Digitizing Knowledge: Exploring Archival Collections in Virtual Spaces

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Introduction

Our interdisciplinary project aims at answering questions about the proliferation of digital archive collections and the potential impact this has on both research and teaching. In particular, we are interested in the different research experiences that scholars have when they use a digital archive as opposed to (or in conjunction with) a physical archival site. Should a digital archive attempt to mimic the research experience of a physical archive? And if so, what is gained or lost by the process of digitizing what scholars typically describe as a tactile experience? If the archive does change, and does not mimic how collections are traditionally arranged, in what ways does a virtual experience force researchers and teachers to re-conceptualize their practices? For instance, the American Social History Project, under a grant from the National Endowment for the Humanities, recently launched a new initiative entitled: "Picturing United States History: An Online Resource for Teaching with Visual Evidence" under the aegis that "visual materials are vital to understanding the American past." Our project will analyze the efficacy of this approach, as well as explore other examples of virtual collections. In another virtual space, the Center for Digital Research in the Humanities freely distributes materials and critical responses from The Walt Whitman Archive, and offers a literary example of the ways that knowledge has gone digital. Just as these virtual spaces represent ample amounts of collaboration, our project relies on diverse disciplinary methodologies through the questions we ask and the expectations we bring to research and teaching.

Project Overview

Collaboration is the hallmark of our proposed project. Each of group-member is situated in a particular field of knowledge production, and therefore, our project's methodology takes into account the different disciplinary types of questions that would be useful to ask about digital archives to a wide-range of archive users. As sociologist Pierre Bourdieu has theorized, the interview aspect of our project resembles a reflexive sociological approach to research because we recognize that as much as we are observers when gathering data we are also participants. Further, we welcome the opportunity to learn more about "rich media" from the technology specialists who work in affiliation with GROCS participants at The Digital Media Tools Lab. This project intends to utilize different emergent technologies to theorize and design an interface that addresses the concerns of multiple users of digital archives. In particular, our project will focus on a collection titled: "The United States and its Territories 1870-1925: The Age of Imperialism." This is a digital archive of photographs organized by the Bentley Historical Library's Image Bank at the University of Michigan. We have selected this particular archive because it represents the benefits of using virtual space

to bring together visual materials from multiple collections. The archive consists of 2,100 digitized images originally found in over 100 boxes of materials from 8 different physical archives. Re-organizing information in this manner allows researchers to locate historical photographs of the Philippines via one website as an alternative to sorting through a myriad of documents located in various physical sites. In addition to increasing access and opportunities for research, digitizing knowledge may also contribute to a loss of "aura" experienced by the researcher who had previously gained this intangible feeling through the traditional archive experience; a process that required scholars to personally handle materials and sort through disparate images on their own. Our project begins by asking: what is gained and what is lost in the translation when materials are digitized from traditional archive sites and re-located in a virtual archive space?

Objectives

We intend to explore the relationship between digital archives and the various people who use these as resources, including archivists, teachers, researchers, students, and the general public. The work we will pursue as a GROCS funded team will include the following:

1. To record and measure what is lost in the translation to a digital archive.

This is not a question of representation, such as, what is lost technologically, but rather focuses on what is lost experientially for individual researchers. How to describe types of loss necessitates asking a number of different questions about the archival experience, such as:

- What does it feel like to touch a document that is over 100 years old? Does this sensation translate into the researchers' historical interpretations or findings?
- How does the practice of traveling and immersing oneself in unfamiliar local or international archival sites contribute to deepening the research experience?
- Do the demands of new technologies and the skills required to navigate digital images in virtual spaces contribute to a "loss of confidence" for seasoned researchers accustomed to traditional archival practices?
- 2. To consider the technological environment of the digital archive in comparison with the physical archive to analyze how current technologies reflect or perpetuate the projected loss and potential gains of digitizing visual material.

Certain questions we ask our sources will result in feedback on the transition from the physical to the virtual, so that we can understand the current experience of the digital archive, and potentially propose alternate or more expansive solutions.

First, wayfinding:

- What kind of way-finding experience does a user have in a physical archive, and what does one desire or miss in moving through a digital archive?
- What navigational decisions might the design of a digital archive make for the user, either for the user's benefit or against her will?
- Is a virtual space a notion that, in and of itself, no longer tells users how exactly to navigate it?
- What of the physical, "on the ground" experience of an archive does a user find rewarding or frustrating, and what is the analogous experience in a digital environment?

