# Fields of Vision: Toward a New Theory of Visual Literacy for Digitized Archival Photographs

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RÉSUMÉ Depuis plus d'une décennie, les archivistes et les chercheurs en archivistique ont étudié les conséquences théoriques et pratiques de la numérisation des documents d'archives visuels. On s'est ainsi penché sur la pertinence de la recherche en alphabétisation visuelle (« *visual literacy* ») dans la pratique de l'archivistique, ainsi que sur les conséquences d'une perte apparente de la valeur intrinsèque, du sens et du contexte découlant du processus de représentation numérique. Ce qui manque le plus dans les perspectives centrées sur l'archiviste et sur le processus est une connaissance profonde de l'expérience de l'usager qui trouve un sens dans les archives visuelles. Cet article présente une nouvelle théorie à multiples facettes sur le sens du visuel, découlant d'études de cas approfondies d'usagers très expérimentés des archives photographiques numérisées. Ce texte contextualise la théorie Champs de vision (« *Fields of Vision* ») dans la littérature sur l'alphabétisation et la perte matérielle, démontrant que l'usage basé sur le produit englobe les modes de découverte [*discovering*], de création de narrations [*storytelling*] et de création de paysages [*landscaping*] qui sont foncièrement archivistiques dans leur fondement. La numérisation des photographies d'archives créé aussi des variations dans la valeur qu'attribuent les usagers expérimentés aux propriétés matérielles des photographies originales. Ce texte conclue en offrant des conséquences de la théorie Champs de vision sur la recherche future centrée sur les usagers.

ABSTRACT For well over a decade, archivists and archival scholars have examined the theoretical and practical implications of digitizing visual records. Significant components of this inquiry include the relevance of visual literacy research to archival practice as well as the implications of the apparent loss of intrinsic value, meaning, and context through the processes of digital representation. What is missing most prominently from essentially archivist- and process-centric perspectives is a deep understanding of the user experience of finding meaning in visual archives. This article presents a new multi-faceted theory of visual meaning, derived from in-depth case studies of highly experienced users of digitized photographic archives. The paper contextualizes a "Fields of Vision" theory in the literature on literacy and material loss, demonstrating that product-based use encompasses modes of discovering, storytelling, and landscaping that are fundamentally archival in their construction. The digitization of archival photographs also produces distinctive variation in the value that experienced users place on the material properties of original source photographs. The paper concludes with the implications of the "Fields of Vision" theory for future user-based research.

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## Introduction

Over a span of just two decades, the creation of collections of "historical digital objects"[1] has transitioned from rarified experiment to nearly ubiquitous activity across both the commercial and the non-profit sectors.[2] Within the cultural heritage community of libraries, archives, and museums, the multi-billion dollar investment in building digital collections from photographic and other cultural resources has been framed by community-based guidelines and best practices developed by tightly circumscribed but overlapping networks of technical experts.[3] Seamus Ross argues compellingly that the resulting libraries of digital content are simultaneously mechanisms for delivering digital surrogates of archival holdings and new archival collections in their own right, reflecting the practices of digital curators throughout the digitization process.[4] Steven Puglia and Erin Rhodes review digitization practice in the cultural heritage sector and find insufficient progress in gauging the relationship between digitization and user behaviour. They observe, "It is a little humbling to look back and admit that we are still asking many of the difficult questions that we were asking over a decade ago."[5]

The perspectives that determine how users extract meaning from digital surrogates of photographic archives are not well understood, in part because the knowledge gained from user-oriented evaluations of digital libraries and archives is incomplete and inconclusive. Tefko Saracevic reviews more than eighty empirical studies of digital library users and finds only four studies that are based on collections of digital images – all of which focus largely on the retrieval effectiveness of the image delivery system itself. He concludes that a fundamental tension exists between the perspectives of digital library creators and digital library users: "In use, more often than not, digital library users and digital libraries are in an adversarial position."[6] In a separate study, Saracevic

1 Fiona Cameron, "Beyond the Cult of the Replicant: Museums and Historical Digital Objects – Traditional Concerns, New Discourses," in *Theorizing Digital Cultural Heritage: A Critical Discourse*, eds. Fiona Cameron and Sarah Kenderdine (Cambridge, MA, 2007), p. 49.

2 Melissa M. Terras, *Digital Images for the Information Professional* (Ashgate, UK, 2008), pp. 15–34.

3 Paul Conway, "Best Practices for Digitizing Photographs: A Network Analysis of Influences," in *Proceedings of IS&T's Archiving 2008,* Berne, 24–27 June 2008, pp. 94–102.

4 Seamus Ross, "Digital Preservation, Archival Science and Methodological Foundations for Digital Libraries." Keynote Address at the 11th European Conference on Digital Libraries (ECDL), Budapest, 17 September 2007.

5 Steven Puglia and Erin Rhodes, "Digital Imaging: How Far Have We Come and What Still Needs to Be Done," *RLG DigiNews*, vol. 11, no. 1 (15 April 2007), http://www.rlg.org/en/page.php?Page_ID=21033#article2 (accessed on 27 February 2011.)

6 Tefko Saracevic, "How Were Digital Libraries Evaluated?" Paper first presented at the

examines sixty-four empirical studies of how users of digital systems judge the relevance of the results they obtain. In addition to his insight that relevance studies primarily describe the undergraduate perspective, Saracevic finds that only one study in the past twenty years has anything of merit to say about the use of digitized photographs or other images.[7] In that study, Youngok Choi and Edie Rasmussen explore the formulation of search queries by graduate students and history faculty in the American Memory digital library of the Library of Congress.[8]

Krystyna Matusiak also focuses on search and retrieval strategies in an image-based context. The work compares the strategies of undergraduates and the general public, finding strong evidence for distinctive mental models within the two groups.[9] Judith Weedman's exploratory study of retrieval relevance in image-based research, based on a single case, finds that the artificial separation between relevance and actual use, "circumscribes understanding of both."[10] These studies, along with nearly all digital library research in visual collections to date, treat visual images as fixed, controlled objects of retrieval, rather than as evidential sources whose fluidity and variability are themselves factors in the use equation. The field needs research that explores the ways that users extract visual meaning in practice and apply that meaning through "context-dependent and context-sensitive evaluation techniques."[11]

We introduce a new model called "Fields of Vision" as a way to illustrate the context and dynamics of access, interpretation, and use of digitized archival photographs. The proposed model is the result of a study that examined a group of experienced users of digitized images delivered through the digital library collections of the Library of Congress. By engaging in this research, we hope to contribute to the emerging field of "digital visual literacy" and to advance a more sophisticated view of the impact of digitization on archival images. This work derives theory from the articulated experiences and

DELOS WP7 Workshop on the Evaluation of Digital Libraries (2004), p. 6.

7 Tefko Saracevic, "Relevance: A Review of the Literature and a Framework for Thinking on the Notion in Information Science. Part III: Behavior and Effects of Relevance," *Journal of the American Society for Information Science*, vol. 58, no. 13 (2007), pp. 2126–44.

8 Youngok Choi and Edie M. Rasmussen, "Users' Relevance Criteria in Image Retrieval in American History," *Information Processing and Management*, vol. 38, no. 5 (2002), pp. 695–726.

9 Krystyna K. Matusiak, "Information Seeking Behavior in Digital Image Collections: A Cognitive Approach," *Journal of Academic Librarianship*, vol. 32, no. 5 (2006), pp. 479–88.

10 Judith Weedman, "Thinking with Images: An Exploration into Information Retrieval and Knowledge Generation," *Proc. 65th Conference of the American Society for Information Science and Technology*, 18–21 November 2002, p. 376.

11 Ching-chih Chen, Howard Wactlar, James Z. Wang, and Kevin Kiernan, "Digital Imagery for Significant Cultural and Historical Materials – An Emerging Research Field Bridging People, Culture, and Technologies," *International Journal of Digital Libraries*, vol. 5, no. 4 (Special Issue) (2005), pp. 275–86.

practices of archival users. The model we offer is a way to depict the multiple approaches that users utilize in engaging with digitized visual archives and the respective meanings they generate as they employ these approaches. By formulating a model based on user experience, we present a fresh outlook on the value of understanding archival users and their role in assessing the impact of digitization on archival use and interpretation. Archivists can learn from users by understanding how they interact with archival collections.

## Visual Literacy and Digital Materiality: Perspectives on Visual Archives

An understanding of how users see, read, and otherwise make sense of digital surrogates of visual archives might best be anchored in the broader literature on visual literacy, visual archives, and the emerging field of digital visual literacy that is attempting to reconcile new technologies of visual remediation with traditional forms of interpretation conducted with the photographic item in hand. For forty years, the research field of "visual literacy" has attempted to define, measure, and enhance understanding and learning via visual media of all forms.[12] Paul Duncum argues that visual literacy theory has been inspired by changes in media and technologies.[13] Lyn and Floyd Ausburn attribute theoretical developments in the field on the drive to re-orient the concept from one of passive ability to decode visual cues, to a more sophisticated ability to use and interpret visual symbols intentionally in a critical fashion.[14] From its inception in the late 1960s[15] to its contemporary appropriation as the emergent "digital visual literacy,"[16] the evolution of visual literacy as a theoretical and practical construct seems to reflect a near constant ebb and flow in what it means to be visually literate. Scholars of visual literacy struggle to form an all-encompassing multidisciplinary construct, where each writer has a greater stake in demonstrating the power of a framework, than in its application as an explanatory tool.[17]

Building on pioneering work to define a set of visual competencies and skills, Roberts Braden and John Hortin suggest that visual literacy has two

12 David Bawden, "Information and Digital Literacies: A Review of Concepts," *Journal of Documentation*, vol. 57, no. 2 (March 2001), pp. 218–59.

