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## Picture-Work

### How Libraries, Museums, and Stock Agencies Launched a New Image Economy

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# NOTES

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## PROLOGUE

1. Flora Miller Biddle, *The Whitney Women and the Museum They Made* (New York: Arcade Publishing, 1999), 228.

## INTRODUCTION

1. "From Edward Steichen to Members of the PICTURE DIVISION," *Picturescope* 3, no. 2 (July 1955): 7.

2. "New York Group," *Picturescope* 3, no. 1 (March 1955): 3.

3. "Pictures and Public Relations," *Picturescope* 2, no. 1 (March 1954): 5.

4. "Detroit Convention Highlights," *Picturescope* 3, no. 3 (October 1955): 1. "Miniaturizing Life's Picture Files," *Picturescope* 5, no. 3 (October 1957): 23.

5. Another important journal from this period was *Eye to Eye*, published 1953–1956 by the Graphic History Society of America.

6. Thank you to Lisa Gitelman, who suggested this term in relation to the treatment of the stock image in my dissertation, *Picture-Work: On the Circulating Image Collection* (New York University, 2018). Gitelman and Thomas Mullaney explore how information was construed as alienable content through nineteenth-century media technologies in *Information: A Historical Companion*, eds. Ann Blair, Paul Duguid, Anja-Silvia Goeing, and Anthony Grafton (Princeton, NJ: Princeton University Press, 2021), 174.

7. A 1930 advertisement in c. 1930s bound portfolio, unprocessed archives of H. Armstrong Roberts, Inc., Philadelphia, PA.

8. By using the term "digital culture," I recognize that that I am introducing a "gaping catchall" similar to "print culture," which media scholars, including Lisa Gitelman,

have challenged as “insufficient and perhaps even hazardous to our thinking.” (See Lisa Gitelman, *Paper Knowledge: Toward a Media History of Documents* [Durham, NC: Duke University Press, 2014], 6–10). “Digital culture” potentially compounds the ambiguity and lack of reflexivity with which both “digital” and “culture” are used within the history of communication and reduces a broad range of social, technological, economic, artistic, philosophical, and political changes to a single cultural shift toward “digitality.” I do not wish to rely on the wide usage of the term “digital culture” to serve as evidence for its existence. (As does Charlie Gere, *Digital Culture*, 2nd ed. [London: Reaktion Books, 2009], 16). That said, there is an undeniable consequence to the digitization of processes and objects that has taken place over the past several decades. For the purposes of this book, I define digital culture loosely as the expectations, practices, and processes involved in the distribution of cultural objects through digital means (encompassing the technologies, social processes, and knowledge and physical infrastructures).

9. A 1930 annual report confirms that one-third of the Picture Collection’s users were from the design industry, specified as “theatres, publishers, advertising agencies, printers, barbers, wigmakers.” 1930 Annual Report, box 7, folder 5, Picture Collection Records 1896–1999, The New York Public Library, Manuscripts and Archives Division.

10. Romana Javitz, “The Public Interest,” *Work for Artists: What? Where? How? A Symposium by Walter Baermann*, edited by Elizabeth McCausland (New York: American Artists Group, 1947), 30.

11. For more on this exhibition and the related publications and marketing, see Jennifer Tobias, *The Museum of Modern Art’s ‘What Is Modern?’ Series 1938–1969* (PhD dissertation, The City University of New York, 2012). This is also discussed further in chapter 2.

12. H. Armstrong Roberts III (grandson of H. Armstrong Roberts), in discussion with author, June 17, 2015.

13. Paul Otlet and Ernest de Potter founded the International Institute of Photography in 1905, with the mission to centralize the study of photography and documentation. In addition to its photography collections, the institute developed the Universal Iconographic Repertory, which consists of documentation files of images filed using the Universal Decimal Classification system. The collection is still accessible through the Mundaneum Archives in Brussels. The Kunsthistorisches Institute was founded in 1897 to build up a centralized collection for the study of modern art history, and the photo library still comprises an international resource for the study of Italian art. The Photothek at the Kunsthistorisches Institut continues to facilitate art historical study, the study of the photograph as a material object, and a critical interrogation of archives and digitization, sponsoring the series *Photo Archives*, an international series of scholarly activities that has produced conferences and publications since 2009 exploring the nature of the photographic archive. The Hulton Picture Post Library was the picture archive for the Hulton Picture Post founded in 1937 by British publishing magnate Sir Edward Hulton and consisted of 4 million negatives by the time the *Picture Post* ceased publication and the archive was purchased by the BBC (see

Charles H. Gibbs-Smith, "The Hulton Picture Post Library," *Journal of Documentation* 6, no. 1 [1950]: 12–24). Nina Lager Vestberg explores the Hulton Picture Post Library and its visionary cataloguing system by Charles Gibbs-Smith in the forthcoming *Picture Research: The Work of Intermediation from Pre-Photography to Post-Digitization* (Cambridge, MA: MIT, 2023).

