Digitizing Photographs:
Exploring the Relationship Between Building and Using Image Digital Archives

Paul Conway

University of Michigan

Context of Research

- 15 years of digitizing photographs
- Very little evaluation of products(Saracevic 2005)
- Even less attention to impact on users (Borgman 2003)
- Increasing scale of efforts(e.g., Erway 2007)

Ongoing Research Project

- National Science Foundation (#IIS-0733279)

- *Beyond Image Retrieval: Bridging Digitization Processes and End-User Judgments*

- Exploring how users assess quality, integrity, and value [relevance] in digitized collections of photographs

- Exploring how to study the relationship between digitization and user judgments

Theoretical Contexts

- Digitization beyond copying
  - Conway, Rothenberg, Sassoon, Schwartz, Withers
- Representation, equivalence, remediation
  - Mitchell, Sutton, Bolter and Grusin
- Archival representation [description]
  - Yakel, Duff, Harris
- Agency and intent
  - Cook, Kaplan, Nesmith, Blouin, Hedstrom
- Visual studies [and literacy]
  - Elkins, Mifflin, Koltrun

Hypotheses

- Community digitization guidelines telegraph archival rendering intent

- Digitization practices demonstrate agency

- Photographic representation embeds archival values

- Some archival values influence use more than others

Research Model

Sites	Modalities		
	Technological	*Compositional*	*Social*
Production	• Scanning and post-production processes	• Genre or (uneasy) classification • Purpose for production of originals	• Purposes of digital archive • Social aspects of original sources [photographer]
Image [itself]	• Image quality • Rendering mode	• Image content and subject matter	• Cultural or social impact of image and surrogate
Audiencing	• Juxtaposition, context, interface(s) • User judgment technical values	• User interpretation of meaning • User assessment of archival values	• Visual objects as commodities • Physical and social conditions motivating use

Adapted from: Rose (2007) *Visual Methodologies*

Photograph Digitization Guidelines

- What is a digitization guideline?
- 19 core documents [from 95 possibilities]
- Five recent documents of particular interest
  - National Archives 2004
  - California Digital Library 2005
  - Library of Congress 2006
  - North Carolina ECHO 2007
  - Collaborative Digitization Project 2008
- Most digitization projects use guidelines.

Methodologies

- This study:
  - Based on model rendering framework [adapted from Frey/Reilly]
  - Textual analysis of photo digitization guidelines
  - Assessment of re-presentation practices

- Related analyses
  - Network analysis of influences (Conway 2008)
  - Study of user judgments (forthcoming)

Re-presentation Framework

Artifact Integrity

	Reality	**Vision**
Now	**As Is** [Effects of time and use are evident] • No post processing • Raw scan or match to original item	**As Intended** [Appearance of intended product approximated] • Tone /color enhancement • Polarity shift [negatives]
Then	**As Was** [Appearance of source media at time of creation] • Tone / color correction • Blemish removal	**As Imagined** [Content of image takes precedent over media] • No border • Cropping

Ageing (row label spanning Now/Then)

Adapted from: Frey & Reilly (1999) *Digital Imaging for Photograph Collections*

Textual Analysis (1)

Decision Options in Digitization Guidelines

Decision	Coding	NARA04	CDL05	LOC06	NCECHO07	CDP08
Selection Challenges						
User focus	0/1/2	0	0	1	2	2
Workflow Complexity						
Impl/Expl/0	0/1/2	2	0	1	2	1
Decision Making						
Impl/Expl/0	0/1/2	2	0	1	1	2
Total (of 6)		4	0	3	5	5

Textual Analysis (2)

Re: Technical Specifications

- Uncertainty about what a preservation master is (raw or matched to original)

- Internal debate over the relationship of the (unseen) master and (seen) derivative

- Extent of and impact of scanner-operator intervention

Re-Presentation Practices
[Sample of LC/OAC; n = 3255 images]

		Artifact Integrity					
		Reality			**Vision**		
Ageing	**Now**	***As Is***			***As Intended***		
			TIFF	**Zoom**		**Tone**	**Polarity**
		OAC	4%	1%	OAC	4%	14%
		AmMem	53%	1%	AmMem	5%	33%
	Then	*As Was*			*As Imagined*		
			Targets	**Blemish**		**No Border**	**Segment**
		OAC	13%	0%	OAC	76%	9%
		AmMem	2%	0%	AmMem	26%	2%

Tentative Conclusions

- Inconsistency of re-presentation
- De-valuing the digital
- Communication of materiality (aura)
- Original (analog) vs. new original (digital)

- Does any of this matter to users?
- Judgments of experts regarding relevance of image values beyond relevance of content.