13 Paul Duncum, "Visual Culture Isn't Just Visual: Multiliteracy, Multimodality and Meaning," *Studies in Art Education*, vol. 45, no. 3 (2004), pp. 25–64.

14 Lyn J. Ausburn and Floyd B. Ausburn, "Visual Literacy: Background, Theory and Practice," *PLET*, vol. 15, no. 4 (1978), pp. 291–97.

15 Roger B. Fransecky and John L. Debes, *Visual Literacy: A Way to Learn – A Way to Teach* (Washington, DC, 1972).

16 Florence Martin, Anne Spalter, Oris Friesen, and John Gibson, "An Approach to Developing Digital Visual Literacy," *Media Review* 14 (2008), pp. 117–43.

17 Maria Avgerinou and John Erickson, "A Review of the Concept of Visual Literacy," *British Journal of Educational Technology*, vol. 28, no. 4 (1997), pp. 280–91.

faces: the ability to understand images and the ability to use them.[18] In expanding this idea, Ann Marie Barry suggests that mere "awareness of the logic, emotion, and attitudes suggested in visual messages; and the ability to produce meaningful images for communication with others" is not enough.[19] An evocation of the emotional reaction to the visual object may be an important element, but Barry's notion of "visual intelligence" goes far beyond the capacity to recognize and use visual cues. For Barry, visual intelligence includes critical awareness of visual manipulation or distortion, and the ability to apply this understanding to implement positive or corrective actions. Interpretation of the relevance of an image and its appropriateness for a given application are subjective judgments that may have measurable components. Peter Dallow takes the elements of understanding in visual literacy a step further by arguing that, "the practices of looking [the gaze] inform our lives beyond our perception of images *per se*." The meaning that visual objects invoke can only be understood by "taking account of the practices that participants deploy to build the social worlds that they inhabit and constitute through ongoing processes of action."[20]

For Barry and others who focus on the impact of digital technologies on visual literacy, "image use" is directly related to the production of new products in which the transformed, re-contextualized, and remediated image is its central component. Use requires "a quality of mind developed to the point of critical perceptual awareness in visual communication."[21] Paul Messaris and Sandra Moriarty also argue that the most critical elements of visual literacy are the activities that make picture-based media a means of communication.[22] B.A. Chauvin identifies a special sub-category of "media literacy" that includes the understanding of the processes, techniques, and purposes used by those who produce visual media.[23]

Scholars of the visual within the archival field have consistently lamented the evident logocentric bias in archival practice; they have also promoted visual literacy as a framework to mend an imbalance that favours textual analysis. Joan Schwartz largely dismisses the efforts of archivists as inade-

18 Roberts A. Braden and John A. Hortin, "Identifying the Theoretical Foundations of Visual Literacy," *Journal of Visual/Verbal Languaging* 2 (1982), pp. 37–51.

19 Ann Marie Barry, *Visual Intelligence: Perception, Image, and Manipulation in Visual Communication* (Albany, 1997), p. 6.

20 Peter Dallow, "The Visual Complex: Mapping Some Interdisciplinary Dimensions of Visual Literacy," in *Visual Literacy*, ed. John Elkins (London, 2008), p. 92.

21 Barry, p. 6.

22 Paul Messaris and Sandra Moriarty, "Visual Literacy Theory," in *Handbook of Visual Communication: Theory, Methods, and Media*, eds. Kenneth L. Smith, Sandra Moriarty, Gretchen Barbatsis, and Keith Kenney (Mahwah, 2005), pp. 481–502.

23 B.A. Chauvin, "Visual or Media Literacy?" *Journal of Visual Literacy*, vol. 23, no. 2 (Autumn 2003), p. 125.

quate: "Because the archival literature itself – some of it outdated, some plain wrong-headed – provides little direction for understanding visual materials in archival terms, it is necessary to read outside the field, to extrapolate from the methodological approaches from one medium to another, in order to gain clearer understanding of the nature and value of visual materials as archival, and in turn improve archival approaches to appraisal, acquisition, description and access."[24]

Schwartz has a point. The archival literature is indeed sparse yet pointed in its examination of the state of visual archives from both practical and theoretical perspectives. Examining the development of archival discourse about images in the last thirty years, Tim Schlak[25] addresses how photography has always eluded the archival profession. The archival literature reflects constant shifts of perspective over the meaning of photography as art, as historical evidence, or as a medium for representing reality. The debate, as Schlak suggests, carries well beyond archives and is not endemic to the archival field. Archivists, grappling with photography's idiosyncrasies as a medium, find it difficult to articulate photographic meaning, and have been uncomfortable about its place in the archives in relation to other holdings. This uneasiness has profoundly constrained our ability to handle photographs, in both practice and theory.

At one end of a practice-to-theory continuum, writers urge archivists to obtain "visual literacy": a set of analytical skills to improve their handling and processing of archival records. Elizabeth Kaplan and Jeffrey Mifflin propose a concept of "levels of visual awareness":[26] essentially a set of guiding principles for "reading" archival images. Archivists, they conclude, "should explore the ideas behind visual literacy in practical terms applicable to archival methods and archival records."[27] In a similar vein, Nancy Bartlett[28] and Schwartz separately map how the concept of "diplomatics," with "its macroanalytical framework and microanalytical methodology can offer archivists a path to greater visual literacy."[29] In her discussion centred on "practicing

24 Joan Schwartz, "Negotiating the Visual Turn: New Perspectives on Images and Archives," *American Archivist* 67 (Spring/Summer 2004), p. 109.

25 Tim Schlak, "Framing Photographs, Denying Archives: The Difficulty of Focusing on Archival Photographs," *Archival Science* 8 (2008), pp. 85–101.

26 These are (1) *Superficial* (of) – raw description of what the image is showing; (2) *Concrete* (about) – context of the image, i.e., historical period, politics and culture of the era, etc.; and (3) *Abstract* – dissecting and describing elements or components of a visual material, creator's intent (when available), and possible impact on viewers.

27 Elizabeth Kaplan and Jeffrey Mifflin, "Mind and Sight: Visual Literacy and the Archivist," *Archival Issues*, vol. 21, no. 2 (1996), p. 116.

28 Nancy Bartlett, "Diplomatics for Photographic Images: Academic Exoticism?" *American Archivist* 59 (Fall 1996), pp. 486–94.

29 Joan Schwartz, "'We Make Our Tools and Our Tools Make Us': Lessons from Photographs for the Practice, Politics, and Poetics of Diplomatics," *Archivaria* 40 (Fall 1995), p. 42.

visual literacy," Helena Zinkham succinctly captures its relevance to archival practice: "Basic visual literacy, the ability to 'read' pictorial images, is a fundamental skill necessary for working with photographs."[30] As Zinkham describes ways to develop visual literacy, her argument builds on the earlier works of other archival scholars whose writings helped shape contemporary thinking on visual awareness in the field.

A striking feature of the archival literature that is informed by visual literacy theory is its almost exclusive focus on archivists and archives as mediators between archival images as historical evidence and their interpretation or use. Schwartz even suggests that archivists' lack of appreciation of visual collections is partly to blame for history's "visual illiteracy."[31] Schwartz and Mifflin give much critical attention to the limitations and failures of archival standards and practices of description.[32] Joanna Sassoon highlights the changing values and perspectives in appraisal and retention decisions.[33] Schwartz,[34] Mifflin,[35] and Jessica Bushey[36] each focus special attention on the social and cultural context of image creation, preservation, and consumption.

At the other end of the practice-to-theory continuum are cautionary warnings about the impact of information technologies – in particular digitization, new media, and networked/remote online access – on the formation of visual meaning. Sassoon,[37] Lilly Koltun,[38] and Schwartz[39] emphasize that digitization should not be undertaken without profound reflection and critical examination. They see the transformation from analog to digital as impinging on notions of materiality, originality, institutional practice, viewer experience, and trust/authenticity.[40] Sassoon, for instance, highlights a sense of loss in experiencing the photograph in the digital realm. The ability to feel, hold, and touch – the profound tangibility of photographs even when they are exhibited behind glass

30 Helena Zinkham, "Reading and Researching Photographs," in *Photographs: Archival Care and Management*, eds. Mary Lynn Ritzenthaler and Diane Vogt-O'Connor (Chicago, 2006), p. 59.

31 Joan Schwartz, "Coming to Terms with Photographs: Descriptive Standards, Linguistic 'Othering', and the Margins of Archivy," *Archivaria* 54 (2002), pp. 142–71.

32 Jeffrey Mifflin, "Visual Archives in Perspective: Enlarging on Historical Medical Photographs," *American Archivist* 70 (Spring/Summer 2007), pp. 32–69.

33 Joanna Sassoon, "Photographic Meaning in the Age of Digital Reproduction," *LASIE*, vol. 29, no. 4 (December 1998), pp. 5–15.

34 Joan Schwartz, "'Records of Simple Truths and Precision': Photography, Archives, and the Illusion of Control," *Archivaria* 50 (Spring 2000), pp. 1–40.

35 Mifflin.

36 Jessica Bushey, "He Shoots, He Stores: New Photographic Practice in the Digital Age," *Archivaria* 65 (2008), pp. 125–49.