14. Time Inc. was founded in 1922 by Henry Luce and Briton Hadden and would go on to publish 100 magazine brands, including *Life* magazine, which Luce relaunched in 1936 as a venue to showcase photography and photo-essays. As of 2022, the *Life* Picture Collection is represented by Shutterstock through an exclusive editorial partnership with Meredith Corporation, which acquired the archive as part of its acquisition of Time Inc. in 2017. The Bettmann Archive was a commercial photo archive founded in 1936 by German refugee Otto Bettmann. It was acquired by Corbis in 1995 and is now represented by Getty Images after Getty and Visual China Group partnered to acquire Corbis in 1995. See Estelle Blaschke, *Banking on Images: The Bettmann Archive and Corbis* (Leipzig, Germany: Spector Books, 2015). The Frick Art Reference Library's Photoarchive was founded in 1920 by Helen Clay Frick with a mission to commission and collect a massive library of reproductions of works of art. The Frick sent photographic expeditions to capture unpublished artworks, and indexed by subject as well as artist, amassing 1.2 million reproductions. The Frick is currently one of fourteen European and North American art historical photo archives in the international consortium PHAROS, which seeks to create an open-access platform for comprehensive consolidated access to photo archive images.

15. Gregg Mitman and Kelley Wilder, "Introduction," *Documenting the World: Film, Photography, and the Scientific Record* (Chicago: University of Chicago Press, 2016).

16. See Craig Robertson, *The Filing Cabinet: A Vertical History of Information* (Minneapolis: University of Minnesota Press, 2021); Anke Te Heesen, *The Newspaper Clipping: A Modern Paper Object* (Manchester: Manchester University Press, 2014); Cornelia Vismann, *Files: Law and Media Study* (Palo Alto, CA: Stanford University Press, 2008); Lisa Gitelman, *Paper Knowledge: Toward a Media History of Documents* (Durham, NC: Duke University Press, 2014); Markus Krajewski, *Paper Machines* (Cambridge, MA: MIT Press, 2011); Ted Striphas, *The Late Age of Print: Everyday Book Culture from Consumerism to Control* (New York: Columbia University Press, 2009).

17. Robertson, *The Filing Cabinet*, 2.

18. Michelle Henning, *Unfettered Images* (New York: Routledge, 2018): 7.

19. Thy Phu and Matthew Brower, "Editorial," *History of Photography* 32, no. 2 (2008): 105.

20. Thierry Gervais, "Introduction," *The 'Public' Life of Photographs* (Cambridge, MA/Toronto: MIT Press/Ryerson Image Centre, 2016), 11.

21. Walead Beshty, ed. *The Picture Industry: A Provisional History of the Technical Image* (Geneva, Switzerland: JRP editions, 2018).

22. Elizabeth Edwards and Sigrid Lien, eds., *Uncertain Images: Museums and the Work of Photographs* (Farnham: Ashgate, 2014). Edwards extends this project with *What Photographs Do: The Making and Remaking of Museum Cultures*, edited by Edwards and

Ella Ravilious (London: UCL Press, 2022), which crucially brings together workers across the museum (photographer, cataloger, digital content team leader, among others), as well as curators and historians, to reflect on museum photographic practices through the prism of the Victoria and Albert Museum, London.

23. Nadya Bair, *The Decisive Network: Magnum Photos and the Postwar Image Market* (Berkeley, CA: UC Press, 2020).

24. Zeynep Gursel, *Image Brokers: Visualizing World News in the Age of Digital Circulation* (Berkeley: University of California Press, 2016), 2.

25. Vanessa Schwartz and Jason E. Hill, eds. *Getting the Picture: The Visual Culture of News* (New York: Routledge, 2015).

26. Paul Frosh, *The Image Factory: Consumer Culture, Photography and the Visual Content Industry* (New York: Bloomsbury, 2003), 2.

27. Blaschke, *Banking on Images*.

28. Vestberg, *Picture Research*.

29. Stanley Wolukau-Wanambwa, ed. *The Lives of Images, Vol. 1: Repetition, Reproduction, and Circulation* (New York: Aperture, 2021); *The Lives of Images, Vol. 2: Analogy, Attunement, and Attention* (New York: Aperture, 2021); *The Lives of Images, Vol. 3: Archives, Histories, and Memory* (New York: Aperture, 2022).

30. Among other publications, see Costanza Caraffa, “The photo archive as laboratory. Art history, photography, and materiality,” *Art Libraries Journal* 44, no. 1 (January 2019): 37–46; and *Photo-Objects: On the Materiality of Photographs and Photo-Archives in the Humanities and Science*, edited by Julia Bärnighausen, Costanza Caraffa, Stefanie Klamm, Franka Schneider, and Petra Wodtke (Berlin: MaxPlanck-Gesellschaft zur Förderung der Wissenschaften, 2019). See Kunsthistorisches Institut in Florenz website for latest projects, <https://www.khi.fi.it/en/index.php>.

31. Carolyn Marvin, *When Old Technologies Were New: Thinking about Electric Communication in the Late 19th Century* (New York: Oxford University Press, 1988), 8.

32. Richard E. Rubin, *Foundations of Library and Information Science*, 3rd ed. (New York: Neal-Schuman Publishers, Inc., 2010), 167.

33. W. J. T. Mitchell, *What Do Pictures Want? The Lives and Loves of Images* (Chicago: University of Chicago Press, 1995), 85. This discussion moves on into an extended metaphor of the picture as organism and the image as species, which I find of limited use in the linguistic distinction I am making here, though the symbiogenesis of images is an idea that will be explored further.

