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## Image as Evidence: A Citation Analysis of Visual Resources in American History Scholarship, 2010–2014

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### Image as Evidence:

# A Citation Analysis of Visual Resources in American History Scholarship, 2010–2014

Jillian Ewalt, California State University, Sacramento

**Abstract**—The author examines the use of visual resources in American history scholarship over a five-year period. The article reports on a citation analysis of 554 images published in two top American history journals from 2010 through 2014. The data collected in this study documents the extent to which images were used in history research and the types of libraries and archival repositories from which historians accessed images. Based on the study data, the article explores characteristics of frequently cited libraries and archival repositories, the capacity in which images function as historical evidence, and implications for libraries based on the findings.

#### INTRODUCTION

Over the past decade, there has been increased dialogue about the capacity in which historians are using images in documenting and reporting history. Part of this conversation suggests that, as the practice and scope of historical research has evolved, so has the recognition of visual resources as historical evidence. Based on these perceptions, to what degree have historians used visual resources in recent scholarly communication? Also, to what extent have libraries and archives served this information need?

The author aims to further the conversation by reporting and discussing data on historians' use of images in recent scholarly communication. Using citation analysis, data was collected on the types of visual resources cited by historians and, for citations to libraries and archives, the type of repository from which the image was accessed.

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- I. Craig Horner, Katy Layton-Jones and David Stewart, "Editorial: History," Visual Resources: An International Journal of Documentation 24, no. 2 (February 2008): 101–2.
- $2.\ Anna\ Pegler-Gordon,\ ``Seeing\ Images\ in\ History,"\ American\ Historical\ Association,\ http://www.historians.org/publications-and-directories/perspectives-on-history/february-2006/seeing-images-in-history.$

The sampling frame included images published in two American history journals from 2010 through 2014. Based on the findings, the article discusses the extent to which historians have included visual resources in recent articles and the types of repositories from which historians accessed images. To deepen the exploration of images as historical evidence, contextual frameworks from the visual resources literature are discussed, using examples from the present study.

#### LITERATURE REVIEW

In archival studies literature, the documentary value of pictorial collections was formally recognized as early as 1979.<sup>3</sup> In a broader academic context, however, the relevance and utility of visual resources in academic history research has been contested. For example, in her 1995 article, Katharine Martinez related a tradition of practice in which "few historians consult images in their research, and when images appear in scholarly history publications they often play a secondary role to textual research materials." She also noted that historical practice has traditionally emphasized two principles: a "careful analysis of written records" and a "skeptical attitude towards images." <sup>5</sup>

More recently, scholars from various branches of history and related fields have acknowledged the efficacy of visual resources in scholarship. In 2001, Peter Burke evaluated approaches to iconography and iconology, providing a foundation for his discussion on visual resources as historical evidence. Burke covered ways that images "reveal or imply ideas, attitudes and mentalities in different periods" as well as the "uses of images in the process of the reconstruction of the material culture of the past." For example, he asserted that images "offer access to aspects of the past that other sources do not reach." He added that, rather than providing direct access to the social world, images provide access to contemporary views and interpretations, such as male views of women and civilian views of war.<sup>8</sup> Visual and print culture scholar David Morgan also discussed the evidential value of images. He predicted that "scholars will investigate not only the image itself but also its role in narrative, perception, scientific and intellectual classification, and all manner of ritual practices, such as ceremonies, giftgiving, commerce, memorialization, migration, and display—thereby understanding the image as part of the social construction of reality."9 Michael Lesy addressed the need for increased visual literacy in the history community and asserted that images, especially in the practice of social and cultural history, can "reveal more about their

<sup>3.</sup> Hugh Taylor, "Documentary Art and the Role of the Archivist," *The American Archivist* 42, no. 4 (October 1979): 417–28.

<sup>4.</sup> Katharine Martinez, "Imaging the Past: Historians, Visual Images and the Contested Definition of History," Visual Resources: An International Journal of Documentation II, no. I (1995): 22.

<sup>5.</sup> Ibid., 23.

<sup>6.</sup> Peter Burke, Eyewitnessing: The Uses of Images as Historical Evidence (Ithaca, NY: Cornell University Press, 2001).

<sup>7.</sup> Ibid., 81.

