gain access to rare or hard-to-find sources in a research landscape of information scarcity, we have for the past twenty-some years been faced instead with a research landscape of information superabundance.[9] This surfeit affects not only the objects of our research—through, for example, the increasing availability of archival materials made possible by digitization—but also our own work products: we ourselves produce more information, from documents and images to slide decks and emails, than in previous eras.

As a result of this information explosion, art historians have a growing potential to act as archivists of their own personal repositories, and we would argue that every art historian would benefit from acquiring skills related to library and information sciences. Such skills are helpful for organizing one's own resources, and they also facilitate a base-level conceptual and technical expertise that enables art historians to leverage computing tools and techniques in a more informed and therefore more effective way. For example, learning about metadata creation and maintenance in order to manage personal photos of primary source documents would provide immediate benefit to the individual researcher. In addition, facility with metadata would be the first step in learning how to build relational databases, to map collection information, or to analyze social networks, among other modes of analysis. Indeed, we would argue that it will be much easier for art historians to learn social network or GIS methodologies if they have learned about metadata first, since these and whatever other digital humanities methods they might employ will require some level of metadata knowledge and training. Mastering the basics of information science would also allow art historians to have more-informed conversations with application programmers and software engineers, as well as librarians and archivists with whom they are likely to collaborate on such projects.

We believe that knowledge of and familiarity with information science would help art historians to master digital humanities research techniques and tools. Similarly, for those who are interested in online publishing, learning basic website development would help them take advantage of the possibilities of online presentation formats. Asked what she might tell others interested in publishing digitally, DHAH author Kathryn Barush responded that she feels it is critical that authors "have a sense of the possibilities available in the online format, which is inherently different from print (in terms of searchability, high-res imagery, mapping features,

audio/video capabilities, and so forth), so as to harness them to their fullest capacity." Even minimal knowledge of website development would allow prospective digital publication authors to be aware of such possibilities and to better leverage them in working with web designers, developers, and publication programmers.

We should approach the digital humanities as a process of integrating the techniques, tools, and methods of information and computer science into our discipline at all levels. In doing so, it is important that we build on those elements that are already a part of how we practice art history. In discussions of the digital humanities and art history, there can be a tendency to treat digital technologies and approaches as completely new and unprecedented, and therefore nearly or completely foreign. To the contrary, art historians have been engaged in practices we would consider digital in nature for a long time.[10] Moreover, many of the underlying concepts of digital humanities are already built into our discipline in ways that have become so second nature as to become almost invisible to us. The Getty Vocabulary Program, for example, has been confronting issues related to art-historical information management since its creation in the 1980s. As a result, the Getty Vocabularies have driven art-historical scholarship by facilitating art historians' research for decades, whether we have realized it or not.

Those who call for art historians to emulate hard scientists by sharing our "raw" datasets perhaps forget that we already do this in an analog format. By footnoting our primary and secondary sources or by publishing bibliographies, appendices, and the like, we allow other researchers to test our hypotheses and draw their own conclusions from the data we used to draw ours. Of course, it is also true that digital technologies result in new kinds of datasets and present new opportunities for sharing research data, and the hard sciences certainly offer models that the humanities would be wise to emulate. However, while we should push ourselves forward, we should at the same time be wary of ignoring our existing competencies. In doing so, we run the risk of abandoning or watering down the standards of practice our field has developed and that, we would argue, remain useful and valuable.

We hope to continue using the DHAH articles to think through the role of the "digital" to the point that we no longer regard it as an "add-on" component but instead as integral to art historians' hermeneutic work. To achieve this goal, we feel it is prudent to be selective about when and how to enlist a digital humanities method or use a digital humanities tool to produce scholarship. The idea of, for example, using computer vision to analyze the precise colors in a series of paintings is exciting, however, one must ask of this or any similar undertaking: What is the art-historical argument to be made, and how will the data gathered be relevant? What knowledge is produced by using a particular digital method or tool? Are computing tools or methods really necessary to produce the knowledge or make the argument? We certainly do not want to discourage experimentation in the field, and indeed pure exploration is at times necessary in helping us understand the potential of a particular technology or tool; yet, digital art history works best when it advances *interpretation*. Accordingly, we want to develop and feature scholarship in *NCAW* that integrates digital methods and components with their interpretive articles as closely as possible, rather than merely creating visualizations of raw data. Moreover, we want the integration of traditional and digital methodologies to shape not only authors' research but also both the content and the formats of their articles. As our experience has shown, such close integration can be

difficult and will, we think, take time to become standard in the field. Once art historians learn to think in terms of information and data, and become familiar with the potentials and limitations of managing, ordering, visualizing, and manipulating datasets, we predict that the scholarship they produce will be even more meaningful and valuable.