34. Douglas Crimp, “Pictures,” *October* 8 (Spring 1979): 75.

35. As an anecdotal example, in the museum curatorial department in which I worked from 2006–2008, “picture” was a somewhat old-fashioned term: the older generation of curators used “picture,” frequently with each other, whereas their younger colleagues would use a medium-specific term, like painting, or a general term, like object or image. Two of the case studies for this project reflect this evolution as well, as the commercial picture house H. Armstrong Roberts is now the “global image resource”

Robert Stock, and a selection from Picture Collection of the New York Public Library can now be seen as one of “800,000 images” at the library’s Digital Gallery online.

36. “Dematerialization” is introduced into art criticism by Lucy Lippard in Lippard and John Chandler, “The Dematerialization of the Art Object,” *Art International* 12, no. 2 (February 1968): 31–36.

37. For examples of the former, see Lorraine Daston and Peter Galison, *Objectivity* (New York: Zone Books, 2010); Anke Te Heesen, *The World in a Box* (Chicago: University of Chicago Press, 2002); Horst Bredekamp, *The Lure of Antiquity and the Cult of the Machine* (Princeton, NJ: Markus Wiener, 1995); and Susan M. Pearce, *Museums, Objects and Collections: A Cultural Study* (Leicester, UK: Leicester University Press, 1992). For the latter, see texts collected in John Elsner and Roger Cardinal, eds. *The Cultures of Collecting* (London: Reaktion Books, 1994), including classic texts by Walter Benjamin, “Unpacking My Library,” and Jean Baudrillard, “Systems of Collecting”; and Susan Stewart, *On Longing: Narratives of the Miniature, the Gigantic, the Souvenir, the Collection* (Durham, NC: Duke University Press, 1993).

38. Couze Venn, “The Collection,” *Theory, Culture & Society* 23, no. 2–3. Special Issue on Problematizing Global Knowledge (May 2006): 40.

39. Michael Gorman, “Technical Services Today,” in *Technical Services Today and Tomorrow*, 2nd ed., edited by Michael Gorman (Englewood, CO: Libraries Unlimited, 1998), 1–7.

40. Mattern identifies how “intellectual furnishings” put into conversation “fields including archival and library science, intellectual history, organizational studies, business history, management, design history and design practice, furniture manufacturing and retail, architectural history, sociology, anthropology, philosophy, and the list goes on.” (“Intellectual Furnishings,” working paper presented as part of the Graduate Institute of Design, Ethnography, and Social Thought Bi-Weekly Seminar, November 7, 2014, *Medium*, accessed March 1, 2018, <https://medium.com/@shan-nonmattern/intellectual-furnishings-e2076cf5f2de>). She has written further about intellectual furnishings in “A Brief History of the Shelf,” *Harvard Design Magazine* 43, “Shelf Life” Special Issue on Storage, December 2016; “Sharing Is Tables: Furniture for Digital Labor,” *e-flux architecture*, last modified October 9, 2017, <https://www.e-flux.com/architecture/positions/151184/sharing-is-tables-furniture-for-digital-labor/>; and “Closet Archive,” *Places Journal* (July 2017).

41. Liam Cole Young, *List Cultures: Knowledge and Poetics from Mesopotamia to BuzzFeed* (Amsterdam: Amsterdam University Press, 2017), 16.

42. Oxford English Dictionaries, “Index,” accessed March 1, 2018, <https://en.oxforddictionaries.com/definition/index>.

43. Rosalind Krauss, “Photography in the Service of Surrealism,” in *L’Amour Fou: Photography and Surrealism*, edited by Krauss and Jane Livingston (New York: Abbeville Press, 1985), 31.

44. For critiques of Google search, bias, and corporate control of knowledge production, see Siva Vaidhyanathan, *The Googlization of Everything (And Why We Should*

Worry) (Berkeley: University of California Press, 2012) and Safiya Noble, *Algorithms of Oppression* (New York: New York University Press, 2018). Google's algorithmic decision-making was scrutinized in the popular press in Kirsten Grind et al., "How Google Interferes with Its Search Algorithms and Changes Your Results," *Wall Street Journal*, November 15, 2019, <https://www.wsj.com/articles/how-google-interferes-with-its-search-algorithms-and-changes-your-results-11573823753>.

45. Nina Lager Vestberg, "Ordering, Searching, Finding," *Journal of Visual Culture* 12, no. 3 (2013): 478.

46. Jens-Erik Mai, "Semiotics and Indexing: An Analysis of the Subject Indexing Process," *Journal of Documentation* 57, no. 5 (September 2001): 620.

47. Sara Shatford, "Analyzing the Subject of a Picture: A Theoretical Approach," *Cataloging & Classification Quarterly* 6, no. 3 (1986): 39–62.

48. Vismann, *Files*, 8.

49. Vismann, *Files*, 10.

50. Gitelman, *Paper Knowledge*, 1.

51. Beaumont Newhall, "Documentary Approach to Photography," *Parnassus* 10, no. 3 (March 1938): 6.

52. See Marita Sturken and Lisa Cartwright, *Practices of Looking: An Introduction to Visual Culture*, 3rd ed. (New York: Oxford University Press, 2018), chap. 2, "Viewers Make Meaning."