37 Sassoon, "Photographic Meaning in the Age of Digital Reproduction."

38 Lilly Koltun, "The Promise and Threat of Digital Options in an Archival Age," *Archivaria* 47 (Spring 1999), pp. 114–35.

39 Schwartz, "Records of Simple Truths and Precision."

40 Schwartz, "Negotiating the Visual Turn."

in a museum gallery – is a property of analog images that cannot be transferred to electronic form. For Sassoon, digitization transforms "a complex multilayered laminated object" into something less tangible, resulting in "an ephemeral ghost" or "a mere shadow of its former being."[41]

Proponents of archival image digitization, within and beyond the archival field, counterbalance these skeptics. Librarian Marlene Manoff suggests that understanding the material characteristics of digital objects is crucial.[42] In contextualizing electronic objects as material objects, Manoff cites the works of cultural studies scholars N. Katherine Hayles,[43] Matthew Kirschenbaum,[44] and Johanna Drucker,[45] each of whom demonstrates the ways in which a rich understanding of print and electronic objects is constrained by an emphasis on their immateriality. Loss of materiality has been offered as an argument against photographic digitization; this thinking fails, however, to acknowledge that digitization is in fact another mode of material presentation – a re-presentation – that merits further study as an experience. Kirschenbaum describes this as "the tactile fallacy": the assumption that electronic objects are immaterial because we "cannot reach out and touch them."[46] As a new format for encountering, interpreting, and grasping the meaning of the photographic medium, surrogacy inspires reflection on how the material medium of presenting visual content actually figures in experiencing photography as a technological process itself.

Andrea Witcomb characterizes the "cultural heritage sector's dilemma"[47] regarding digitization and surrogacy, as a choice between confronting digital technology as a threat to established culture and embracing new technologies as an opportunity for the field to reinvent itself. In her view, individuals who see digitization as a threat are worried about the "loss of aura and institutional authority, the loss of the ability to distinguish between the real and the copy,

41 Joanna Sassoon, "Photographic Materiality in the Age of Digital Reproduction," in *Photographs Objects Histories: On the Materiality of Images*, eds. Elizabeth Edwards and Janice Hart (London, 2004), p. 199.

42 Marlene Manoff, "The Materiality of Digital Collections: Theoretical and Historical Perspectives," *Portal: Libraries and the Academy*, vol. 6, no. 3 (2006), pp. 311–25.

43 N. Katherine Hayles, "Translating Media: Why We Should Rethink Textuality," *Yale Journal of Criticism*, vol. 16, no. 2 (2003), pp. 263–90.

44 Matthew G. Kirschenbaum, "Editing the Interface: Textual Studies and First Generation Electronic Objects," *Text: An Interdisciplinary Annual of Textual Studies* 14 (2002), pp. 15–51.

45 Johanna Drucker, "Intimations of Immateriality: Graphical Form, Textual Sense, and the Electronic Environment," in *Reimagining Textuality: Textual Studies in the Late Age of Print*, eds. Elizabeth Bergmann Loizeaux and Neil Fraistat (Madison, 2002).

46 Kirschenbaum, p. 43.

47 See Anne-Marie Willis, "Digitisation and the Living Death of Photography," in *Culture, Technology and Creativity in the Twentieth Century*, ed. Philip Hayward (New Barnet, UK, 1990), pp. 197–208.

the death of the object, and a reduction of knowledge to information." On the other hand, she believes that individuals who interpret digital surrogacy as a net gain see these same losses in materiality as a step toward achieving equity in access and meaning construction; Witcomb continues that, "loss of institutional authority could mean being facilitators rather than figures of authority, an openness to popular culture, the recognition of multiple meanings," among others.[48] Echoing Witcomb, Peter Walsh notes that the effect of reproduction, contrary to Walter Benjamin's well-discussed theory, is not the shattering of the aura but the enhancement of it. "It is, as we have already seen, the reproduction that confers status and importance on the original. The more reproduced an artwork is – and the more mechanical and impersonal the reproductions – the more important the original becomes."[49] He thus concludes that in this age, the less reproduced the art, the less its significance. Similarly, renowned visual studies scholar, W.J.T. Mitchell claims that the digital "copy is no longer an inferior or decayed relic of the original, but it is in principle an improvement on the original."[50]

If the debate on digitization focuses on "dematerialization" as an inherent effect of the process, then the perceived loss of meaning and immutability in the physical format of photographs is at the heart of the matter. Likewise, this debate suggests grave concerns about changes and displacement of cultural practices surrounding image access, use, and interpretation. Those who frame these concerns as prohibitive seem to conflate and confuse several key material and visual aspects of photography. In her work on photographic materiality, Elizabeth Edwards acknowledges these concerns but moves beyond them; she argues that reproducibility has always been a key characteristic of photographs, and that "[T]echnology alone does not necessarily determine shifts of meaning in images, for arguably photographs maintain an integrity of their own as images[,] which can be spread across multiple forms."[51] In fact, she believes that "digitization can enliven photographs, moving them into new spaces."[52] Mitchell also distinguishes between the image and the picture, arguing that the latter is "a material object, a thing you can burn or break," whereas an image is "what appears in a picture, and what survives its destruction – in

48 Andrea Witcomb, "The Materiality of Virtual Technologies: A New Approach to Thinking About the Impact of Multimedia in Museums," in *Theorizing Digital Cultural Heritage*, p. 35.

49 Peter Walsh, "Rise and Fall of the Post-Photographic Museum: Technology and the Transformation of Art," in *Theorizing Digital Cultural Heritage*, p. 29.

50 W.J.T. Mitchell, "The Work of Art in the Age of Biocybernetic Reproduction," *Modernism/Modernity*, vol. 10, no. 3 (2003), p. 487.

51 Elizabeth Edwards, "Photographs and History: Emotion and Materiality," in *Museum Materialities: Objects, Engagements, Interpretations*, ed. Sandra H. Dudley (London, 2010), p. 31.

52 Ibid.

memory, in narrative, and in copies and traces in other media."[53] For Edwards and Mitchell, the image can be carried and can survive various material transmutations.

Visual literacy remains a problematic concept for archival thought. Its meaning is constantly redefined and its terms are renegotiated as media formats and notions of visual competencies evolve. The prescriptive approach to visual literacy that has dominated the archival field needs to be reexamined for its actual usefulness in practice. Archivists can no longer assume that the parameters of the concept are bound and clearly defined, especially in light of web access and digital media. Digitization and the perceived lack of materiality of the digital format are other areas that seem to occupy much thinking about image collections.

In all these discussions, there is a distinctive and pronounced absence of archival users, particularly their perspectives, experiences, and uses of images. Lacking still is an understanding of how users of archival images demonstrate forms of visual literacy as they interact with images in the digital realm. The goal of the present study is to understand and provide a nuanced characterization of image access and use from experienced users of digitized visual archives. In so doing, we propose a model that contributes to the ongoing discussion on digital visual literacy.

## Methodology: Participants, Projects, and Data

This article is the result of an exploratory study; a first effort to construct a user-centred theory of "digital visual literacy."[54] Seven in-depth case studies of highly experienced users of digitized photographic archives provide a foundation for a model that describes varying approaches to extracting meaning from digital images and marshaling that meaning in the service of specific, tangible products. The "Fields of Vision" model takes the form of a graphic representation, supported by extensive testimonials to the specific components of the model, drawn from interview transcripts. Data from the underlying case studies also support an alternative view of user perspectives – published elsewhere – that emphasize the varying "modes of seeing" digitized photographs: as images, as pictures, and as archives.[55] This article picks up where that article's discussion of archival perspectives on digitized collections leaves off.

53 W.J.T. Mitchell, "Visual Literacy or Literary Visualcy?" in *Visual Literacy*, p. 16.

54 Anne Spalter and Andries van Dam, "Digital Visual Literacy," *Theory Into Practice* 47 (2008), pp. 93–101.

55 Paul Conway, "Modes of Seeing: Digitized Photographic Archives and the Experienced User," *American Archivist* 73 (Fall/Winter 2010), pp. 425–62.

### *Participants*

Seven case studies were developed through an in-depth, qualitative investigation of the experience and the products produced by skilled users of the digitized photograph collections of the Library of Congress (LoC).[56] The seven participants vary widely in terms of demographic, educational, and occupational characteristics. Three are female; four are male. Their ages range from thirty to sixty-seven. The participants work and live east of the Mississippi River in five separate communities. All seven are college graduates, in disciplines that encompass the arts and humanities, social science, and business. Two hold master's degrees, and one was a doctoral student at the time of the interviews. None of the participants are archivists, although two individuals have experience working as paraprofessionals in one or more archives. Only one of the seven has an educational background in photography; all participants characterize themselves as self-taught in the areas of their research. All of the participants (with the exception of one) are non-academic in their orientation toward their work; their approach to research and visual investigation generally lacks an overt theoretical perspective.

### *Participants' Projects*

Products (see Table 1) of the work of the participants include four books, a dissertation, a complex and dynamic website, and a database for a membership organization. For their projects, participants used digitized photographs from five collections delivered from either the Library of Congress's American Memory (AmMem) database or the online catalogue of the LoC Prints and Photographs Division (PPD), both of which are large, well-established, visually oriented, digital access systems.[57] Each of the five collections is discrete within its particular delivery system. The Civil War Photographs collection is available through interfaces to both the American Memory and the PPD databases. The Turkestan Album has an independent access interface through the PPD home page; the photographs from the National Child Labor Committee (NCLC) are available in digital form only through the PPD online catalogue. Portions of the Farm Security Administration/Office of War Information (FSA/OWI) collection are distributed through the American Memory interface, but the entire digitized collection is fully available only through the PPD interface. Finally, the Bain photograph collection is fully available digitally through the PPD interface and selectively through multiple components of the

56 Paul Conway, "The Image and the Expert User," *Proceedings of IS&T's Archiving 2009, Imaging Science & Technology*, 4–7 May 2009 (Arlington, VA), pp. 142–50.