- How much control do users have in physical archives in terms of physical movement or access to information and how does that change in the virtual environment?
- Does an interface that perhaps allows a user to start and move anywhere then locate the user at an unexpected destination?
- How can this interface be designed to enable users to feel empowered by their journey, rather than confused or disoriented?
- On the other hand, in what ways might confusion, mystery, or even the unexpected, actually be useful when an interface accidentally surprises users?

Second, analyzing the digitization of archives and the impact of this process:

Our team considers the process that archivists use to digitize materials (in our case, photographs) as important as the end result (images on a screen) for our research. As an archivist seeks to understand the digitization process for their own practical and professional reasons, so too might visual culture scholars want to consider that the final digitized products they see are not un-mediated due to the decision-making process that any given archivist must undertake as they work. Our research will analyze and narrate the digitization process, in order to ask:

- How do we capture the process of translation that takes place when tactile images are turned into digital representations, and perhaps discover what gets lost in translation?
- How do we convey this type of information to users, so that individuals doing visual culture research can take into account how the process of digitization itself may relate to their findings or even influence their theoretical premises?

Third, considering the role of technology in relation to our design ideas and research findings:

We hope to conclude this project by re-imagining how this particular archive would be redesigned and re-presented to address some of the concerns of our users and our own theoretical premises. Therefore, we will ask:

- How can we best evaluate which technological tools that are currently available would be most useful in responding to the concerns and interests of the different audiences who would utilize a digital archive?
- Does the format of current archive interfaces meet the needs of our diverse array of users?
- How does analyzing the current interface address our theoretical questions?

Process

In order to accomplish the objectives of our project we will conduct interviews, presentations of our project's primary questions, and feedback sessions to various academic researchers as well academic communities engaged with digital archives. Our project begins from the premise that there are various ways in which individuals interact with archives. In addition to considering the effects of digitizing knowledge on researchers, we are interested in the various layers of thought that go into composing digital archives including the perspectives of librarians who select and categorize information and the web designers who make choices about how to present information visually for users.

Our project is an ongoing investigation into the effects of digitizing archives for the communities that both produce and utilize archives. Over the course of the term we will do the following:

1. Archive Analysis

We will conduct analysis of current web-based archival collections to compare and contrast with the Bentley Image Bank interface. The Web 2.0 environment has introduced multiple possibilities for uploading accessing images online. Some institutions even went outside their official and traditional sites to make their image collections more available to broader audiences. One example is the historical photographs of the Otis Archives Collection at the National Museum of Health and Medicine. The Otis images can now be browsed and downloaded at the popular photo-sharing website, flickr.com. Images are becoming more and more available outside official and institutional archival repositories that traditionally lend visual artifacts certain assurances of authenticity. How does expanded virtual accessibility affect our notions of truthfulness, quality and value of images? We endeavor to explore the new ways of transmitting and interacting with images, and the theoretical challenges that they pose.

2. Individual Interviews

We will conduct interviews with scholars from various disciplines that engage archives as integral to their academic work. This includes scholars from: the School of Information, School of Art and Design, and the Departments of History, Art History and American Culture. We will also be making contact with archivists at the various library institutions within the university.

Sample Interview Questions for Historians and Visual Culture Scholars can be found in Appendix A.

3. Presentations and Discussions at Interdisciplinary Workshops

We have the opportunity to present our project's primary questions and goals to the Visual Culture Workshop in order to illicit feedback from a community of students and professors interested in the study of images and the preservation of historical photographs. The Rackham Graduate School under the aegis of Rackham Interdisciplinary Initiatives sponsors the VCW. As a group of graduate students and faculty interested in the study of visual culture, the VCW meets regularly to discuss new scholarly work, workshop dissertation chapters, project drafts, and other writing. They "aim to create a context for those of us in various disciplines who'd like to think more intensively about the place of images and visuality in our own work and raise questions about models and methods for doing so." If our GROCS project is accepted, the VCW has enthusiastically agreed to allow us to present our research questions and findings in an interactive session on February 6, 2009.

More information regarding the goals and projects of the Visual Culture Workshop is available online at: webservices.itcs.umich.edu/drupal/vcw/.