<sup>8.</sup> Ibid., 185.

<sup>9.</sup> David Morgan, The Sacred Gaze: Religious Visual Culture in Theory and Practice (Oakland: University of California Press, 2005): 30.

makers, first users, and audiences than such people ever intended."<sup>10</sup> In 2010, the journal *Visual Resources* published a special issue devoted to exploring visual collections as historical evidence. In that issue, Katy Layton-Jones asserted that "the use of visual material by academic historians has become not only accepted, but actively encouraged."<sup>11</sup>

In the present study, citation analysis is applied to explore and document the use of images in history research, focusing on the role of libraries and archival repositories. Many previous studies have employed citation analysis as a means to examine contributions of library and archival resources in history scholarship. The earliest example in archival studies literature is Frederic Miller's 1986 article on citation patterns in social history research. He documented and discussed the number of citations to archival materials, the extent to which historians visited repositories, and subjects and date ranges of the collections used. Miller suggested that although usage patterns vary, social historians remain reliant upon archival materials for their research.<sup>12</sup> Chris Burns used citation analysis to document historians' use of archives over a four-year period. He discussed the importance of gathering data that may help guide acquisition policies, arrangement and description priorities, and instruction practices.<sup>13</sup> In a previous study, the author, along with co-author Colleen Hoelscher, used citation analysis to evaluate the information-seeking behaviors of Catholic historians in archives. Based on the findings, the authors suggested strategies for improving collection development and descriptive practices for religious archival collections. 14 Using both surveys and citation analysis, Margaret Stieg Dalton and Laurie Charnigo examined historians' use of information sources and what they consider to be important. Among their findings, they noted that sources used most frequently by historians were archives, manuscripts, and special collections. <sup>15</sup> Diane Beattie also used surveys and citation analysis to study the use of archives by researchers in the field of women's history. She suggested that studying citation data would allow archivists and librarians to respond more effectively to the needs of a particular user group. 16 These studies have all made contributions to the literature on scholarly communication and the impact of library and archival resources. None of them, however, specifically addresses the use of images.

<sup>10.</sup> Michael Lesy, "Visual Literacy," Journal of American History 94, no 1. (June 2007): 144.

II. Katy Layton-Jones, "Visual Quotations: Referencing Visual Sources as Historical Evidence," Visual Resources: An International Journal of Documentation 24, no. 2 (February 2008): 189.

<sup>12.</sup> Fredric Miller, "Use, Appraisal, and Research: A Case Study of Social History," *The American Archivist* 49, no. 4 (Fall 1986): 371–92.

<sup>13.</sup> Chris Burns, "Use of Archives and Manuscripts by Historians: A Citation Analysis of Four History Journals for the Period 2006–2010" (research forum poster, Society of American Archivists Annual Meeting, San Diego, CA, August 6–11. 2012).

<sup>14.</sup> Jillian Slater and Colleen Mahoney Hoelscher, "Use of Archives by Catholic Historians, 2010–2012: A Citation Study," *Archival Issues* 36, no. 1 (2014): 43–56.

<sup>15.</sup> Margaret Stieg Dalton and Laurie Charnigo, "Historians and Their Information Sources," College and Research Libraries 65, no. 5 (2004): 400–25.

<sup>16.</sup> Diane L. Beattie, "An Archival User Study: Researchers in the Field of Women's History," Archivaria 29 (Winter 1989–90): 33–50.

One recent bibliometric study did provide perspectives on the use of visual resources in the context of libraries and archives. In 2013, Valerie Harris and Peter Hepburn examined citations to images in history journals, focusing on the impact of digital collections.<sup>17</sup> The study was based on the hypothesis that historians' use of images would increase with the growing availability of digital images, documenting changes in image citations over a ten-year period. Their findings indicated that, despite the increased availability of online images, there was no apparent increase in the inclusion of images in history journals.<sup>18</sup>

The literature mentioned above provides diverse perspectives on use, perceptions, and potential for visual resources in academic history research. Additionally, the literature suggests that citation analysis has solidified its place as a reliable data collection method. However, it has not been used extensively to address the role of visual resources. Only Harris and Hepburn's bibliometric study reported on the use of image collections and scholarly communication. <sup>19</sup> None of the studies mentioned above addressed the types of visual resources being cited or the types of libraries and archival repositories that are providing access to images. While the visual studies and history literature have occasionally addressed the treatment of images as historical evidence, no quantitative studies have yet been conducted in this area.