53. Edwards and Lien, eds., *Uncertain Images*.

54. Allan Sekula, "The Body and the Archive," *October* 39 (Winter 1986): 58.

55. The term "visual content industry" is coined by Frosh, *The Image Factory*.

56. 1936 Annual Report, box 7, folder 5, Picture Collection Records 1896–1999, The New York Public Library, Manuscripts and Archives Division (hereafter cited as Picture Collection Records).

## CHAPTER 1

1. Christopher Bonanos, "Change of Plans, You'll Still Be Able to Browse the NYPL's Picture Collection," *Nymag.com*, September 17, 2021, <https://www.curbed.com/2021/09/nypl-picture-collection-saved.html>. I wrote a letter to the editor at the *New York Times* (published in the August 7, 2021, print issue with heading "Pictures at the Library") and an editorial piece for Artforum.com in opposition to the plan to archive ("Total Recall," August 30, 2021, <https://www.artforum.com/slant/diana-kamin-on-the-new-york-public-library-s-picture-collection-86403>).

2. Quoting the title of an essay by Romana Javitz: "From Abacus to Zodiac," in *The Story of Our Time: An Encyclopedic Yearbook* (New York: Grolier Society, 1955), 334–35.

3. See "Pictures as Documents" section for detailed history of Javitz's use of this phrase.

4. As three representatives, see M. G. Siegler, "The End of the Library," *TechCrunch*, October 13, 2013, <https://techcrunch.com/2013/10/13/the-end-of-the-library/>; "The

End(s) of the Library,” exhibition curated by Jenny Jaskey at the Goethe-Institut, October 30, 2012–June 21, 2013; and Wayne Bivens-Tatum, “Technological Change, Universal Access, and the End of the Library,” *Library Philosophy and Practice* 9 (Fall 2006): 1.

5. Biographical details culled from Romana Javitz Papers, Manuscripts and Archives Division, NYPL (subsequently referred to as the Javitz Papers). Anthony Troncale, former librarian in the Arts, Prints, and Photographs Division at the NYPL and founding head of the Digital Imaging Unit, has been researching and publishing on Javitz’s life as well. I’m grateful for his research and extensive discussions about Javitz. See Anthony Troncale, “Worth beyond Words: Romana Javitz and The New York Public Library’s Picture Collection,” *Bibliion: The Bulletin of The New York Public Library* 4, no. 1 (Fall 1995): 115–138, and Anthony Troncale, ed., *Words on Pictures: Romana Javitz and the New York Public Library’s Picture Collection* (New York: Photo | Verso Publications, 2020).

6. John Cotton Dana is invoked as the pioneer of circulating picture collections in the following sources: John Austin Parker, “A Brief History of the Picture Collection,” *Wilson Library Bulletin* 30 (November 1955): 257–264, and Antje Lemke “Education and Training,” in *Picture Librarianship*, edited by Helen P. Harrison (Phoenix, AZ: Oryx Press, 1981), 229. Another librarian working with circulating art reference collections in the early 1890s was Charles Cutter, at the Forbes Library of Northampton, Massachusetts (Charles Ammi Cutter, *Notes from the Art Section of a Library* [Boston: American Library Association, 1905], 4).

7. Dana publishes influential manuals for organizing libraries and picture collections through his family’s publishing press Elmtree Press, founded in 1907. Several editions of *The Picture Collection* that included a list of suggested subject headings were published, beginning in 1910 (J. C. Dana, *The Picture Collection* [Woodstock, VT: Elmtree Press, 1910]).

8. As just one example, a short 1903 article in *Public Libraries* on circulating pictures inspired a series of letters to the editor about cataloguing by librarians using a slightly customized version of the Dewey decimal system that allowed for geographical and biographical indicators to be further specified: M. W. Plummer, “Circulation of Mounted Pictures,” *Public Libraries* 8 (1903): 107; Ange V. Milner, “Cataloguing Mounted Pictures,” *Public Libraries* 9 (1904): 11; Albert F. Carter, “Cataloguing Pictures,” *Public Libraries* 9 (1904): 116. For later publications about the administration of picture collections, see J. C. Dana and Blanche Gardner, *The Picture Collection, Revised* (Woodstock, VT: Elm Tree Press, 1917); J. C. Dana and Marjary L. Gilson, *Large Pictures, Educational and Decorative* (Woodstock, VT: Elm Tree Press, 1912); William J. Dane, *The Picture Collection Subject Headings*, 6th ed. (Hamden, CT: The Shoe String Press, Inc., 1968); Norma O. Ireland, *The Picture File in School, College, and Public Libraries*, rev. ed. (Boston: F. W. Faxon, 1952); and Helen Harrison, ed., *Picture Librarianship*.