Another venue to present our targets, objectives and observations is the Rackhamsponsored interdisciplinary workshop at the School of Information called Archives and Collective Memory. This discussion group, composed of faculty and graduate students pursuing archival studies at Michigan, meets monthly. This will be an excellent opportunity for us to be able to consult and discuss with academic archivists our design questions and proposed actions, plans and ideas.

More information regarding the Archives and Collective Memory workshop is available online at: umich.edu/~ricpunz/acm/Welcome.html.

4. Prototype Development

After an examination of user behavior and preferences, our particular archive, and the literature we have and will discover over the next few months, we will work in consultation with advisors to learn what technologies might be useful for our final project. Our hope is to utilize our group's skill-sets as well avail ourselves of the rich resources of the GROCS lab and individuals connected to GROCS, our various schools, and the Duderstadt Center. While unlimited time and resources would allow us design a full prototype of a digital archive, we strive to keep this project at a manageable size. We expect at this point that our prototype will not be a full redesign, but a more feasibly sized development that speaks to the major themes that emerge through our research.

Proposed Timeline

We propose the following timeline to reflect for our project to follow as of now. Though the activities will vary from month to month, we plan to meet as a group regularly, beginning in early December.

December: Defining what the current spectrum is for understanding the world of digital archives across different spaces (e.g. libraries, universities, government, user-built and defined, ranging from sites like Flickr to The Library of Congress). Initiate contact with relevant technology sources and specialists.

January: Establish and develop relationships with archivists at the Bentley Historical Library and other libraries across the University of Michigan Campus. Formulate and fine-tune interview questions, and schedule interviews with faculty members in our fields, along with librarians, current students of archives, and designers. Be sure to maintain consistent communication with GROCS technology experts about our research goals and a viable WRAP.

February: First week, Visual Culture Workshop presentation and feedback session. Continue interviews and research regarding the process of digitization and also the different experiences of using digital archives versus traditional archives. Begin working on prototype interface based on initial research findings.

March: Finish interviews and other research. Work with different technologies to develop possible interface.

April: Work on finishing WRAP and arranging for community engagement presentation and celebration!

Collaboration

This project began as a brainstorm about conducting archival research in a purely virtual realm. From there we explored what could be gained by working out questions concerning the process by which images are "turned digital." Given our diverse research experiences and scholarly interests our team recognized that through collaboration we could gain more

in-depth insights into our initial questions, and also productively speculate about possible end-products that would have the potential to speak to a wide-range of audiences. Each team member's unique perspective and range of technological skill also suggested the importance and efficacy of collaboration to accomplish concrete goals that are inspired by abstract questions and theories.

Given that our team members represent three distinct graduate schools at the University of Michigan (LS&A, The School of Information, and Art and Design) we are uniquely positioned to conduct both interdisciplinary and trans-disciplinary research where we not only collaborate as a team of four but also can encourage diverse community participation. The two workshops that we will present at are specific examples of how our project enhances and encourages collaboration in other on-going projects and pursuits related to digital archives and visuality.

GROCS Team Member Biographies

RICARDO L. PUNZALAN is a third-year Ph.D. student at the School of Information (SI). His areas of interest include image archives, visual representation of leprosy and the body, and collective memory. He is also in two graduate certificate programs: 1) Science, Technology and Society (STS), and 2) Museum Studies. His research focuses on the role of visual archives in representing, remembering and understanding leprosy, its relationship with the formation and propagation of stigma and its context within the wider discourse of social memory of the disease. Before coming to SI, he worked as an instructor of archives, a museum archivist, and an exhibition curator. As a museum archivist, he was involved organizing and supervising the digitization of photo collections and putting them in a searchable database. He also organized the archives of a former segregation facility for people with leprosy in the Philippines and curated the exhibition of its photographic collection. He is currently working with an research assistant on an NSF-funded research project entitled "Beyond Image Retrieval," where they explore how heavy users of the Library of Congress (LC) digitized image collection judge the quality, integrity and value of the images they retrieve from the LC website.

Ricky's contribution to this project is the opportunity to share his knowledge and experience in an interdisciplinary research setting with fellow graduate students. His background as a professional archivist and researcher of visual archives enables him to provide some insights on the issues surrounding the digitization process in archival institutions, the decisions and standards that archivists follow, the technology they use, and the impact of digitization on the preservation, access and use of images. Ricky is interested in questioning how actions and decisions of archivists constitute notions of image quality and authenticity as well as their influence on the representation, mediation and production of visual knowledge.