57 Carolyn R. Arms, "Getting the Picture: Observations from the Library of Congress on Providing Online Access to Pictorial Images," *Library Trends* 48 (Fall 1999), pp. 379–409.

American Memory database.[58]

For each case study participant, Table 1 lists the project, Library of Congress digital collection, delivery database, expected product, and mode (or modes) of inquiry utilized in the project (Discovering, Storytelling, or Landscaping) that forms the components of the "Fields of Vision" model described in this article.

**Table 1: Case Study Participants' Projects**

| | Project | Collection | Database | Product | Mode |
|---|---|---|---|---|---|
| P1 | US Civil War photographers | Civil War | AmMem | Book | D and S |
| P2 | Russian colonialism | Turkestan | PPD | Dissertation | L and D |
| P3 | Child labor practices | NCLC | PPD | Website | S |
| P4 | Depression-era music | FSA/OWI | PPD | Book | L or D |
| P5 | Biography of photographer | FSA/OWI | PPD | Book | S and L |
| P6 | Depression-era photo story | FSA/OWI | AmMem | Book | S |
| P7 | Baseball history | Bain | PPD/AmMem | Database | D |

### *Data Collection and Analysis*

The authors conducted telephone and individual face-to-face interviews with each of the seven participants in two phases: a forty-five-minute telephone interview, and an onsite personal interview and observation. Each interview proceeded in a semi-structured fashion through the components of an established protocol. Individual interviews varied from 1.5 to 4.5 hours in length and were recorded in full. Analysis of the resulting interview recordings and transcripts proceeded in three stages: 1) the creation immediately after each interview of journal entries with contextual information not captured explicitly in the recordings (e.g., image numbers; name spellings; physical site description); 2) the assembly of data from: the interview instruments, the collections used, and the products produced by the participants; and 3) the qualitative analysis of interview transcripts using the grounded theory method. Grounded theory analysis is designed to extract systematic knowledge on research problems for which the underlying theory is underdeveloped.[59] The term "grounded" refers to the process of developing testable hypotheses from the interview data itself, rather than using interview data to test pre-estab-

58 Library of Congress, Prints & Photographs Online Catalogue, http://www.loc.gov/pictures/; Library of Congress, American Memory, http://memory.loc.gov/ammem/index.html (both accessed on 27 February 2011).

59 Kathy Charmaz, *Constructing Grounded Theory: A Practical Guide through Qualitative Analysis* (Thousand Oaks, CA, 2006).

lished theories. The outcome of grounded theory analysis has no predictive power for the general population of the users of the Library of Congress or any other large digital collection. Instead the interviews constitute raw material to develop a theory of the use in the context of emerging concepts of visual digital literacy. Such a theory may then generate testable hypotheses for future research.

## "Fields of Vision": A Model

Figure 1 is a graphic illustration of an emergent model of "Fields of Vision," an adaption of previous research findings by Paul Conway.[60] It is informed by a model of user types developed to supplement digitization guidelines constructed by the Colorado Digitization Project (CDP).[61] Both the original Conway and the CDP user categorization models envision user populations with discrete roles and with distinctive, rather than overlapping, characteristics and needs. The 1994 Conway model identified four clusters: scholars (including students), avocational researchers, professional researchers, and personal researchers. The CDP model of users includes five groups that are similar to those of the Conway model: scholars, students, hobbyists, business community, and casual users. The principal factors distinguishing the three clusters of experienced users in the "Fields of Vision" model are: group affiliation, the nature of the product(s) generated by the research, and the rigor of the methods employed in the research project. Figure 1 situates the seven interview participants on the model in terms of their location after the completion of the data analysis. The following sections of this article elaborate the meaning of the model, largely through the words of the participants in the seven in-depth case study interviews.

60 Paul Conway, *Partners in Research: Toward Enhanced Access to the Nation's Archive: A Report on the Users of the National Archives* (Pittsburgh, 1994).

61 Colorado Digitization Project (CDP) Advisory Council, *Market Segments and Their Information Needs* (Boulder, CO, January 1999).

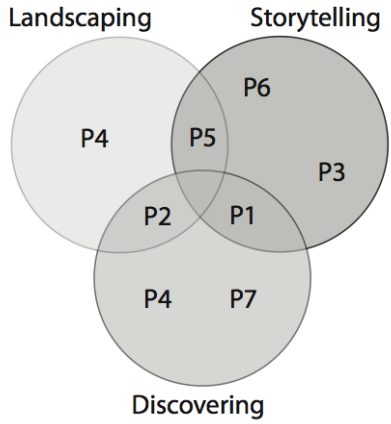


**Figure 1: "Fields of Vision": Graphic Model with Study Participants.**

***Fields of Vision: Discovering***

In the "Discovering" mode of investigation (Figure 2), users seek to obtain visual information from individual digitized photographs that has not been seen or noted previously. Two of the seven interview participants (P4, P7) could be characterized as working nearly exclusively in the Discovering mode. Two participants combine discovering with other modes of inquiry (P2, P1).

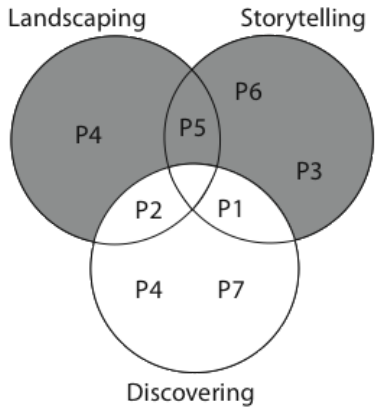


**Figure 2: "Fields of Vision": Discovering.**

Participant 7 (P7) is an exemplar of the Discovering mode of seeing. His work, and that of a small subset of passionate members of the Pictorial History Committee of the Society of American Baseball Research (SABR), is to find photographs of baseball players and to label accurately the individual player or players depicted in the photos. Under P7's leadership, the Pictorial History Committee has found photographic images of approximately 95 percent of the 17,000 major league baseball players through more than 150 years of American baseball history, a period that nearly completely overlaps with the history of film-based photography itself. P7 notes that only 605 major league players have no photograph associated with their names in the SABR database, which is available only to SABR's 7,000 dues-paying members.

SABR researchers are focused intensely on the identities of individual baseball players, rather than on the composition of a team: "Most of the time I won't use team photos. I'll use individual photos because that's what the user wants. I will use team photos if there's no other way to get a player's picture." The work involves painstaking comparison of individual photos. "The thing that is most important to us is recognition of faces. It's almost like forensic science, being able to compare one face and one photo with another face and another photo and match them up."

P7 frequently refers to the passion of his group of researchers, passion for baseball, certainly, and passion for identifying individual ballplayers. But passion does not necessarily lead to rigorous certainty about the truth of names or the quality of the images used to identify players: "The passion-person who wants like anything to get the last 605 photos doesn't care a whit about the quality of the picture. He's looking for the face. He doesn't care if the picture is of the player when he was 92 years old in the church directory." P7 believes that serving as an arbiter of accuracy is one of his most important contributions to the group project: "Is it part of my job as the middle guy to be a little bit dispassionate? I'm afraid so." But P7 is willing to take risks in the interests of community cohesion. "There are times that I will stretch and take a little bit of chance. So the word 'truth' almost gets into probability … I can say, 'Well I'm comfortable with 90 percent'. A lot of these people who are passionate are content with 70 or 75 percent right. It's not like they're off an awful lot of time but I have seen them stretch more than some of the other people."

In his role as a private researcher, Participant 4 (P4) is also a discoverer.[62] He relates the story of his selection of a particular photo based on its naturalistic composition; on probing, however, his emphasis shifts to the discovery of the person in the picture: a rare portrait by a master photographer, reproduced

62 Participant 4 (P4) appears in two places on the graph: as a private researcher working on a book (Discovering) and as a professional photo researcher working on for-hire projects (Landscaping).

in Figure 3. "Visually it's that Ben Shahn thing; kind of the visual equivalent of Woody Guthrie. It just comes across as so naturalistic and it just feels like breathing; it just feels like looking. The benches are so not arranged. All these background tones are just allowed to be themselves. The main thing here, though, is the content. She's important and this is the photograph of her from a period when there are not many photographs." Later in the interview, P4 tells another story about his close reading of the use of the same instrument by two different groups in a sequence of photos; the roots music equivalent to sharing cigarettes or a quart of beer. P4 constructs a story, but the discovery of the instrument is the motivating force, something he seemed to be looking for explicitly, when he stumbled on the insight of social bonding.

**Figure 3: Aunt Samantha Baumgarner, fiddler, banjoist, guitarist, North Carolina, Asheville, 1937** (http://hdl.loc.gov/loc.pnp/fsa.8a17155). Credit: LC-USF33-006257-M3, Library of Congress Prints and Photographs Division.