9. M. E. Dousman, “Pictures and How to Use Them,” *Public Libraries* 4 (1899): 400.

10. Melvil Dewey, “Library Pictures,” *Public Libraries* 11 (1906): 10.



11. Circulation numbers drawn from annual reports between 1928 and 1968, Picture Collection Records.
12. On initiating policy of encouraging non-English users to draw requests, see Picture Collection Annual Report for 1931, box 7, folder 5, Picture Collection Records.
13. See correspondence with Ernst Boas referencing time spent with Rukeyser in box 1, folder 4, series 1: Correspondence, Javitz Papers.
14. There are decades of correspondence with Ernst and Franziska Boas in series 1: Correspondence, Javitz Papers.
15. She references this work in Romana Javitz, Typewritten transcript, n.d., in box 4 “Audio tape transcriptions—Javitz class at Pratt[?] n.d.,” Picture Collection records; “A Report on the Picture Collection for Mr. Ralph A. Beals” (July 1951), in box 3, folder 21, series 1, Picture Collection Records; and “An Interview with Romana Javitz 23 February 1965,” *Archives of American Art Journal* 41, no. 1/4 (2001): 8. See also Javitz to Arthur Schomburg, May 25, 1937, in Arthur A. Schomburg Papers, Schomburg Center for Research in Black Culture.
16. James V. O’Gara, “Admen Haunt N.Y. Public Library’s Storeroom of 6,000,000 Pictures,” *Advertising Age*, December 24, 1951. Clipping in box 3, folder 6, Picture Collection Records.
17. “Library Not Art Snob, Picture Chief Says,” *Toronto Globe and Mail*, November 30, 1965. Clipping in box 3, folder 6, Picture Collection Records.
18. In one Annual Report, she describes how a single FSA image (perhaps the famous “Migrant Mother” image by Dorothea Lange) was used by “a religious organization to solicit funds for the poor . . . a birth control society for propaganda, a visiting European used it to comment disparagingly on life in a democracy, and a mental hygienist used a detail of the mother’s face to demonstrate the link between insecurity and mental illness.” 1940 Annual Report, box 7, folder 6, Picture Collection Records.
19. In 1917, Dana notes, “We have had many requests from libraries and other institutions for a complete list of these [subject] headings. Information has perhaps been more often asked for by librarians and others on our picture collection than on any other subject” (Dana and Gardner, *The Picture Collection*, 3).
20. Romana Javitz, letter to Helen Oelke, American Library Associations, November 2, 1937, box 1, folder 28, Picture Collection Records.
21. 1930 Annual Report, box 7, folder 5, Picture Collection Records.
22. See W. B. Rayward, “The Origins of Information Science and the International Institute of Bibliography/International Federation for Information and Documentation (FID),” *Journal of the American Society for Information Science* 48, no. 4 (1997): 289–300.
23. Rayward rehearses the avalanche of references in “H. G. Wells’s Idea of a World Brain: A Critical Reassessment,” *Journal of the American Society for Information Science* 50, no. 7 (May 1999): 557–573.
24. H. G. Wells, *World Brain* (Garden City, NY: Doubleday, Doran & Co., 1938), eBook edition by Project Gutenberg Australia, accessed May 12, 2014, <http://gutenberg.net>

.au/ebooks13/1303731h.html. Significantly, in Well's vision, microphotography would be used to realize this dream.

25. From a description of the Picture Collection included with a letter from Romana Javitz to Dorothea Lange, dated December 11, 1956, box 1, folder 25, Picture Collection Records.

26. "On Pictures in a Public Library," manuscript, 1939, in box 3, folder 7, Picture Collection Records.

27. "Rough Draft, August 9, 1956," manuscript, in box 3, folder 15 ("Projects-Future"), Picture Collection Records, 3.

28. *Ibid.*, 6.

29. Alex Wright, *Cataloguing the World: Paul Otlet and the Birth of the Information Age* (New York: Oxford University Press), 10.

30. Jessica Lee discusses this exchange in *Off the Clock: Walker Evans and the Crisis of American Capital, 1933–38* (PhD dissertation, UC Berkeley, 2010).

31. Javitz, letter to "Mr. Hopper," April 27, 1842, box 1, folder 10, Picture Collection Records, and Romana Javitz, "Images and Words," *Wilson Library Bulletin* 18, no. 3 (November 1943): 218.

32. Romana Javitz, transcript, n.d. "Audio Tape Transcriptions—Javitz Class at Pratt," box 4, Picture Collection Records, 341.

33. John Hollingshead, *My Lifetime*, vol. 1 (London: William Clowes & Sons, 1895), 61.

34. Untitled, *The Academy*, no. 1449, February 10, 1900, 117. Reprint from *Scribner's* February 1900.

35. Javitz, undated memorandum, c. 1940, box 1, folder 10, Picture Collection Records.

36. Tim Berners-Lee and Robert Cailliau, *WorldWideWeb: A Proposal*, 1990, accessed May 16, 2014, <http://www.w3.org/Proposal.html>.

37. "browser, *n.*" *OED Online*, March 2001, accessed May 15, 2014, [oed.com](http://oed.com), and J. H. Williams, Jr. "BROWSER: An Automatic Indexing On-Line Text Retrieval System. Annual Progress Report," abstract accessed May 15, 2014, <http://eric.ed.gov/?id=ED038981>.

38. Abstract for J. H. Williams, "Functions of a Man-Machine Interactive Information Retrieval System," *Journal of American Society for Information Science* 22 (1971): 311–317.

39. 1931 Annual Report, box 7, folder 5, Picture Collection Records.

40. 1932 Annual Report, box 7, folder 5, Picture Collection Records.