URMILA ALLADI VENKATESH is an MFA candidate in the School of Art and Design with a dual focus in graphic / information design, and photography. Before coming to graduate school, Urmila received a Bachelors degree from the University of California at Berkeley in architecture and photography, and then worked for three years as an architectural drafter and graphic/web designer. Her master's thesis is a photographic ethnography documenting the vernacular architectural spaces occupied by South Asian immigrant communities in the United States. She focused on urban and suburban marketplaces populated overwhelmingly by immigrant-owned businesses. The original intent was to build a photographic taxonomy illustrating the visual and cultural cues common to her sites, not to photograph the people invested in the spaces, but the project became as much documentary portraiture as it was a

spatial examination. What began as the study of how a community marks its publicly accessible, privately mediated territory became an exposition of these spaces' dual roles, to support capitalist participation as a legitimate societal pursuit while internally providing a base of solace, familiarity, and partnership. This project fused her interest in analyzing architectural space and wayfinding, graphic symbolism, and issues of identity. She considers the GROCS project an opportunity to apply her design and analytical skills as well as explore her interest in contemporary image production, visual histories, and user interaction with digital archives.

In addition to her academic interests in graphic design, photography, and architecture, Urmila hopes to contribute her skills gained from her former occupation as a labor organizer within the academic workforce. Among other activities, she was trained to communicate to a wide audience from many disciplines across the university. On a daily basis, she helped employees understand their rights and responsibilities, empower themselves to communicate their needs, and train others to the same. Often, she was asked to convey large, complex bodies of information, persuasive arguments, or important regulations to different kinds of employees both graphically and textually. When developing communications to be delivered verbally, she maximized the limited amount of time with an audience as a common guiding principle. She also learned to facilitate discussions that equalize power in groups and incorporate diverse viewpoints when trying to reach consensus. These experiences, along with the many design projects she executed or supervised, were explicit training for assessing the needs of a multifaceted audience and learning to communicate effectively while under time constraints. Urmila feels this will be a useful parallel for examining the user of a digital archive who has limited time to access complex information. She looks forward to experiencing the confluence of her interests in art, design, and communications within the examination of digital archives, and expects to contribute literature, insight, and design to the final project.

KIARA M. VIGIL is currently a Ph.D. candidate in the Program of American Culture at the University of Michigan, where she works with Professor Philip Deloria, and focuses her research on cultural materials produced by Native American intellectuals during the turn of the twentieth century. Her Master's Thesis, from Dartmouth College, was titled: From Ohiyesa's "Deep Woods" to the "Civilization" of Charles: Critiquing and Articulating Native American Manhood in Eastman's Autobiography, which led to more work in Native American Studies, and the presentation of several papers at: "Shifting Borders" Graduate Conference, Concordia University, Montreal (2006), SSAWW Conference in Philadelphia (2006), the AHA-Pacific Coast Branch Conference (2007), and the CIC-American Indian Studies Graduate Conference at Purdue (2008). Previous degrees include: B.A. in History (Tufts University, 1997), M.A. in Teaching of Social Studies (Columbia University's Teachers College, 1998), and M.A. in Cultural Studies (Dartmouth College, 2006).

In particular regards to collaborative work experience using archives, "rich media" technologies, and related to education, Kiara has presented and received grants related to technology in several venues that position her well to work on the "Digitizing Knowledge" project team in terms of both theoretical and practical concerns related to archives, virtual spaces, and design interfaces. Working with another graduate student at Dartmouth College, Jennifer Kocsmiersky, on a multi-media project titled: "A Borderland as Palimpsest: Articulating Borders of Native North American Selfhood with Bricolage in Digital Space" Kiara presented at the Concordia University Visual Arts Conference in February, 2006. Working with Danielle Baron, the Art Teacher, at Baruch College Campus High School, Kiara received a fellowship awarded by The Council for Basic Education and AOL Time Warner (2000-2001) Grant received for "Technology in education in creation of an interdisciplinary