#### **METHODOLOGY**

Citation analysis typically involves analyzing citations from published works and recording the details to determine what materials are being consulted.<sup>20</sup> A citation study may include an analysis of materials by type, frequency, or other factors.<sup>21</sup> In the present study, the citation for each published image was evaluated based on two attributes: the source of each image and, for citations to images from libraries and archives, the type of repository where the image was accessed. The data was recorded in spreadsheets, which were then used to calculate totals and percentages.

#### JOURNAL SELECTION AND SAMPLING FRAME

Two top refereed journals in the field of American history were selected for this study: American Historical Review and Journal of American History. The journals were chosen based on scope, rank, impact factor, reputation, and recommendations from subject librarians.

*American Historical Review* has been published since 1895 and is the official publication of the American Historical Association.<sup>22</sup> The journal is currently published

<sup>17.</sup> Valerie Harris and Peter Hepburn, "Trends in Image Use by Historians and the Implications for Librarians and Archivists," College and Research Libraries 74, no. 3 (May 2013): 272–87.

<sup>18.</sup> Ibid., 283-84.

<sup>19.</sup> Ibid.

<sup>20.</sup> Kristin Hoffmann and Lisa Doucette, "A Review of Citation Analysis Methodologies for Collection Management," College and Research Libraries 73, no. 4 (2012): 321–35.

<sup>21.</sup> Ibid

<sup>22. &</sup>quot;About the American Historical Review," American Historical Review, http://www.historians.org/publications-and-directories/american-historical-review/about-the-american-historical-review.

by Oxford University Press. In 2014 it was ranked number one in the history category by Thomson Reuters *InCites Journal Citation Reports*.<sup>23</sup> Its average journal impact factor for the years 2010 through 2014 was 98.610 percent. The *American Historical Review* seeks submissions on a broad range of historical content that "collectively addresses the spatial, temporal, and thematic dimensions of contemporary historical inquiry."<sup>24</sup> The journal encourages submissions on current and emerging topics in cultural history, historiography, the history of race and gender, and transnational and global history as well as "fresh approaches to more traditional sorts of scholarship, such as political, diplomatic, military, and economic history."<sup>25</sup>

The Journal of American History is the official journal of the Organization of American Historians and has been in circulation (initially as the Mississippi Valley Historical Review) since 1914. The journal is currently published by Oxford University Press. In 2014 it was ranked number thirteen in the history category by Thomson Reuters InCites Journal Citation Reports. The Journal of American History encourages submissions of articles on all topics related to American history and is inclusive of articles that situate American history within a global context. A recent call for papers, for example, included the African American freedom movement, focusing on the history, meaning, and legacies of the civil rights struggles of the 1950s and 1960s. Based on the criteria above, these two journals are representative of current scholarly communication in the field of American history and provide a reliable sampling frame for the purpose of this study.

The sampling frame included 211 feature articles published in the *Journal of American History* (JAH) and *American Historical Review* (AHR) from 2010 through 2014. For articles published in the *American Historical Review*, the "AHR Forum" section was also included. All articles from special or themed issues were included. For example, the 2012 JAH included twenty-three articles as part of a special issue on "Oil in American History." Data collection excluded book reviews, opinion pieces, and other occasional features like "AHR Roundtables" and "AHR Conversations."

#### CITATION COUNTING CRITERIA

This study counted only those citations that were accompanied by a printed image. The study did not count any data located in footnotes or endnotes. Two sets of data were gathered. The first data set recorded the source of the image, using the following categories: library or archival repository, publication, commercial vendor, individual creator, information graphic, no source, and other. The categories were developed based on a preliminary random sampling of image citations in the selected journals. For pur-

<sup>23.</sup> Thomson Reuters, InCites Journal Citation Reports, http://about.jcr.incites.thomsonreuters.com/.

<sup>24. &</sup>quot;About the American Historical Review."

<sup>25.</sup> Ibid.