In the Discovering approach to digital visual literacy, new discoveries are judged and evaluated in the context of the community or communities within which the researcher shares information. Sometimes discoveries may be of general interest, but the communication of discoveries within the peer-group ("being the first one there") is the primary value. The technical requirements for discovery exaggerate the importance of very high resolution. For discoverers, a digital image of a historical photograph should resolve the grains of silver in the negative or print before pixilation sets in. Discovering may involve manipulating the image data to reveal visual information possibly hidden in high-density areas of the photograph. In the Discovering mode, the digitized photographic negative (digitized at a level that guarantees full information capture), is the ultimate source for discovering something new in the details revealed through zoom and juxtaposition. The material source lurks in the background – its presence confidently felt but rarely, if ever, embraced. The terms of production that surround the source artifacts are important elements in the interpretation of the digital object, but ultimately new knowledge is embedded within the digital image as a transcendent representation of the historical picture.

***Fields of Vision: Storytelling***

Users of digitized photographic archives in the "Storytelling" mode of inquiry (Figure 4) view individual images as centrepieces of intellectual puzzles that when assembled in just the right way tell stories visually, evoke an emotional reaction from the community within which the stories are shared, and/or supplement the textual historical record in substantive ways. Two of the seven interview participants (P3, P6) work primarily in the storytelling mode; one combines the discovering and storytelling modes to good effect (P1), while one combines storytelling and landscaping in a rich archival mix (P5).

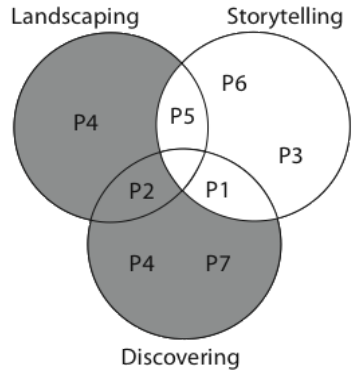


**Figure 4: "Fields of Vision": Storytelling.**

Participant 3 (P3) is a natural storyteller. He applies well tested methods of genealogical research to confirm the identities and family histories of children in Lewis Hine's photographs and then tracks down their descendents to report his findings: "The first child that I identified I found death records and I got an obituary and a photograph of another girl, unidentified by Hine. In Gastonia, North Carolina, I found a living nephew. And I called him up and I told him what I had…. He just said: 'Well I'm really, really excited that you sent me this picture. I'm even more excited to find out that the other girl in the picture is my mother'."

Although P3's approach resembles that of the scholar-historian, he turns historical inquiry and genealogy inside out by applying archival records to photographs that have likely never been glued into a family photo album, and then by connecting the past with the present in a direct, emotional way: "My initial objective was what any historian would want to do. Answer the question of what ever happened to that kid?" P3 expresses no interest in theory-driven, historical research: "History really is mostly memory either undocumented or documented. My work is all raw data. I'm simply presenting it. Let the behaviourists and historians take my information and do whatever they want with it.

You can interpret it anyway you want to. I'm not taking any position on this."

Yet, P3 does indeed make judgments about historical truth and public perception, past and present, as typified in his description of the photograph depicted in Figure 5. "Here's a picture of a couple kids picking tobacco in Kentucky and you say, 'Oh these poor kids are out in the hot sun picking tobacco,' and I find out that they own their own farm. This wasn't child labour. People in that part of Kentucky weren't very well off then, but nobody else was either. But the family grew up to be successful farmers. They were well educated. The school was closed at that time because in those days all the schools were closed when the harvest time came."

**Figure 5: Orie (left) and William Fugate, Hedges Station, Kentucky, 7 August 1916. Lewis Hine** (http://www.loc.gov/pictures/item/ncl2004004723/PP). Credit: LC-DIG-nclc-00448, Library of Congress Prints and Photographs Division.

In Storytelling mode, P3's choice of photographs for research privileges both the visual and emotional factors of the digitized representation. Technical issues associated with the digitized photo play a sometimes significant, but still secondary role in the decision to plunge into an investigation. P3 suggests that although the technical credibility of the digitization program of the Library of Congress is an important factor in the decision to use a photo, specific knowledge of digitization parameters or post-scan enhancement routines is not. "I think as long as the photograph does its job to draw you into it, I can overlook a clopped off corner or crack in it or a tear in it." P3 disdains

any cropping of the original image in presentation: "The fact that you can see the borders around it indicates that the whole photograph is in there. It's very important for me to know the whole photograph is there. Because there are a lot of things in that photograph that might be very important."

Another talented storyteller, but one who works in the print rather than the film medium, Participant 6 (P6) is a contract researcher who earns a living by constructing visual stories on themes established by her book publisher clients. Working with a senior editor, P6 chooses a small group of photographs for each book from the large corpus of a given photographer: "I don't want to duplicate what everybody else has published. What really dictates what I choose is the visual. I'm kind of going through and I'm taking things but I'm really looking at each one going, 'That's a great photo, that's a great photo, no that's not such a great one'. So I have so many concerns, sort of historical, personal, visual, and then ultimately it's what works best as a spread."

For P6, the "spread" involves exposing one or more narratives embedded in the mass of photographs arranged online roughly in the order taken but without an overt storyline: "Well, in these little books, where really the photos are the narrative, we're trying to provide provocative juxtapositions that show something about the time, about the photographer, or just visually make your eye sort of invest itself in the image. It's really about people affected in a desperate time, and it's a lot about small communities coming together. So I have stories to tell and there's lots of different ways to tell them and this is very subjective."

The visual storyline envisioned for the end product determines the appearance of the reproduced photographs. The publisher may impose a visual style or visually edit the individual sources. "We have improved some things; like blemishes that have been softened or taken out because they actually distract from the print. We're cropping out the border that was on the negative and sometimes there was a Kodak number that was really close to the trim of the image and we cropped those out because those are really distracting. But if you go online [to the Library of Congress] you see the border and the writing." The editors of the volumes are responsible for establishing the tone and appearance of the photographs. "Every once in a while I will suggest a radical crop like using a detail of an image just because, frankly, it would look better cropped and these are public domain and so we take a little license."

P6 also expressed concern about the archival gap that online access creates between the user, and the structures and contexts of the original source files. "I think the danger with online is that you don't always have context; if you haven't studied history you're just getting stuff and it's being shown out of context. On the other hand it's available and that's pretty awesome and then anyone interested may … manipulate these images or take them and use them in a way that's just totally bizarre. So that is a danger."

But there is little to be done, it seems, when the user of the digital archive

functions as the intermediate between the collection and a publisher or producer who may have an explicit vision of the end product. P6 is lucid about the tension between screen and print: "I never really trust the online file until I see a proof, a printed proof. Because I work in the print medium, the screen lies no matter what it is. It's just a total lie. And this [book] is a total lie too, but this is a lie I have to make perfect. We really worked on this to get these photos to look like this. They probably never looked so good when Ben Shahn took them."

Storytellers may pursue their work from a scholarly, occupational, or avocational perspective, or some combination of these three categories of experts. As the object of digital visual literacy, the image as a whole is the fundamental unit of analysis, rather than the details of any particular piece of the image. Composition and the emotional resonance of the subject matter as represented digitally take precedence over either the artifactual values of the original object or the explicit technical characteristics of the digital image. Cropping the borders of an original photograph in the process of digital conversion diminishes the value of an image more seriously than any other technical characteristic.

***Fields of Vision: Discovering / Storytelling***

In one case study (Figure 6), the participant deeply integrates the perspectives of discovering and storytelling. For Participant 1 (P1) what appears on the surface to be decision making based on the drive to make visual discoveries, yields on closer inspection to a richer mix of other motives. The challenge for P1's project is identifying images that offer new discoveries, and then contextualizing these photos with illustrations that accumulate to new and convincing stories of the photographers of the American Civil War.

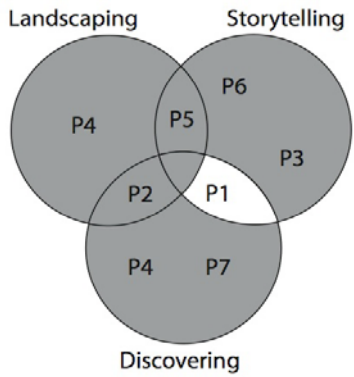


**Figure 6: "Fields of Vision": Discovering / Storytelling.**

P1 appears to be primarily motivated by the power of discovering hidden or previously unseen visual content in Civil War stereographs.[63] By way of example, Figure 7 reproduces a photograph taken by George Bernard in Union-occupied Atlanta: "This is one of the more famous Atlanta pictures. It's just a wonderful scene; the smoke coming off the buildings, the Union camp. My Atlanta friends consider this to be one of their favourites. But nobody ever bothered to ask, "What are these guys doing?" P1 and his community of photograph analysts speculate that bored troops are ogling bawdy photos through a four-person, portable stereo viewer set up in the middle of the street. The story P1 tells shows his passion for discovery as a vehicle for storytelling within distinctive communities of like-minded experts.


**Figure 7: Atlanta, Ga. Soldiers on boxcars at railroad depot, 1864** (http://hdl.loc.gov/loc.pnp/cwpb.02216). Credit: LC-DIG-cwpb-02216/02217/LC-B8171-2709, Library of Congress Prints and Photographs Division.

63 Through the 4.5 hour interview, P1 used the word "discovery" and its variants a total of forty times: 1 – discover; 7 – discovered; 9 – discovers; 1 – discovering; 22 – discovery + synonyms.