project." She researched and designed a website on contemporary Chinese and Chinese-American Art and the History of China as a resource for teachers and students in examining the following questions: What is the role of art and identity in a multicultural context? What is the role of Chinese and Chinese-American contemporary artists? Also, as a participant in Community School District #2 Kiara did work in conjunction with the Institute for Learning of the University of Pittsburgh and NetLearn (1998-1999). NetLearn is the electronic and online development tool arm of the Institute for Learning that grew out of a 5-year demonstration project supported by a Technology Challenge Grant from the United States Department of Education. This grant was awarded to New York City School District #2, the lead school district in a consortium of eight urban school districts, on behalf of a national consortium of districts known as the Institute for Learning (IFL), which is based in the Learning Research and Development Center, University of Pittsburgh. Software was created to illustrate a collection of principles of effective instruction developed by the IFL, and Kiara's teaching provided valuable excerpts from classroom discussions and an interview, to document work that she did on classroom discussion activities at Baruch College Campus High School. These findings were published as part of a CD-ROM titled: "Accountable Talk: Classroom Conversations That Work," by the University of Pittsburgh in 2001.

COLLEEN WOODS is a doctoral student in the Department of History studying empire, the United States and Southeast Asian history after the Second World War. Colleen examines the development of the newly independent Philippine nation by looking closely at American influence in Philippine politics, universities, technological culture, and the military. She specifically focuses on the ways that discourses and ideologies of technological modernization and development were shaped and reshaped through the interaction between American and Philippine academics, policymakers, students, soldiers, and politicians. Through examining the seemingly political neutral language of science, technology, and modernization Colleen seeks to uncover the ways that the United States sought to reconfigure the relationship with its former colony into a form that would fit the shifting terrain of the postcolonial world.

Colleen brings a perspective on the experience of researching in archives in the United States and abroad. Additionally, Colleen provides insight into the ways that archival research shapes the production of historical knowledge, the practice of writing history, and the professional training of historians. Indeed, in the last twenty years the simple question of "what is an archive" has permeated the study of history. The field of comparative colonialisms, or empire studies, is particularly attuned to raising theoretical questions regarding the preservation and categorization of knowledge. In this way, Colleen brings a theoretical framework as well as her experience as a researcher in archives to the "Digitizing Knowledge" project.

Faculty Biographies

Tiya Miles has agreed to serve as our Primary Advisor.

TIYA MILES is an Assistant Professor at the University of Michigan in the Program in American Culture, the Native American Studies Program, and the Center for Afroamerican and African Studies. Her research and creative interests include African American and Native American interrelated and comparative histories and literatures; African American women's history; and the histories, feminist theories, and life experiences of women of color in the United States. Her first book, *Ties That Bind: The Story of an Afro-Cherokee Family in Slavery and Freedom*, was published by the University of California Press in 2005. In 2007, she was awarded the Hiett Prize in the Humanities from the Dallas Institute of Humanities

and Culture. Tiya brings extensive archival research and teaching experience to her role as our main project advisor. Contact: tiya@umich.edu.

We will also be working in consultation with an interdisciplinary faculty panel: Matthew Biro, Paul Conway, Dwayne Overmyer, Sarita See, and Rebecca Zurier.

MATTHEW BIRO is an Associate Professor of Modern and Contemporary Art, Department of the History of Art and the Residential College. Scholarly interests include aesthetic theory, methodologies of interpretation, 20th-century art, and popular culture, with special focus on the art and culture of Germany and the United States. Professor Biro's current research is on the figure of the cyborg in dada art. He has also taught classes on photography that consider the intersection of technology on art production. He received his Ph.D. from the State University of New York, Stony Brook. Contact: mbiro@umich.edu.

PAUL CONWAY is an associate professor in the School of Information, and the faculty member in charge of the archives and records management specialization at SI. He is well regarded in the archives and preservation professions for his scholarship, extensive teaching and archival work experience. Given his broad knowledge and expertise on digital preservation and curation, he will be a key resource in understanding issues relevant to the process of archival digitization. Contact: pconway@umich.edu.

DWAYNE OVERMYER is a Professor in the School of Art and Design. He has taught graphic design since 1978, as well as courses in conjunction with the School of Information and on behalf of the U-M School of Education. His primary research interest is the analysis and description of typography as a linguistic activity. From 1989 to 2004, he was on the editorial advisory board of Information Design Journal. He will be able to provide expertise in the area of design theory, graphic communication, information design, and visual hierarchies. Contact: overmyer@umich.edu.