<sup>26. &</sup>quot;About," Journal of American History, http://jah.oah.org/about/.

<sup>27.</sup> Thomson Reuters InCites Journal Citation Reports.

<sup>28. &</sup>quot;About," Journal of American History.

<sup>29. &</sup>quot;Submissions," Journal of American History, http://jah.oah.org/submit/call-for-papers/.

Image Citation Source Type	Definition	
Library or Archival Repository	An organization that holds historical collections and/or materials of enduring historical value—for example, government archives, corporate archives, manuscript collections, libraries, museums, and historical societies.	
Publication	Previously published works including books, monographs, periodicals, and newspapers.	
Commercial Vendor	Commercial or stock photography vendor, typically offering museum images, stock and microstock photography, and editorial imagery.	
Individual Creator	Individual creator, usually a photographer.	
Information Graphic	Visual representation of data or information, typically including charts, graphs, maps, or other graphical representation of data.	
No source	Image citation did not indicate a source.	
Other source	Sources not fitting into any of the categories listed above.	

Figure 1. Definitions of image sources used in the study.

poses of this study and to ensure consistency during data collection, the definitions listed in Figure 1 were used.

The second data set recorded information about citations to libraries and archival repositories. Twelve categories (Figure 2) were identified based primarily on the Society of American Archivists statement on Types of Archives.<sup>30</sup> Several previous special collections surveys and citation analyses also helped inform category choice.<sup>31</sup>

#### METHODOLOGICAL CONSIDERATIONS

Many previous studies note the challenges inherent in the process of counting and analyzing citations.<sup>32</sup> Regarding published images, Layton-Jones asserted the lack of a comprehensive set of conventions for referencing visual resources in academic publications.<sup>33</sup> Moreover, the uniqueness and variety of repositories pose complexities in classifying some citations. For example, an entire religious archive might be located at another repository such as a college or university. One specific instance is the Catholic Diocese of Youngstown, Ohio, with records located at Kent State University.<sup>34</sup> In the context of the present study, a citation to the diocesan records would be classified as a college or university since they are located at Kent State University. If the records were still located at and maintained by the diocese, the citation would be categorized as a religious archive. While these types of collaborative partnerships and collection transfers are often beneficial for both organizations, this example illus-

<sup>30. &</sup>quot;Types of Archives," Society of American Archivists, http://www2.archivists.org/usingarchives/typesofarchives.

<sup>31.</sup> Jackie M. Dooley and Katherine Luce, Taking Our Pulse: The OCLC Research Survey of Special Collections and Archives (OCLC Online Computer Library Center, Inc., 2010); Burns, "Use of Archives and Manuscripts by Historians."

<sup>32.</sup> For example, see Hoffmann and Doucette, "A Review of Citation Analysis Methodologies."

<sup>33.</sup> Layton-Jones, "Visual Quotations."

<sup>34. &</sup>quot;Special Collections and Archives: Catholic Diocese of Youngstown, Ohio Records," Kent State University Library, http://www.library.kent.edu/special-collections-and-archives/catholic-diocese-youngstown-ohio-records.

Repository Type	Definition	
College or University	Archives related to an academic institution or a special collection located at a college or university.	
United States Government	Repositories relating to local, state, or national government entities.	
Foreign Government	Repositories relating to government entities outside of the United States.	
Independent Research Library	Independent research libraries that are often privately supported or based on membership, typically with a specialized collecting focus—for example, the Huntington Library, the Library Company of Philadelphia, and the Newberry Library.	
Historical Society	Organizations that seek to preserve and promote interest in the history of a region, a historical period, nongovernment organizations, or a subject—for example, collections focusing on a state or a community, which may be in charge of maintaining some governmental records.	
Museum	Repositories whose primary purpose is maintaining and exhibiting collections of art objects, artifacts, or artwork.	
Religious Archive	Repositories relating to the traditions or institutions of a major faith, denominations within a faith, or individual places of worship.	
Corporate Archive	Archival departments within a company or corporation that manage and preserve the records of that business.	
Native American or Tribal Archive	Repositories documenting the history and activities of indigenous groups in the United States.	
Foreign Library or Archive (non-governmental)	Repositories outside of the United States not owned and operated by a government body.	
Public Library	Libraries, established under state enabling laws that serve the general public in a community, district, or region.	
Other	Repositories not fitting into any of the above categories—for example, private or personal collections.	