P1 relates another lengthy story about the power of knowledge embedded in original camera negatives that can only be extracted through high-resolution digitization: Figure 8 reproduces one of the objects of P1's imagination. "It's a really cool discovery. First of all just as a matter of interest, it's a pretty boring photograph, right? Fort Harrison on the Richmond Line, in the Bermuda Hundred area. Here's some smoke coming out of a little smoke stack. But what's really cool about this picture – it's one of the rare Civil War photos where you can see the picket stations, the far advanced spots and soldiers sitting in them. This is not an active battlefront, but this is a live front and a battle could have happened at any moment. People are on alert for this to happen because just on the other side of these woods you can see the Confederates, their tent, and this is their earthen fort and the Confederates up on top of the parapet, with Union picket lines just that close. And to me that's a wonderful, beautiful example of why this digitization project has added so much value and knowledge to our understanding of what's really in these pictures."

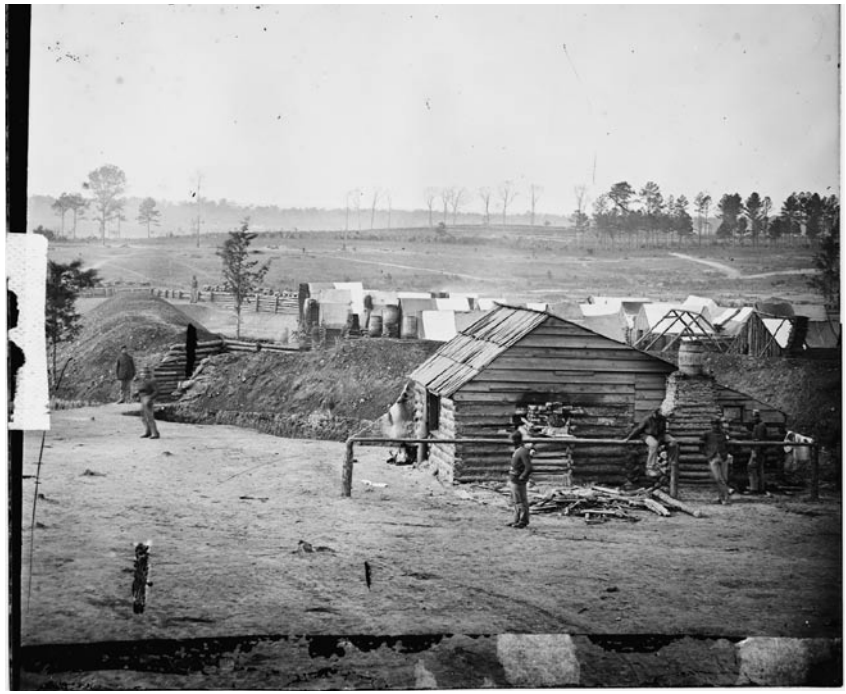

**Figure 8: Chapin's Bluff, Virginia, 1864** (http://hdl.loc.gov/loc.pnp/cwpb.01950). Credit: LC-DIG-vwpb-01950/01949, Library of Congress Prints and Photographs Division.

In the context of digital visual literacy, the combination of discovering and storytelling is a strategy whereby a narrative emerges from finding connections among discrete images. The decisions to select certain photographs for a particular project extends beyond the motivation of simple discovery to the illustration of a story, to discovery of new storylines derived from multi-image juxtapositions rather than individual detail, to reporting on new information about the context or circumstances of creation of individual photographs. Discovery of new evidence to support a story is the classic example of evidential and informational values in archives, and how a variety of disciplines mine archives for new evidence or new ways to assemble existing evidence. So in this way Discovering / Storytelling enacts thought processes that are similar in character to the ways academics use traditional archival resources. This mode differs, however, from formal, academic research; formal theories are rarely, if ever, made explicit in the world view of the user. In fact, in the Discovering / Storytelling mode, any theory that might exist is incorporated into the goal of storytelling on a number of levels: storytelling about the process of photographing a scene; storytelling to set the record straight regarding the origins, organization, and disposition of the photographs; or storytelling to reconstruct the historical event itself.

***Fields of Vision: Landscaping***

In the "Landscaping" mode experienced users view digitized photographs as a window on historical space and time (Figure 9). Digitized photographs may serve primarily as mnemonic devices, as illustrations for a primarily textual narrative, or as a lens on events and activities that took place beyond the view of the camera itself. One of the seven interview participants (P4) works exclusively in the Landscaping mode in the role of contract researcher, while two participants combine landscaping with either storytelling (P5) or discovering (P2).

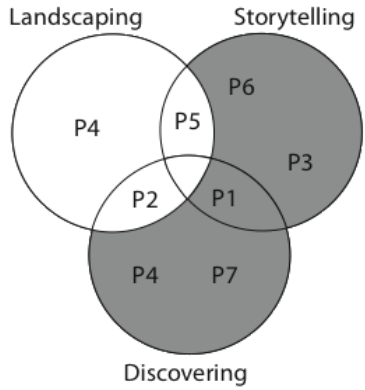


**Figure 9: "Fields of Vision": Landscaping.**

Participant 4 (P4)[64] is particularly interested in the power of evidential information embedded in individual photographs and, perhaps more strikingly, in a sequence of photographs taken of a single scene. "One of the things that I think is really exciting about historical photographs is the unintended historical record as well as the intended one … People have this idea about how photographs lie, but compared to words there's no contest. The word is not the ultimate truth. Photographs are so much more reliable and they're so much more neutral." By way of an example (Figure 10), P4 relates the collective biography of Salvation Army musicians who appear as distinct individuals in a sequence of photographic portraits but who, upon deeper research, are united through marriages and their involvement in the San Francisco music scene during the Great Depression. "Photographs can be useful evidence or clues in the ways that words are not – particularly as it hits the digital age. There's this very exciting thing where the digital world and living memory can intersect."

**Figure 10: Solo. Salvation Army, San Francisco, 1939** (http://hdl.loc.gov/loc.pnp/fsa.8b33286). Credit: LC-USF34-T01-019253-C, Library of Congress Prints and Photographs Division.

P4's view of historical truth varies according to the nature of the project. For personal projects, P4 holds himself accountable for the accuracy, integrity, and reliability of his findings. For commercial film projects, his interest is in satisfying the client and getting the job done efficiently, rather than on influencing the shape of the final commercial product. "Sometimes I'll get brought into a project after the initial research is done. And they'll give the summary show to me and say, 'How can we do this cheaper'? So I'll either swap out commercial footage or stills, because I know that the same content is available from a public source. Maybe we can't get this exact shot but I can get something similar or something even better."

P4's approach to contextual landscaping benefits from tapping into the power of the numbering sequences assigned by the FSA staff to the negatives that are preserved in the cataloguing and display interface of the Library of Congress. "It's a matter of the numbers assigned [to the negatives]. You get this social context of what's going on all around them and you get information

64 See note 62 above.

of how the photographer traveled. Sometimes it's implicit and it needs to be checked against other things because the sequence isn't perfect." P4 displays the characteristics of the Landscaping mode of visual inquiry, but the reach of his inquiry is much narrower than others who fit this mode. His interest in storytelling does not extend to the individuals pictured but rather to the overall puzzle he is trying to solve.

P4's critique of his own intellectual practices runs deep, extending from the pressure of contract research to the ethics of public history: "You know it's funny with TV shows or even films, you usually just don't have the time or money or attention to do a really thorough job." Later, P4 expanded his criticism: "Very few people in the historical documentary business are very interested in history and even if they are they're not very interested in doing archival work…. There's not a great passion on the part of producers and production companies for historical material." When asked what the interests of TV producers are, P4 replied: "Making TV shows. It took me a while to understand that. But even if they are interested in history they usually don't want to mess with archival material. Archives are often referred to as 'wallpaper'. You have to put in a certain amount of 'archival' for a historical show."

From the perspective of digital visual literacy, the Landscaping mode of inquiry privileges the context of the photograph and/or its sequence of creation over either visual composition or any particular details evident in the photographs themselves. Formal histories that treat photographic evidence as a point of departure for an archival, record-based inquiry share the Landscaping mode with research that may be focused on the social environment of the photographers, or their particular working methods. For landscapers, the source of the digital image (original negative, print, intermediate) is often secondary to the visual and technical context of multiple images. The technical characteristics of the digital images become significant only at the point of creating a product whose technical requirements are strict. For example, a user may only notice or care about the characteristics of the image when negotiating a book contract or transferring images for use in a documentary film.

### *Fields of Vision: Landscaping / Storytelling*

Participant 5's (P5) approach to using visual resources in digital form is a very strong example of the intersection of the Landscaping and the Storytelling modes (Figure 11). For her biography of Russell Lee, P5 expressed three overall goals that exist for the reader at the intersection of Storytelling and the archival sophistication of Landscaping: "The first thing I want to do is to take his best known photographs and finally put them into the original context of their creation. Each chapter is a stepping stone to tell the stories of his best known photographs. My second goal is to show Lee photographs that maybe people don't know but the story behind them is interesting. Lee has been over-

looked because he was so prolific; it is a daunting task to really tell his story. My ultimate goal would be for someone to be able to look at a Russell Lee photograph, see where it was taken and approximately when, and with my book as a guide know pretty much why he took it."

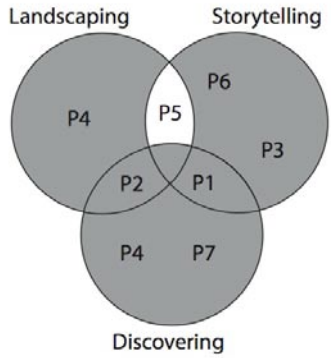


**Figure 11: "Fields of Vision": Landscaping / Storytelling.**

As opposed to both P4 and P6, whose decision making is tied directly to the publisher's view of the final product, P5 views in-depth research and the decisions to include or not include images in a project quite distinctly from the processes of producing the final product. The tools that deliver interpretable, visual content are separate from those needed to publish a book. As P5 stated, "I firmly believe that the reader doesn't have to know everything, but I do. You can tell if you read something that somebody's written, when they really don't know any more than what they wrote. But with good storytelling you know that they know more. You're putting some pieces together for the reader in a way you think might be good for the reader to hear."