SARITA SEE is an associate Professor affiliated with the Program in American Culture, Asian/Pacific Islander American (A/PIA) Studies, and the Department of English Language and Literature at the University of Michigan. Fields of Study: Asian-American literature, late 19th- and 20th-century American literature, postcolonial and empire studies, critical race theory, narratology. Secondary Fields of Study: U.S. Civil War and Reconstruction, African-American literature. In particular relevance to our project, Professor See works on Filipino and Filipino-American representations in terms of visual culture. Contact: ssee@umich.edu.

REBECCA ZURIER is an Associate Professor working in the History of Art Department and affiliated with the Program in American Culture at the University of Michigan. Her scholarly interests include American art, particularly of the 19th-20th centuries, with a special focus on architectural history and material culture, realism and representation, popular and mass culture, and gender studies. Zurier is interested in our project from the perspective of an Art Historian who actively engages in using different technologies to teach her classes on images and archives. She received her Ph.D. from Yale University. Contact: rzurier@umich.edu.

Literature Review

Section One: How do scholars working within Visual Culture, American Culture, and Art History conceive of the digital archive?

In 1936, Walter Benjamin (a German cultural critic who has been influential in the fields of Cultural Studies and Media Studies) published an essay titled: "The Work of Art in the Age of

Mechanical Reproduction." In this essay, Benjamin described and defined the notion of "aura" to refer to the sense of awe and reverence that individuals experience in the presence of unique works of art. According to Benjamin, this aura is not necessarily inherent in the object itself, but rather in its cultural value. A value that can be determined by its external attributes, due to ownership, exhibition, publicity, and ideas like authenticity. For Benjamin, aura is indicative of art's traditional association with primitive, feudal, or bourgeois structures of power and further associations with the ethereal, magical, and ritual (be they determined by religious or secular systems of value). With the advent of art's mechanical reproducibility, and the development of certain visual forms of art (such as photography and film) in which there is no longer the same notion of "original" and therefore, "authentic" object, the experience of art is no longer tied to a particular context (a place or ritual). Instead, art is brought under the gaze and control of a mass audience, which leads to a shattering of the aura. "For the first time in world history," Benjamin wrote, "mechanical reproduction emancipates the work of art from its parasitical dependence on ritual." Along with Benjamin, other scholars who have theorized and studied culture in the modern age. like Roland Barthes (in his work Camera Lucida, 1980) and Pierre Bourdieu (in his book, La Distinction, originally published in French, 1979) have considered the possible negative effects of a "loss of aura" due to the easy (and often mass) replication of images that appear to collapse time and space. Benjamin's definition of "aura" is central to the questions that our project poses with regards to what might be gained but also lost vis-à-vis the process of archival digitization. Allan Sekula, (an American artist, writer, and critic based at The California Institute of the Arts) has also produced useful scholarly work that has shaped debates in visual culture and art history circles regarding how the archive has been understood, categorized, and used over time. His 1992 essay, "The Body and the Archive" offers a historical look at nineteenth-century practices of photography, which he notes was not understood as wholly good or wholly bad, "the simultaneous threat and promise of the new medium was recognized at a very early date, even before the daguerreotype process had proliferated." In his focus on the visual medium of photography, and the social, political, and personal uses to which it was put, Sekula theorizes this development in particular regards to the idea of the archive. He defines the archive thus, "In structural terms, the archive is both an abstract paradigmatic entity and a concrete institution. In both senses, the archive is a vast substitution set, providing for a relation of general equivalence between images." This notion of general equivalence is what interests our project when we put Sekula's work in dialogue with Benjamin's lament concerning the loss of "aura." As Sekula's essay notes, "The capacity of the archive to reduce all possible sights to a single code of equivalence was grounded in the metrical accuracy of the camera." Therefore, it is the role of technology that was of central importance to both Sekula and Benjamin, as it is to the creators and users of digital archives, and the team proposing this project.

Who gets to Speak? Interrogating Archives as Sites of Power

Deconstructing the ways that archives function as sites of power highlights the porous and fluid boundary between past and present and how the study of history is shaped by contemporary political, social, and economic contexts. Particularly, over the last twenty years scholars of history and historical anthropology have dismantled the notion of an "objective" archive. For instance, Anthropologist, Ann Stoler, has written extensively about the ways that archives should be understood as "sites of power," because the materials found in colonial archives are largely the voices of colonial officials writing about a colonized population. In Stoler's reading of archival collections, colonized people are present in historical documents only as representations—or, put another way, descriptions from the perspective of the colonizer.