Figure 2. Definitions of repository types used in the study.

trates a challenge in accurately capturing the content of each repository. Other similar ambiguities can complicate data classification. For example, the Massachusetts Historical Society and the New-York Historical Society are historical societies as well as members of the Independent Research Libraries Association. In this study, both would be classified as historical societies rather than independent research libraries since their primary mission is to preserve and promote interest in the history of a region, state, or community.<sup>35</sup> Despite these unavoidable complexities, every attempt was made to classify each repository as accurately as possible. Lastly, data collected in the present study did not lend itself to understanding whether or not historians accessed images physically or remotely. For example, not all citation styles require the author to cite the web address that would indicate online access. Harris and Hep-

<sup>35. &</sup>quot;Mission and Vision Statements," Massachusetts Historical Society, http://www.masshist.org/mission; "About the New-York Historical Society," New-York Historical Society, http://www.nyhistory.org/about.

Image Citation Source Type	Number of Citations Percentage of Total Image Citations		
Library or Archival Repository	279	50%	
Publication	131	24%	
Commercial Vendor	31	6%	
Individual Creator	58	10%	
Information Graphic	39	7%	
No source	10	2%	
Other source	6	1%	

Figure 3. Analysis of image citations by source type.

burn's bibliometric study also noted similar challenges.<sup>36</sup> Therefore, the present study does not attempt to distinguish between digital and physical images.

#### RESULTS

A total of 211 articles were evaluated for this study, and the citations accompanying all of the images in these articles (554) were analyzed (Figure 3).

The Repository Type table and graph (Figure 4) document citations to types of libraries and archival repositories (one category of the Image Citation Source Type in Figure 1).

#### DISCUSSION

Sixty-eight percent of articles included one or more images. This indicates that the majority of American historians are using visual resources in scholarly communication. In the total sample, historians used an average of 2.7 images per article. Out of the 68 percent of articles that included images, an average of four images were used per article. Image use increased slightly over the five-year sample by an average of 8 percent. The number of images used per article also increased marginally: historians used on average 20 percent more images per article from 2010 through 2014.

## VISUAL RESOURCES IN LIBRARIES AND ARCHIVAL REPOSITORIES

The data suggests that libraries and archival repositories are an important source for images in American history research. Half of the total citations in this study were to libraries or archival repositories, making them the most frequently used source for images. Out of the repositories cited (279 total), government repositories in the United States were the most heavily cited at 22 percent. This far-reaching category included federal institutions such as the National Archives and Records Administration and the Library of Congress (LOC), state libraries and archives, and presidential libraries. Based on observations, the most regularly cited of all US government entities in this study were the Library of Congress Prints and Photographs Division and the American

<sup>36.</sup> Harris and Hepburn, "Trends in Image Use by Historians."

Repository Type	Number of Citations	Percentage of Total Repository Citations
College or University	56	20%
United States Government	61	22%
Foreign Government	14	5%
Independent Research Library	34	12%
Historical Society	14	5%
Museum	24	9%
Religious Archive	6	2%
Corporate Archive	1	< 1%
Native American or Tribal Archive	1	< 1%
Foreign Archive (Non-governmental)	51	18%
Public Library	2	1%
Other	15	5%

Figure 4. Analysis of image citations by repository type.

Memory Project. In his 2012 citation study of digital archival collections, Donghee Sinn reported that Library of Congress digital collections "presumably made the greatest impact on historical research because they appeared in the [greatest] number of articles."37 He also noted that generality of content related to American history, uniqueness, and high quality images were among the features that may have influenced historians' use of LOC collections. Furthermore, American Memory provides online access to over nine million individual items, and the Prints and Photographs Division provides online access to over fourteen million items.<sup>38</sup>

The second most heavily cited repositories were those at colleges and universities, which made up 20 percent of the total repositories cited. Citations to these repositories included primarily special libraries or rare book and manuscript collections located at the institution, as opposed to university archives dedicated to preserving the history of the parent institution. In this study, a variety of colleges and universities were cited. However, frequently referenced repositories were typically located at a topranking college or university.<sup>39</sup> They included, for example, the Schlesinger Library on the History of Women in America at Harvard, the Beinecke Rare Book and Manuscript Library at Yale, the Rare Book and Manuscript Library at Columbia, and the Harry Ransom Center at the University of Texas. The study data suggests that image collections located at college and university repositories make significant contributions to scholarly communication in American history.