41. Romana Javitz, "Influence and Function: Pictures in Print," n.d. manuscript, box 3, folder 28, Picture Collection Records.

42. Donald Foster, "The Classification of Non-Book Materials in Academic Libraries: A Commentary and Bibliography," *Occasional Papers* 104 (September 1972): 3.

43. 1942 Annual Report, box 7, folder 6, Picture Collection Records.

44. Jerry Bonfield, "Just Ask For It!" TW, November 26, 1944. Clipping in box 3, folder 6, Picture Collection Records.

45. Jessica Cline, supervising librarian for the Picture Collection, in discussion with author, May 31, 2022.
46. 1936 Annual Report, box 7, folder 5, Picture Collection Records.
47. Jay Vissers, in discussion with author, April 23, 2014. Jay Vissers and Penny Glenar in discussion with author, August 5, 2015. Vissers and Glenar had worked at the Picture Collection since the early 1990s and 1998, respectively. Glenar retired in 2016. Vissers still works at the Picture Collection as of 2022. The Picture Collection has moved twice since this interview, and with staff and hour limitations during the COVID-19 pandemic, clipping was further limited. Still, in 2022, supervising librarian Jessica Cline indicated that they continue to clip pictures at the rate of about 500 per month in discussion with author, May 31, 2022.
48. Celestine Frankenburg, "Specialization: Pictures A Dialogue about the Training of Picture Librarians. Mrs. Celestine Frankenberg Interviewing Romana Javitz," *Special Libraries*, January 1965, 17.
49. Using the example of the iconic image of Marilyn Monroe holding down her dress while standing on top of a subway grate in the *Seven Year Itch*, Glenar and Vissers explained that after a copy was placed in a Marilyn Monroe folder, duplicate images could be added to poses, subway, moving pictures, emotions, wind, or facial expressions.
50. "Glossary of Terms: Transgender," *GLAAD Media Reference Guide 11th Edition*, last modified April 21, 2022 (<https://www.glaad.org/reference/trans-terms>), notes that "transgenderism" is a term to avoid.
51. Cline, in discussion with author, May 31, 2022.
52. Romana Javitz, "Organization of Still Pictures as Documents," n.d., box 3, folder 8, Picture Collection Records, 48–49.
53. As Vissers noted, "Clipping is also interesting because barring somebody destroying it or losing it, you're adding something to the files. You're putting your take on it, your annotation of what it is, you have an input into the collection that will last long after you're gone. And so, it's sort of fulfilling to know that some of it will still be there." Vissers in discussion with author, August 5, 2015.
54. Isabella Peters, *Folksonomies: Indexing and Retrieval in Web 2.0* (Berlin: Walter de Gruyter, 2009), 3.
55. Cameron Marlow, Mor Naaman, Danah Boyd, and Marc Davis, "HT06, Tagging Paper, Taxonomy, Flickr, Academic Article, to Read," in *Proceedings of the 17th Conference on Hypertext and Hypermedia* (Odense, Denmark, 2006), 1. <http://www.danah.org/papers/Hypertext2006.pdf>.
56. James Estrin, "A Historic Photo Archive Re-emerges at the New York Public Library," *New York Times*, June 6, 2012, <https://lens.blogs.nytimes.com/2012/06/06/a-historic-photo-archive-re-emerges-at-the-new-york-public-library/>.
57. N. Katherine Hayles, *Writing Machines* (Cambridge, MA: MIT Press, 2002), 33.

58. Johanna Drucker, "Entity to Event: From Literal, Mechanistic Materiality to Probabilistic Materiality," *Parallax* 15, no. 4 (2009): 8.
59. Lev Manovich, *Software Takes Command* (New York: Bloomsburg Academic Publishing, 2013), 33.
60. Daniel Rubinstein and Katrina Sluis, "Algorithmic Photography and the Crisis of Representation," in *The Photographic Image in Digital Culture*, 2nd ed., edited by Martin Lister (London: Routledge, 2013): 22–40.
61. Robin Kelsey, *Archive Style: Photographs and Illustrations for U.S. Surveys 1850–1890* (Berkeley: University of California Press, 2007), 16.
62. Ronald E. Day, *Documentarity: Evidence, Ontology, and Inscription* (Cambridge, MA: MIT Press, 2019).
63. I'm grateful for discussions with Anthony Troncale, who first alerted me to the relationship with the Boas family and helped me think through the intellectual impact of these personal relationships.
64. For just two projects exploring this legacy, see *Reconsidering the Documentary and Contemporary Art* (Berlin: Sternberg Press, 2008), published in connection with a multiyear research project initiated by Maria Lind and Hito Steyerl, and Julian Stallbrass, ed., *Documentary* (Cambridge, MA: MIT Press, 2013).
65. For an excellent overview of the history of the uses of the terms "document" and "documentation" in librarianship see Michael K. Buckland, "What Is a 'Document'?" *Journal of the American Society for Information Science* 48, no. 9 (September 1997): 804–809. In the same volume, Robert V. Williams discusses the documentation and special libraries movement in the United States, arguing that the special libraries movement of 1900–1930 (notably, a picture collection would be considered under the rubric of special library) was the practical and conceptual correlate to the documentation movement in Europe (Williams, "The Documentation and Special Libraries Movements in the United States, 1910–1960," *Journal of the American Society for Information Science* 48, no. 9 [September 1997]: 775–781). Ronald E. Day gives a critical history of the documentation movement in *Indexing It All: The Subject in the Age of Documentation* (Cambridge, MA: MIT Press, 2015).
66. Day, 2015, looks closely at both Briet and Otlet to outline the indexical relationship posited by indexing practices in documentation work.
67. Suzanne Briet, *What Is Documentation? English Translation of a Classic French Text* (Lanham, MD: Scarecrow Press, 2006 [1951]), 10.
68. David Shumaker, "Special Libraries," in *Encyclopedia of Library and Information Sciences*, 3rd ed. (New York: Taylor and Francis, 2009), 4966–4974.
69. Williams, "The Documentation and Special Libraries Movements in the United States, 1910–1960," 775.
70. *Ibid.*
71. See *Picturescope* 1, no. 1 (1953): 1.