Next Steps

- Conduct in depth interviews with highly expert users to deconstruct decision making
- Survey the application of guidelines in practice
  - Consistency, variation, discourse
- Controlled experiments on cause and effect
- Larger project to expose significant variation in user judgments

Implications of Research

- Advancing a theory of archival representation in image collections
- Engaging the work of digital humanists
- User orientation bridges preservation & access
- Consensus development on process standards

Five Photo Digitization Guidelines

- **NARA 04:** Puglia, Steven, Jeffrey Reed, and Erin Rhodes. *Technical Guidelines for Digitizing Archival Materials for Electronic Access: Creation of Production Master Files – Raster Images.* Washington, DC: National Archives and Records Administration, 2004. http://www.archives.gov/research/arc/digitizing-archival-materials.html

- **CDL 05:** California Digital Library. *CDL Guidelines for Digital Images,* 2005. http://www.cdlib.org/inside/diglib/guidelines/bpgimages/cdl_gdi_v2.pdf

- **LOC 06:** Library of Congress. *Library of Congress Technical Standards for Digital Conversion of Text and Graphic Materials,* Dec 2006. http://memory.loc.gov/ammem/about/techIn.html

- **Ncecho 07:** North Carolina ECHO. *Guidelines for Digitization.* Edited by Katherine M. Wisser. 2007 Edition. http://www.ncecho.org/guide/toc.html

- **CDP 08:** *BCR's CDP Digital Imaging Best Practices Version 2.0*, Aurora, CO: BCR-Bibliographic Research Center, June 2008. http://www.bcr.org/cdp/best/digital-imaging-bp.pdf

References (1)

- Blouin, Francis X. and William G. Rosenberg. [eds.] (2006) *Archives, Documentation, and Institutions of Social Memory: Essays from the Sawyer Seminar.* Ann Arbor: University of Michigan Press, p. 85.

- Bolter, Jay David and Richard Grusin. (2000) *Remediation: Understanding New Media.* Cambridge: MIT Press.

- Borgman, Christine. (2003) *From Gutenberg to the Global Information Infrastructure: Access to Information in the Networked World.* Cambridge: MIT Press.

- Conway, Paul. (2008) "Best Practices for Digitizing Photographs: A Network Analysis of Influences," *Proceedings of Archiving 2008, Bern, Switzerland*. Washington: IS&T.

- Cook, Terry. (2001) "Fashionable Nonsense or Professional Rebirth: Postmodernism and the Practice of Archives," *Archivaria* 51 (Spring): 14-35.

- Duff, Wendy M. and Verne Harris. (2002) "Stories and Names: Archival Description and Narrating Records and Constructing Meanings." *Archival Science* 2 (September).

- Elkins, James. (2003) *Visual Studies: A Skeptical Introduction.* New York: Routledge.

- Erway, Ricky and Jennifer Schaffner. (2007) *Shifting Gears: Gearing Up to Get into the Flow.* Dublin, OH: OCLC Programs and Services.

References (2)

- Frey, Franziska S. and James M. Reilly. (1999) *Digital Imaging for Photographic Collections: Foundations for Technical Standards.* Rochester: Image Permanence Institute, pp. 28-29.

- Hedstrom, Margaret. (2002) "Archives, Memory, and Interfaces with the Past." *Archival Science* 2: 21-43.

- Kaplan, Elisabeth. (2002) "'Many Paths to Partial Truths': Archives, Anthropology, and the Power of Representation," *Archival Science* 2 (September).

- Koltrun, Lilly. (2000) "The Promise and Threat of Digital Options in an Archival Age," *Archivaria* 47: 114-35.

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

- Mitchell, W.J.T. (2003) "The Work of Art in the Age of Biocybernetic Reproduction," *Modernism/modernity* 10 (3): 481-500.

- Nesmith, Tom. (2002) "Seeing Archives: Postmodernism and the Changing Intellectual Place of Archives," *American Archivist* 65 (Spring/Summer): 24-41.

- Rose, Gillian. (2007) *Visual Methodologies.* 2nd Ed. Thousand Oaks: Sage.

References (3)

- Rothenberg, David. (1993) *Hand's End: Technology and the Limits of Nature.* Berkeley: University of California Press.

- Saracevic, Tefko. (2004) "How were digital libraries evaluated?" Paper first presented at the DELOS WP7 Workshop on the Evaluation of Digital Libraries.

- Sassoon, Joanna, (2004) "Photographic Materiality in the Age of Digital Reproduction," In Edwards, Elizabeth, *Photographs, Objects, Histories,* edited by Elizabeth Edwards. London: Routledge, pp. .

- Schwartz, Joan M. (1997) "'We make our tools and our tools make us': Lessons from Photographs for the Practice, Politics, and Poetics of Diplomatics," *Archivaria* 40: 40-74.

- Schwartz, Joan M. (2000) "'Records of Simple Truth and Precision:' Photography, Archives, and the Illusion of Control," *Archivaria* 50 (Fall): 1-41.

- Sutton, Damian. (2007) "Real Photography," in *The State of the Real: Aesthetics in the Digital Age*, Edited by Damian Sutton, Susan Brind, and Ray McKenzie. London: I. B. Taurus, pp. 162-171.

- Withers, Carl and Andrew Grout. (2006) "Authority in Space?: Creating a Digital Web-based Map Archive," *Archivaria* 61 (Spring).

- Yakel, Elizabeth. (2003) "Archival Representation," *Archival Science* 3 (1): 1-25.

Paul Conway

Associate Professor

School of Information

University of Michigan

pconway@umich.edu

Thank you for your attention.