<sup>37.</sup> Donghee Sinn, "Impact of Digital Archival Collections on Historical Research," Journal of the American Society for Information Science and Technology 63, no. 8 (August 2012): 1521-37.

<sup>38. &</sup>quot;About PPOC," Library of Congress Prints and Photographs Online Catalog, http://www.loc.gov/pictures/about/.

<sup>39. &</sup>quot;National Universities Rankings," U.S. News and World Report: Education, accessed December 2, 2015, http:// colleges.usnews.rankingsandreviews.com/best-colleges/rankings/national-universities.

Despite their relatively few numbers, independent research libraries are a highly utilized source for historic images, making up 12 percent of the citations in this study. In "Taking Our Pulse: The OCLC Research Survey of Special Collections and Archives," Jackie M. Dooley and Katherine Luce noted several characteristics that may influence the extent of image access among these collections.<sup>40</sup> They stated that independent research libraries (outside of the private and public special collections included in the OCLC survey) are most likely to host a fellowship or grant program to enable on-site user visits. Additionally, some have the most comprehensive collection in their particular area of focus. The report also noted that these libraries typically have active outreach and public programming components.<sup>41</sup>

Most US government, college and university, and independent repositories share several general characteristics that may contribute to their citation frequency. These include distinguished reputation, robust and high-quality digital collections, and generality of content related to American political, cultural, and social histories. Some, such as the Schlesinger Library and several independent research libraries, hold what is perhaps the most comprehensive collection in a particular area.

#### FRAMEWORKS FOR IMAGE USE IN HISTORY SCHOLARSHIP

Quantitative data provides valuable insights into the extent to which visual resources are used in history scholarship. In this study, the data revealed the number of images that appeared in recent published history scholarship, the changes in use over the five-year sample, and the types of libraries and archives where historians accessed images. However, the polysemic nature of images calls for qualitative examinations as well. Considering both quantitative and qualitative aspects of image use can provide deeper insights into their historiographic functions. In her article "Imaging the Past: Historians, Visual Images and the Contested Definition of History," Katharine Martinez offered useful frameworks for thinking about the capacities that images serve in history research. 42 She suggested three categories of images: illustration, interpretation, and illumination. Martinez defined "illustration" (in the context of history scholarship) as "not really necessary to convey the author's interpretation." Allustrative images function primarily to add aesthetic value. She characterized "interpretive" images as "essential for the effectiveness of the authors' arguments."44 These types of images serve as evidence that may help convey key arguments in the historical narrative. Lastly, Martinez described "illuminating" images as historical evidence that can embolden the meaning of the images themselves—in effect, shaping how the reader relates to a historical narrative and perceives images associated with it.<sup>45</sup> Based on observations, the images in this study rarely fell into Martinez's illustration category; however, many

<sup>40.</sup> Dooley and Luce, Taking Our Pulse, 92-93.

<sup>41.</sup> Ibid

<sup>42.</sup> Martinez, "Imaging the Past," 27-32.

<sup>43.</sup> Ibid.

<sup>44.</sup> Ibid.

<sup>45.</sup> Ibid., 29-33.

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of them function as interpretive or illuminating images. This suggests that historians are deliberate in their selection of images and that the images used in scholarly communication operate in some capacity as historical evidence.