One element that might be especially helpful in further developing the interpretive potential of digital humanities is the project narrative. These texts, which DHAH authors publish as part of their articles, contain important contextual information that could significantly enhance their colleagues' digital projects in helping them to, for example, avoid common pitfalls or gain insight into an otherwise-obscure production process. As previously mentioned, the project narrative also enables tenure committees to have a clearer view of the division of labor among co-authors. At the same time, we recognize the flip side of that same coin: that project narratives can sometimes begin to read as step-by-step lists of tasks performed. We would like increasingly to use the project narrative as an outlet for authors to share methodological justifications and demonstrate how praxis can shift into, or intersect with, theory. Moreover, in using the project narrative in this way, we would challenge practitioners to think critically about its functionality from a methodology standpoint: Can its conceptual value be subsumed by or integrated into the art-historical argument? Does "theory" have to stand apart from the scholarly argument in digital humanities art history, or can interpretation "perform" its own theoretical justification, as the best of standard print publications are expected to do? We pose these questions because, while we cannot claim to know the answers, we feel our experiences in producing the DHAH article series has prompted us to ask them, not only rhetorically but directly to the practitioners of art history.

The Future of Digital Publishing and Art History
The landscape of digital humanities and digital publishing has changed significantly since 2011, when the DHAH series was first proposed. Most significantly, subsequent years have seen the introduction of new online journals, including, in 2015, the Association of Historians of American Art's *Panorama* and the exceedingly beautiful *British Art Studies*, published by the Paul Mellon Centre and the Yale Center for British Art. The Mellon Foundation has continued to support such efforts through its Electronic Publishing grant program, and the Getty Foundation has done the same through its Online Scholarly Catalogue Initiative.[11] The digital publishing field has also been significantly influenced by recent discussions concerning copyright and fair use that have resulted in, for example, the College Art Association's "Code of Best Practices in Fair Use for the Visual Arts" as well as institutions such as Yale University embracing the principles of open data and open access.[12] Such changes are encouraging, and yet in other ways, we are still faced with many familiar challenges in digital publishing in 2016. The economic pressures on the publishing industry, for example, have certainly not lessened. And with regard to *NCAW*, we continue to have difficulty identifying authors and articles for our DHAH series.

Despite these and other difficulties, *NCAW* is committed to making further progress in the realm of digital publishing and digital humanities. The journal's editors are interested in publishing more DHAH articles, while also hoping that more conventional articles integrate, for example, dynamic presentation formats (panoramic or 360-degree images, videos, interactive maps, etc.). We are delighted that *NCAW* will publish in 2016 a special summer issue, guest-edited by Martina Droth and Michael Hatt, that will have a number of digital

components that, we expect, will powerfully enhance their corresponding articles. These include videos of 3-D scans of Hiram Powers's sculpture *The Greek Slave*, sound recordings, an interactive timeline, and virtual stereoscopic images. We continue to invite authors with ideas for digital articles to contact us. Meanwhile, we are looking for additional financial resources to maintain and expand our DHAH initiative; among the many things we have learned from our experience with the DHAH series is that most authors need some funding, be it for consultants, to cover the cost of large numbers of images, or to pay student workers for data input.

We also hope to continue sharing what we have learned in producing the first six DHAH articles. In the autumn of 2016, we will host a Digital Publishing Workshop that will help prospective authors work through the challenges and potentials of digital publishing and/or the digital humanities. We will connect these authors with *NCAW* authors and editors who have published in our DHAH series, as well as other publishers of online journals. We also hope to assess the current state of digital publishing through hosting a public program consisting of presentations by and discussions with leaders in the field. With both programs, our goal is to not only share what we have learned so far in producing the DHAH series but also to learn from our colleagues and from authors who may contribute to the series in the future.

We will close by thanking all of those who contributed to *Nineteenth-Century Art Worldwide*'s DHAH series. Web developer Allan McLeod, who supported all six articles and served as the lead web developer on the last two, was invaluable to the successful release of all the articles. Isabel Taube was likewise instrumental in the production of the DHAH series; we literally could not have done it without her. Editors Robert Adler, Lisa Wainwright, and Lisa K. Marietta are to be commended for their patience, flexibility, and tolerance for ambiguity. Finally, the DHAH series authors are similarly praised for their patience and flexibility, and for taking part in a workflow that was evolving and, in the early stages, untested. We thank these authors also for their willingness to experiment and to engage with technologies and practices that might have been unfamiliar. Ultimately, we hope our entire field can learn from both the research and scholarship that resulted from their efforts.