Stoler has found, in her studies of Dutch Colonial Indonesia, it is rare to find documents in which colonized people "speak for themselves." This question of who is speaking for whom in the archives is, for Stoler, an indication that scholars cannot take colonial documents as objective windows into the past and need to be attuned to the subjective ways in which colonial officials represented colonized people in their letters, reports, diaries, or any other types of writing that end up in archives. Postcolonial scholars Edward Said and Gayatri Spivak have also written on the effects of representation, agency, and the ability for historical subjects to "speak" through archival documents. See: Edward Said, *Culture and Imperialism* (1994) and Gayatri Chakravorty Spivak "Can the Subaltern Speak?" in *The Postcolonial Studies Reader* (1995) edited by Bill Ashcroft.

The idea that one could empirically "re-create" the past through reading historical facts presented through archival documents does not take into account the ways in which archives themselves have a history to tell. Why certain documents end up in archives and how they are categorized once they get there can reveal numerous insights into the past. For instance, the vast documents and artifacts collected through imperial projects, and the ways in which "native populations" appear in the archives through public health, criminal, or court records, can offer clues into how colonial societies racialized and policed certain populations. Archives are not simply sites that contain the artifacts of history, waiting to be uncovered by equally objective historians. Instead, scholars have increasingly turned a critical eye towards the ways in which archives allow for particular stories to be told, while silencing others.

Historian Antoinette Burton's edited collection, *Archive Stories: Facts, Fictions, and the Writing of History* (2005), and Carolyn Steedman's *Dust: The Archive and Cultural History* (2002) engage the theoretical questions described above as well as the ways that a researcher's gender, race, or class can impact the experience of the archive. Additionally, scholars in Burton's collection engage questions not often considered, such as: the increased presence of surveillance in archival libraries, the bureaucratic structures that govern the accessibility of archives, and the physical experience of spending hours on end digging through countless historical documents. Similarly, Ann Stoler has compiled a collection of critical essays on reading archives as sites of power in her book, *Along the Archival Grain: Epistemic Anxieties and Colonial Common Sense* (2008).

Section Three: Archival Boon or Bane? Responses to Image Digitization

In recent years, archivists have mulled over the impact of modern information technology in the creation, management, preservation and use of the human record. (1) The Internet alone has afforded infinite possibilities for accessing archival contents without requiring a visit to an institutional repository or to examine actual artifacts. (2) Millions of historical photographs are now available and downloadable online, courtesy of advanced and sophisticated image scanning technologies, efficient and interactive web interface and faster and broader web connectivity. (3) With almost all major archival institutions digitizing their photo collections, archivists are challenged to address the fundamental issues surrounding the transition of images from the analog originals to their digital surrogates (4), foremost of which is the notion of authenticity and integrity. (5) Among the "affordances" (6) inherent to electronic images is their easy reproducibility and manipulation that many regard as a threat to the authentic original. Others frame this as an issue of control. (7) In the web environment, the traditional role of archives and archivists as guarantors of authenticity is no longer as apparent, (8) Thus, numerous papers have been written about the need to establish standards or protocols, and to identify best practices or processes to emulate in image scanning, all with the goal of finding ways to safeguard the integrity and guarantee

the faithfulness of surrogates to their originals. (9) Some decry the loss of "materiality" that renders context and meaning to actual photographs. (10) The ability to feel, hold and touch—the very tangibility of photographs—are the very characteristics of analog images that cannot be translated into electronic reformatting. Defenders of digitization, on the other hand, argue that it is precisely this diminished interaction with original images that is the best way to preserve historical photos without necessarily limiting users' access to the image content. (11) Many laud digitization for its capacity to allow for more equitable opportunities to view materials that are otherwise kept hidden from view and locked up in archival storage. (12)