72. Romana Javitz, "Care of Documentary Photographs," *New York Times* (February 18, 1953), 30. Italics added.
73. Javitz's writing is gathered in the invaluable collection edited by former NYPL librarian Anthony Troncale, *Words on Pictures: Romana Javitz and the New York Public Library's Picture Collection* (New York: Photo Verso Publications LLC, 2020).
74. 1935 Annual Report, box 7, folder 5, Picture Collection Records.
75. Walter Benjamin, "The Work of Art in the Age of Technological Reproducibility, Second Version," translated by Edmund Jephcott and Harry Zohn, in *Walter Benjamin: Selected Writings, Volume 3*, edited by Howard Eiland and Michael W. Jennings (Cambridge, MA: Harvard University Press, 2005), 105. Written late December 1935 to the beginning of February 1936; unpublished in his lifetime.
76. Ibid.
77. Romana Javitz, "Accent on Pictures," 1949 manuscript of text published in *Library Journal* 15 (September 1949), box 1, folder 1, Picture Collection Records.
78. Romana Javitz, "Influence and Function: Pictures in Print," n.d. manuscript, box 3, folder 28, Picture Collection Records, 5.
79. Benjamin, "The Work of Art in the Age of Technological Reproducibility," 104.
80. Javitz, transcript, 372.
81. Walter Benjamin, "Eduard Fuchs: Collector and Historian," translated by Howard Eiland and Michael W. Jennings, in *Walter Benjamin: Selected Writings, Volume 3*, edited by Howard Eiland and Michael W. Jennings (Cambridge, MA: Harvard University Press, 2005): 260–302. First appeared as "Edward Fuchs: der sammler und der Historiker," *Zeitschrift für Sozialforschung* 6 (1937): 346–380.
82. Walter Benjamin, "Little History of Photography," translated by Edmund Jephcott and Kingsley Shorter, in *Walter Benjamin: Selected Writings Volume 2 1927–1934* (Cambridge, MA: Harvard University Press, 1999), 518. First published in *Die literarische Welt* (September–October 1931).
83. Benjamin, "Little History of Photography," 507.
84. John Szarkowski, *Atget* (New York: Museum of Modern Art, 2000), 212.
85. Benjamin, "Little History of Photography," 518.
86. See Beaumont Newhall, *The History of Photography: From 1839 to the Present Day*, 4th ed. (New York: Museum of Modern Art, 1978), 137. Newhall, Atget, and MoMA's shaping of documentary photography will be discussed further in chapter 2.
87. Rosalind Krauss, "Photography's Discursive Spaces," *Art Journal* 42, no. 4 (Winter 1982): 311–319.
88. Molly Nesbit carefully traces the networks of Atget's production, including his clients and collections, in *Atget's Seven Albums* (New Haven, CT: Yale University Press, 1994).
89. Krauss, "Photography's Discursive Spaces," 317.
90. Ibid.

91. John Tagg, "The Archiving Machine; or the Camera and the Filing Cabinet," *Grey Room* 47, (Spring 2012): 33.
92. Romana Javitz, letter to Helen Oelke, American Library Associations, November 2, 1937, box 1, folder 28, Picture Collection Records. The "Newark list" refers to a list of subject headings for the picture collection published by the Newark Library in numerous editions since 1910, which will be discussed further in the "Living Collection" selection.
93. 1939 Annual Report, box 7, folder 5, Picture Collection Records.
94. Romana Javitz, "Memorandum," n.d., box 1, folder 10 ("Carnegie Grant 1940–1943"), Picture Collection Records.
95. Romana Javitz, "An Interim Report on the Progress of the Work of Preparing a Manual on the Classification of Documentary Pictures," October 1941, box 1, folder 10, Picture Collection Records.
96. Romana Javitz, "Organization of Still Pictures as Documents," n.d. manuscript, box 3, folder 8, Picture Collection Records, 68.
97. *Ibid.*, 27.
98. *Ibid.*, 23.
99. Romana Javitz, "Words on Pictures: An Address by Romana Javitz, Superintendent of the Picture Collection, New York Public Library Before the Massachusetts Library Association, January 28, 1943," box 3, folder 34, Picture Collection Records.
100. Lincoln Kirstein, "Walker Evans's Photographs of Victorian Architecture," *Bulletin of the Museum of Modern Art* 4 (December 1933): n.p.
101. Kelsey, *Archive Style*, 2007. Like Krauss, Kelsey suggests the photographic archive is a structuring aesthetic, but he develops the idea further to describe the network of social, technical, and political forces that make up this structure and act in relation with each other. For both writers, "subject"-based photography, where "subject" refers to an institutional subject heading list rather than authorial actor, produces an aesthetic style that comes to be recognized as documentary. It may look like modernism, but only within a certain discursive space.
102. Oral history interview with Walker Evans, October 13–December 23, 1971, Archives of American Art, Smithsonian Institution.
103. The influence of MoMA and Walker Evans on the development of documentary style will be explored further in chapter 2.
104. Belinda Rathbone, *Walker Evans: A Biography* (Boston: Houghton Mifflin Harcourt, 2000), 84.
105. Alfred Kazin, *On Native Grounds: An Interpretation of Modern American Prose Literature* (New York: Reynal and Hitchcock, 1942), 487.
106. Mark Goble, *Beautiful Circuits: Modernism and the Mediated Life* (New York: Columbia University Press, 2010), 245.
107. From series of reports in box 3, folder 32, Picture Collection Records.