In practice, P5 considers the larger context of the storytelling. Here she explains her rationale for using the photograph reproduced in Figure 12: "Well my decision to include this picture in the book is twofold – not just because it's an interesting image but because Russell Lee photographed something that was wholly unconnected to his assignment. Russell Lee was not one to use government film on government time photographing something like this. And this really told me a lot about his relationship with the Farm Security Administration (FSA), which sent me off in a different direction just because this was online. And I would have never been able to access this in the file prints."


**Figure 12: Hair tonic salesman advertising his wares, 1936** (http://hdl.loc.gov/loc.pnp/fsa.8a21070). Credit: LC-DIG-fsa-8a21070/LC-USF33-011012-M2, Library of Congress Prints and Photographs Division.

P5's work on Russell Lee led her to contextualize Lee's photographic output through reference to the surviving archival record of his work and that of his FSA associates: "I started with the correspondence and I did all of the interviews with the people as opportunity came up. I got all of Lee's captions. At Texas State, his personal papers were really helpful because they had some of his early field notebooks. I went to the Archives of American Art and I copied every interview with every FSA related person … And then after I got through reading through all the correspondence I thought, 'I can reconstruct exactly where Russell Lee was every single month that he worked for the FSA … From the captions, this is what he was photographing, from the correspondence, this is what he was writing and where he was. In putting the three of them together I was able to construct his working methods'."

***Fields of Vision: Landscaping / Discovering***

At the intersection of Landscaping and Discovering (Figure 13), Participant 2 (P2) provides direct evidence for the importance of understanding the relationship between the visual details in a digitized photograph and the critically important contextual information that resides beyond an individual image – either the context provided by the juxtaposition of multiple photographs or the socio-political context within which the photograph was created and

initially preserved. "I think I have a fairly intuitive approach to looking at the images for the content that's in the frame. And often times that means looking at what's going on outside of the frame. I don't just look at the photographs individually but I look at them as an entire collection and the power they hold there." She extracts information from the photo albums and deeply contextualizes that information in order to test one or more hypotheses. She is exploring how the very creation and existence of the albums projected colonial power: "There is a definite progression that the Russians were trying to achieve in the way that they compiled the albums beginning with archeology, going next to ethnography, third going to trades or industries and then ending with history. This progression is a chronology of conquest that the Russians were very conscientious about representing and re-representing in the photographs."

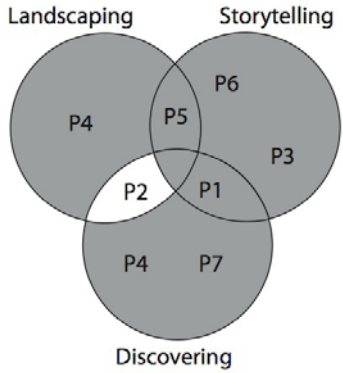


**Figure 13: "Fields of Vision": Landscaping / Discovering.**

As an example of how external context informs the interpretation of a digitized photograph, P2 highlights an image from the second part of a two-part album of ethnographic photographs, reproduced as Figure 14. "It's a horse bazaar. What I like about this picture is that it's less about the digital than all the content in the photograph itself. I'm selecting images that convey culturally particular aspects that the Russians seem to be honing in on; horse bazaars are ancient in Central Asia. But this one is also political because the Russians were very interested in keeping up their cavalry. So they might be conveying not just an ancient industrial commercial practice of central Asians but also that they're deeply invested in controlling the land."

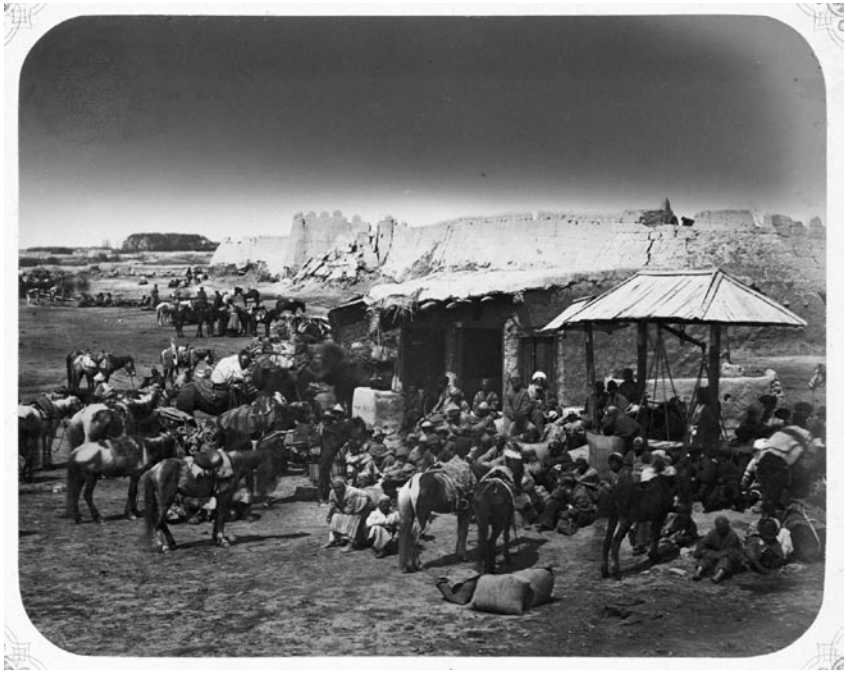

**Figure 14: Syr Darya oblast. Aulie Ata. Horse bazaar, 1872. *Turkestan Album*, Part 2, vol. 2, pl. 103, image no. 323** (http://www.loc.gov/pictures/item/2007680459). Credit: LC-DIG-ppmsca-14755, Library of Congress Prints and Photographs Division.

The combination of Landscaping and Discovering is often explicitly geospatial and temporal in nature. The first of these natures is the way that individual images were used beyond their publication in the albums themselves (e.g., the re-publication of an etching from one photo to illustrate a magazine article two years after the production of the original album). Even more explicitly geospatial is P2's effort to plot the creation of individual photographs to a contemporary map of Turkistan: "In terms of the more visually explicit inquiry in the albums, is the sequencing of images to show their movement from say a city in Southern Kazakhstan, and then they move to the next city and they take photographs, and then move to the next city, and it's literally spatial movement along an itinerary that was military lined."

P2 is also aware of the socio-cultural significance of small elements in a given image. While describing a photograph taken in Central Asia in 1867,[65]

65 *[Editor's note: although the participant was able to show the researchers this photo, it has not been digitized for public consumption and could not be reproduced in the article.]*

she comments: "there are details in this that you need a magnifier to see; but you see a man right there in white, he is the military general, the Russian military general. All these buildings right here[,] which are half completed have been whitewashed and this is a sign of Russian military occupation so they've turned into barracks and administrative zones. You see the guys walking up, not so busy over here, but they come up to the hill where the Citadel front has been whitewashed again to show Russian presence and they've seized the hill. There's a little tiny dot right here; it's an umbrella and it's a Russian sentry standing. And also it gets even better on this image; it's really hard to see, again you need magnifiers, it's either that black dot or that black dot, it's a guy with a camera, so what's really great is that it's informing me that these guys had more than one photo apparatus in the field."

In another example, reproduced in Figure 15, P2 draws on comprehensive knowledge of Russian colonial behaviour to make sense out of a photograph with obscure and even contradictory visual information. "It definitely pays to know the history of the region and the terminology. One image that I like is of a steamboat and all the caption says is the name of the steamboat which is named after a previous governor general. But you see the steamboat and you see all the Russian officers on it. But sometimes with their clothing and their dark faces – because they've all been suntanned – it's like you don't know if they're native people or Russian. But they're all Russian because of their uniforms. Steamboats were one of the major ways of colonizing areas; it's odd to find a steamboat in Central Asia but they did have a few. But you kind of have to look and see. Again you have to know the nineteenth century."

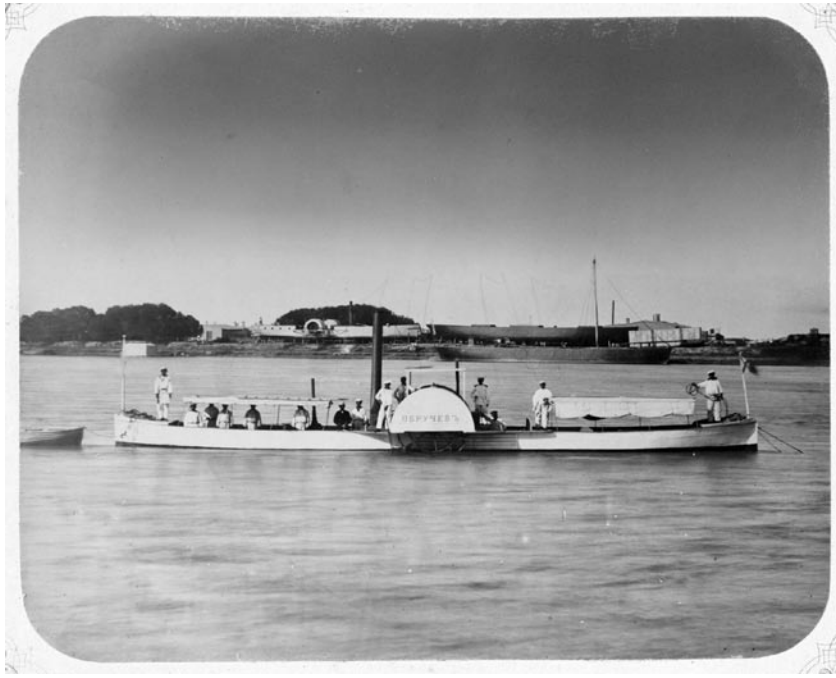

**Figure 15: Syr Darya oblast. Kazalinsk. Pier of the Aralsk flotilla, 1872. *Turkestan Album,* Part 2, vol. 2, pl. 93, image no. 307** (http://www.loc.gov/pictures/item/2007680448). Credit: LC-DIG-ppmsca-14744, Library of Congress Prints and Photographs Division.