For some, digitization opens up some old wounds and lingering issues that, if not resolved, will be carried into the new electronic environment. It is widely acknowledged that archivists have the tendency to regard their visual materials as secondary to their textual collections. (13) This is perhaps best embodied in the institutional discourse of highlighting what images are not: "non-textual" records. Often, images are seen as mere support for prized documents and paper records. Others have expressed concern about how archival methods and standards, applied in the organization, classification and description of photographs, follow a textual orientation that fails to appropriately represent the visual. (14) Digitization, however, also introduces new ways of seeing and interacting with images that inspire archivists to question old and traditional professional practices and values. (15) Online digitized photographs challenge archivists to refigure the function and meaning of archives in contemporary society, and to grapple with both the benefits and challenges of technologically mediated access to visual evidence. (16)

Useful References for Information Design

Managing information is a complex endeavor challenged by the constantly shifting development of information technologies and subsequent user sophistication. Theoreticians and practitioners have written extensively on the design of information and the vehicles that deliver it through a variety of media. As we develop possible prototypes in response to the data we collect, we will be looking to resources on information design, website usability and hierarchy, user orientation, and graphic interface design. A few are included in the bibliography.

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Appendix A: Sample Interview Questions

- **a.** What kind of experience would you like to have when accessing a digital archive as a researcher and a teacher?
- **b.** What are particular navigation tools that you might need? In terms of context, how much background information on the digitization and archiving process would you like to see on the screen?
- **c.** Given your current training and expertise, how does the act of doing digital research change the nature of your research practices? How might your overall experience as a scholar change if you no longer have to travel to archives? Relatedly, how might this also contribute to shifting the way research has and will function in your field?
- **d.** From a theoretical perspective, how is technology not only a tool for connecting people with knowledge and each other, by collapsing space and time, but also potentially responsible for contributing to separation and dislocation, resulting in a deepening of disconnection between particular people and places?
- **e.** Do you experience a loss of "aura" due to the separation of yourself and the material from its original context?

1. Home Page

The Bentley Image Bank allows you to browse images a few different ways. You may search for images which have been presorted by category, like — photographer and genre. You may browse other users' portfolios. Or, if you are a periodic or regular user, you may choose the option of browsing the newest additions to the archive.

2. Portfolio Function

You may create personal archives and choose to make them public. You simply add images you encounter in your searches and add them to your portfolio as you browse.

Add to a New or Existing Portfolio

login

Help For Using Portfolios

To create a **new** portfolio with the selected images, enter a name in the **text box** and click **Submit**.

To **add** the selected images to an **existing** portfolio, find the portfolio name in the table below and click **add**.

New Portfolio Name

viewable by public Submit

None present.

Appendix B
Illustration of Bentley Image Bank

3. Other users' portfolios

You may browse other users' personal archives if they are available for public viewing.

Portfolios

logout urmila

Help For Using Portfolios

your portfolios | all public portfolios

None present.

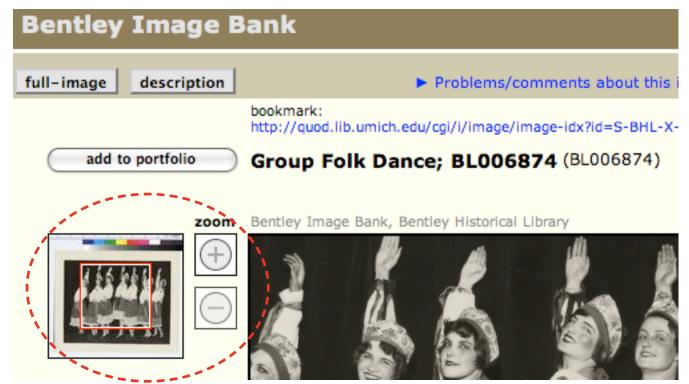
your portfolios | all public portfolios

portfolio name	action			public	owner(s
ArchofHadrianFA	open	download	5	yes	aarbini
Piazza Armerina	open	download	6	yes	abreset

4. Features

Once you are in the image record, you can zoom and pan around an image to experience a very high level of detail. You can choose from a variety of resolution sizes as well.

Logging into the site gives you the ability to save your searches into a portfolio (see above). You may also use a Finding Aid, which is a link to the information about where the image is located, and save that search information in a virtual "bookbag."



The Otis Historical Archives has its own searchable website, but it also maintains an archive of images on Flickr, a popular site for sharing photographs and building virtual communities.



Links
Articles and
Interviews
Search
Finding Aids

Cross Refs



George A. Otis, Curator Army Medical Museum 1864-1881

The Otis Historical Archives was created in 1971 to hous