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Elizabeth Buhe is a PhD candidate in art history at the Institute of Fine Arts, New York University, and Digital Humanities Editor at *Nineteenth-Century Art Worldwide*. Buhe authored *NCAW*'s third "Digital Humanities and Art History" article, entitled "Sculpted Glyphs: Champollion and the Musée Charles X," which was awarded the Nineteenth Century Studies Association's 2015 Article Prize. http://www.19thc-artworldwide.org/index.php/spring14/

sculpted-glyphs-an-introduction

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Notes

[1] Joomla is a free and open-source management system for producing websites. A content management system (CMS) is an application that allows developers—in this case the *NCAW* production team—to produce websites through a user-friendly graphical user interface. The production team logs in to the CMS, where they can author, edit, organize, and maintain site content via a browser-based control panel. Examples of other content management systems include WordPress and Drupal.

[2] Elizabeth Buhe, Project Narrative for "Sculpted Glyphs: Egypt and the Musée Charles X," *Nineteenth-Century Art Worldwide* 13, no. 1 (Spring 2014), http://www.19thc-artworldwide.org/index.php/spring14/sculpted-glyphs-project-narrative.

[3] Scalable Vector Graphics (SVG) is an image format that facilitates some amount of animation and interactivity, such as zooming. All major web browsers support the SVG file format.

[4] Jacqueline Marie Musacchio, Project Narrative for "Mapping the 'White, Marmorean Flock': Anne Whitney Abroad, 1867–1868," *Nineteenth-Century Art Worldwide* 13, no. 2 (Autumn 2014), http://www.19thc-artworldwide.org/index.php/autumn14/musacchio-project-narrative.

[5] The one exception was the annotated digital facsimile of Lewis Miller's sketchbook for the Spring 2013 DHAH article "'In the Park,'" which was created and is stored on *NCAW*'s servers.

[6] McClure was the lead developer for Neatline during his time at the University of Virginia Library's Scholars' Lab.

[7] Therese O'Malley, "Lewis Miller's View of American Landscape," in "'In the Park': Lewis Miller's Chronicle of American Landscape at Mid-Century," *Nineteenth-Century Art Worldwide* 12, no. 1 (Spring 2013), http://www.19thc-artworldwide.org/index.php/spring13/omalley-on-lewis-millers-view-of-american-landscape.

[8] Lindsay Harris, "Imagining a Nation's Capital in the Digital Age," in "Imagining a Nation's Capital: Rome and the John Henry Parker Photography Collection, 1864–1879," *Nineteenth-Century Art Worldwide* 14, no. 1 (Spring 2015), http://www.19thc-artworldwide.org/index.php/spring15/harris-imagining-a-nations-capital-in-the-digital-age.

[9] As historian Michael O'Malley has noted, this perception of information superabundance could be just that. Nonetheless, we now have an increased capacity to *manage* large amounts of information as well as produce and (critically) store more information. Michael O'Malley, "Attention and Information," *The Aporetic* (blog), October 6, 2010, http://theaporetic.com/?p=228.

[10] See Benjamin Zweig, "Forgotten Genealogies: Brief Reflections on the History of Digital Art History," *International Journal for Digital Art History* 1 (2015), 39–48, http://dx.doi.org/10.11588/dah.2015.1.21633.

[11] Launched in 2009, the OSCI project produced its interim report in 2012 and is due to release its final assessment of the project in 2016, as a digital publication. Mellon Foundation, "Electronic Publishing," accessed February 8, 2016, https://mellon.org/programs/scholarly-communications/electronic-publishing/; and Getty Foundation, "Online Scholarly Catalogue Initiative," accessed February 8, 2016, http://www.getty.edu/foundation/initiatives/current/osci/.

[12] College Art Association, "Fair Use," accessed February 8, 2016, http://www.collegeart.org/fair-use/; and Yale Digital Collections Center, "FAQ: Open Access to Digital Representations of Works in the Public Domain from Museum, Library, and Archive Collections at Yale University," accessed February 8, 2016, http://ydc2.yale.edu/documentation/faq-open-access-digital-representations-works-public-domain-museum-library-and-archive. For more on open data,

see Open Knowledge, "What Is Open Data?," accessed February 8, 2016, http://opendatahandbook.org/guide/en/what-is-open-data/.