**Implications for Digital Visual Literacy and Archival Thought**

"Fields of Vision" contributes to the ongoing exploration of "digital visual literacy" within and beyond the archival scholarly community. Because proponents of this emerging concept have largely focused on the process of teaching visual literacy, much of the literature on the subject has been preoccupied with the outlining of digital media pedagogy or the development of skill sets that help students to understand or critically "read" digital messages. These efforts involve the creation of teaching modules to develop specific skills, testing methods on groups, or creating a checklist of skills that a visually literate person might possess. Since these endeavours have focused on the application of methods by students largely working in the classroom, little discussion has been devoted to the contemporary skills and experiences of the users of visual resources. The approach to this point has been top down, in which teachers identify the hallmarks of skill and extract working definitions from student experience.

Our project proceeds from the bottom up. Our approach has been to

examine the practices of experienced users of digital visual materials as they perform their tasks. We show that we can learn from the in-depth engagement with users of visual archives and use this new knowledge to derive a model from their interaction with digitized images; in this approach, pedagogy derives from a user-oriented perspective, rather than one driven by the material properties of archives. The model emerges from a grounded theory analysis of interview and fieldwork data. It provides a nuanced characterization of users of digitized images from the vantage point of actual use, as articulated by primary users of visual images online. The grounded theory approach exposes details of the user experience that are not necessarily captured when theorists focus on a holistic definition of digital visual literacy.

While the findings of the study may be seen to point conclusively toward a vision of a greater dependence on digitized images by experienced visual researchers, they should not be seen as a prescription to discard original archival photographs in analogue format. Our research examined a select group of users utilizing digital images, but we did not conceive the project as a comparative study of the relative usefulness of analogue versus digital visual artifacts. Thus, the research provides insight on the interaction, interpretation, or use of digitized images, but only in partial reference to the existence of original source materials.

Of the three approaches to visual inquiry proposed in the "Fields of Vision" model, experienced users in the Discovering approach are tied the least to source photographs for evidence and most attracted to the power of digital transformation. In the Discovering approach, the digitized photographic negative – digitized at a level that approximates full information capture – is the ultimate source for discovering something new in the details revealed through zoom and juxtaposition. The material source lurks in the background – its presence confidently felt but rarely, if ever, embraced. The terms of production that surround the source artifacts are important elements in the interpretation of the digital object, but ultimately, new knowledge is embedded within the digital image as a transcendent representation of the historical picture.

The Landscaping approach to visual meaning making, places the greatest potential value in the original source, viewing the digital surrogate as but one – albeit easily accessible – piece of evidence for juxtaposition with other archival resources required to address a compelling hypothesis. Experienced landscapers tend to favour the original photographs over their digital reproduction for purposes of study and interpretation. They embrace the dominance of the physical artifact as a true, cultural representation. Two of the three landscapers in the study hold out the possibility that improvements in digital representation technologies may increasingly render the original obsolete for most purposes. And yet landscapers return to the original sources for details, in appreciation of their aesthetic qualities, and because of the specific

limitations of the digital product (e.g., lack of sufficient resolution for exploring details within the individual images, excessive cropping, poor navigation at the interface level, and inflexible internal tools). But the issues concerning internal structure and navigation that are most compellingly seen in digitized photograph albums could well apply to other complex information sources, particularly heterogeneous archive and manuscript collections that are not organized or bound by the conventions of publishing.

Four of the seven participants in the study are nearly totally dependent on the online availability of digitized visual records. One of the most distinctive aspects of three of the four experienced Storytelling participants in the study is their near complete lack of need, interest, or desire to handle the original photographs that form the emotional centrepieces of their projects. Two of the four participants who demonstrate the Storytelling approach to inquiry are contract researchers. By choice or through a desire for efficiency, they privilege archival material that is available online as full content or that is described well enough online that digital copies can be ordered. Although these two participants focus their energy on resources that are available in digital formats, both express concerns about the archival gap that online access creates between the user, and the structures and contexts of the original source files.

For the two participants who have the strongest affinity for the evidential value of the photographic artifact, using and handling original photographs is a fundamental component of understanding, although neither the original photograph nor its digital surrogate alone is sufficient to meet their needs. A nuanced view of the relationship between original objects (especially their original arrangement and uses) raises questions about the viability of working in an all-digital environment at a scale represented by the Library of Congress collections – particularly given the limitations in the current generation of technologies to convey the context of archival records as they become individual, digital objects in a database. A reliance on online information resources carries the risk that once-dependable access may prove as ephemeral as the physical evidence left behind in the digitization process. A pressing question for archivists who continue to transform photographic artifacts into digitized "ephemeral ghosts" is how the users of image archives manifest visual literacy in practice.

Leading visual scholars have expressed confidence that the integrity of images can survive multiple material transformations and that digitization has the potential to transform our experience of photographs as we encounter them in new spaces. For users accustomed to online access to visual resources, digitized images are not mere copies, but are often regarded as better versions of their originals and as artifacts in their own right. "Maybe, caught in the dichotomy of 'real' and 'virtual'," writes Elizabeth Edwards, "we are confusing and conflating different appropriateness, different sets of question and different

needs."[66] Largely unthreatened by digital surrogacy, Edwards challenges visual scholars, including image archivists, to reckon the various contexts for which images are accessed, used, and interpreted. The user-centred theory developed in the "Fields of Vision" model reinforces and augments Edwards's assertions about the transference of meaning from artifact to surrogate through the reproduction process. Our research confirms that users of digitized images do in fact utilize various approaches to inquire of, interpret, and understand images, depending on the methods they wish to employ, the project they wish to accomplish, or the knowledge they hope to create. By providing richer details, drawn from actual experience, we provide empirical evidence for concepts previously suspected or only theorized. Something is always left behind (the "ephemeral ghost?") in the process of digitization, but the fundamental meaning of the source photograph persists. Indeed, digitization may add more value than it takes away, leading to a net gain for the user.

## Conclusion

When we explore the use of digitized photographs through the eyes of experienced users, we find variation among them in the way they understand photographic representation in time and space. The "Fields of Vision" model is a useful framework for archivists, as it provides a richer and textured way to conceptualize users of digitized photographic collections; digital images are not merely surrogates of "real" artifacts, nor are the users portrayed as information-seeking agents constrained in a play of image retrieval. What we see are users comfortable and confident in utilizing digital images and in deriving meaning from them.

The research reported here demonstrates that for experienced users, digital images are not simply a new mode of delivering visual representations to users. Digital surrogacy enables users to find new interpretations, or to create and articulate new levels of visual meaning. This is perhaps where digital visual literacy intersects with archival thought. Digital visual literacy is a fundamental component of the archival perspective not simply because understanding users is a necessary precondition for improving archival practices. Investigating digital visual literacy from the user perspective offers a profound insight into the nature of the digitized photographic record itself. In the three distinctive but overlapping "Fields of Vision," experienced users demonstrate a deep understanding of the informational and evidential properties of the visual record, even if they are largely incapable of, and uninterested in, utilizing the terminology of the archival field itself.

The "Fields of Vision" model merits further research to extend its theo-

66 Edwards, "Photographs and History," pp. 30–31.

retical implications and to apply the findings in archival practice. For example, researchers might apply the model to user experiences of other digital representations in visual archives including digitized maps or manuscripts. Another task could be to situate how this conceptual framework can illuminate the archival nature of digital surrogates in comparison to the values of original photographic sources. The model might be implemented in archival practice, for instance, to enable reference archivists to map out their users' needs for images, or perhaps in designing interfaces for image databases or websites, or in crafting policy papers for digitization. Ultimately, we hope that the model demonstrates a renewed commitment to understanding the perspectives that the users of visual archives bring to their work: by learning from their ways and knowledge, archivists can be better guided and improve practices and theories.

In examining the terms of debate on the construction of the idea of the visual, Joan Schwartz states that, "the poetics of archives are shaped or reconstituted through social conventions and discursive practices."[67] In the way that scholars discuss variations on the core construct of "visual literacy" as it applies to archival actions, decisions, and theoretical explorations, there is a tendency to treat archival users and their imagined needs as a monolithic whole. Rarely distinguished are the particular voices of archival users, how these users interact with archival images, and how archival mediation and digital remediation affect understanding and use of historical images kept in archives. As a theoretical construct, the application of visual literacy in archives must be continually re-examined and considered against the ever-changing terrains of the field. The research reported here argues that the poetics of archives is not an exclusive, discursive mandate of archives and archivists but is co-constituted with users of archives.

67 Schwartz, "We Make Our Tools and Our Tools Make Us," p. 61.