Several examples from this study provide a foundation for discussing the ways that images function as historical evidence. Two articles from the information graphics category in this study demonstrate ways that scholars are using interpretive images. Information graphics comprised 7 percent of the total citations, and although these graphics are not evidential in and of themselves, they do serve an important function in terms of illustrating historical data. In his 2007 article, J.D. Jordan argued for the "universal value of information graphic methodologies in the practice of history."46 Data from this study indicates that some historians are employing information visualization to help illustrate multivariate data. As Jordan suggests, historical conditions, trends, phenomena, and quantitative methods can be elucidated via statistical graphs, charts, and thematic maps. For example, one article employed line charts generated from Google Ngram to demonstrate the accelerating use of "modernity" in the English language. 47 Another article on trends in racial violence in the Postbellum South used data from the Historical American Lynching Data Collection Project and Geographic Information Systems software to create maps that conveyed the number and location of lynchings in Deep South states.<sup>48</sup> The study revealed that historians are making use of the technologies available to apply visual methodologies to represent historical data. While data visualization technologies have traditionally been in use by STEM and some social sciences disciplines, the data from this study suggests broader applications for a variety of academic fields. Several studies, including the recent article "Speak to the Eyes: The History and Practice of Information Visualization," also suggest the potential for information visualization across a range of humanities disciplines. 49 Some academic libraries are currently developing or providing data visualization services.50 Expanding access to data visualization services is a potential area for libraries to serve a growing information need.

Two articles from this study demonstrate Martinez's definition of illuminating images in historical scholarship. She suggested that illuminating images communicate synergistically; both text and images function in unison to express a historical argument.51 For example, in "Earthrise; or, The Globalization of the World Picture," Benjamin Lazier considered the history of Earth images, the Earthrise era, and philosophical

<sup>46.</sup> J.D. Jordan, "A Historiographic Analysis of Visual Texts Reviewing Information Graphic Methodologies as a Means of Historical Argument," The International Journal of the Book 4, no. 3 (March 2007): I-I4.

<sup>47.</sup> Daniel Lord Smail and Shryock Andrew, "History and the Pre," The American Historical Review 118, no. 3 (2013):

<sup>48.</sup> Michael Ayers Trotti, "What Counts: Trends in Racial Violence in the Postbellum South," Journal of American History 100, no. 2 (2013): 375-400.

<sup>49.</sup> Jefferson Bailey and Lily Pregill, "Speak to the Eyes: The History and Practice of Information Visualization," Art Documentation 33, no. 2 (Fall 2014): 168-91.

<sup>50.</sup> For example, see "Data Visualization," Duke University Libraries, http://library.duke.edu/data/data-visualization; "Data Visualization," University of Michigan Library, http://www.lib.umich.edu/data-visualization.

<sup>51.</sup> Martinez, "Imaging the Past," 34.

responses to the earliest images of Earth from space.<sup>52</sup> In his article, fifteen images, including photographs, ephemera, and an illustration, provide core contextualization and work in conjunction with the text to explicate the narrative. In this example, images function adjacent to text, working in unison to communicate themes central to the historical narrative, while at the same time shaping how the reader relates to the images. Another example, and the most image-heavy article in this study, was a discussion on the development of the historiography and memorialization of the Jewish Holocaust.<sup>53</sup> The article included twenty-nine images. David Morgan specifically suggested the potential for visual research in the study of memorialization;<sup>54</sup> as he pointed out, the image functions as a critical evidentiary component for documenting and discussing the social construction of reality. In both of these examples, the historian utilized visual resources and text that function jointly as evidence to form the basis of a historical narrative.

#### CONCLUSION

This article considered both quantitative and qualitative aspects of the role images play in American history scholarship. Images are used by the majority of historians in current scholarly communication and, when used, are most often accessed via libraries and archives. The images, rather than providing auxiliary illustration, tend to function in varying capacities as historical evidence. In terms of library and archival practice, these findings support improving access to and awareness of visual and pictorial collections. The findings also reinforce previous recommendations from the fields of both librarianship and history: that critical visual literacy is a fundamental proficiency for most historians and that libraries can help support visual literacy acquisition by incorporating it in instruction.<sup>55</sup>

<sup>52.</sup> Benjamin Lazier, "Earthrise; or, The Globalization of the World Picture," *American Historical Review* 116, no. 3 (June 2011): 602–30.

<sup>53.</sup> Harold Marcuse, "Holocaust Memorials: The Emergence of a Genre," American Historical Review 115, no. 1 (February 2010): 53–89.

<sup>54.</sup> David Morgan, Sacred Gaze, 30.

<sup>55.</sup> See Harris and Hepburn, "Trends in Image Use by Historians," 281–84; Martinez, "Image Research and Use in the Humanities," 10; and Lesy, "Visual Literacy," 143–46.