108. Richard Doud, "An Interview with Romana Javitz 23 February 1965," *Archives of American Art Journal* 41, no. 1/4 (2001): 8.

109. Roy Stryker, letter to Romana Javitz, n.d., box 2, folder 12, Picture Collection Records.

110. Doud, "Interview with Romana Javitz," 8.

111. Ibid.

112. Estrin, "A Historic Photo Archive Re-Emerges at the New York Public Library."

113. See Mary Jane Appel, "The Duplicate File: New Insights into the FSA The Duplicate File: New Insights into the FSA," *Archives of American Art Journal* 54, no. 1 (Spring 2015): 4–27. Artists and critics have commented on the perceived violence of the act. As just one example, artist William E. Jones has completed a series of works using the images, including his 2017 film *Rejected*, which zooms in and out of 3,048 punctured holes on a seven-hour continuous loop, emphasizing what he describes as an "institutional failure" and bringing the haunting results into dialogue with the present.

114. "[Stryker] was thus the target of constant criticism, of complaints; he was looked upon by Walker Evans as a philistine, an obstrucater, and by Ben Shahn as a vandal." From Hank O'Neal, *A Vision Shared: A Portrait of America 1935–1943* (reprint, Göttingen, Germany: Steidl, 2017), 7.

115. Mary Panzer, "Romana Javitz, Arturo Schomburg, and the Farm Security Administration Search for Usable Pictures of African American Life," panel presentation for Special Libraries Association, New York Chapter, March 23, 2021. Panzer also introduces this argument in "Pictures at Work: Romana Javitz and the New York Public Library Picture Collection," in *The 'Public' Life of Photographs*, edited by Thierry Gervais (Cambridge/Toronto: MIT Press/Ryerson Image Centre, 2016), 144.

116. In a 1937 letter to Roy Stryker, Javitz supplied a full list of extant numbers of photographs showing African American life from the Farm Security Administration and suggested that he send prints of whatever available photographs of African American life to Dr. Schomburg for the "Harlem collection," concluding, "I need not reiterate their importance to us and to our public both from the point of view of document and of interest" (Romana Javitz, letter to Roy Stryker, May 14, 1937, box 2, folder 12, series 1, Picture Collection Records). Javitz further references this work in Romana Javitz, Typewritten transcript, n.d., in box 4 "Audio Tape Transcriptions—Javitz Class at Pratt[?] n.d.," Picture Collection records; "A Report on the Picture Collection for Mr. Ralph A. Beals" (July 1951), in box 3, folder 21, series 1, Picture Collection Records; and "An Interview with Romana Javitz, 23 February 1965," *Archives of American Art Journal* 41, no. 1/4 (2001): 8. See also Javitz to Arthur Schomburg, May 25, 1937, in Arthur A. Schomburg Papers, Schomburg Center for Research in Black Culture.

117. Goble, *Beautiful Circuits*, 289.

118. This history, and Javitz's role, is confirmed by Holger Cahill's introduction to *The Index of American Design*, by Erwin O. Christensen (New York: Macmillan, 1950). Javitz had discussed interest in American design, and the dearth of materials to support the budding demand, with many artist-users of the collection. One, Ruth Reeves,

had contacts at the New York City Emergency Relief Administration and relayed Javitz's idea for a comprehensive source index of American design. A proposal was solicited from Javitz in 1935, and the project was realized over the seven years that followed.

119. Goble, *Beautiful Circuits*, 293.

120. See James Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven, CT: Yale University Press, 1999), for the former critique and Martha Rosler, "In, Around, and Afterthoughts (on Documentary Photography)," in *The Contests of Meaning: Critical Histories of Photography*, edited by Richard Bolton (Cambridge, MA: MIT Press, 1992), 303–333, for the latter.

121. Martha Rosler, "In, Around, and Afterthoughts (on Documentary Photography)," 306.

122. *Ibid.*, 317.

123. Jonathan Kahana, *Intelligence Work: The Politics of American Documentary* (New York: Columbia University Press, 2008), 26.

124. Okwui Enwezor, "Documentary/Verite: Bio-Politics, Human Rights, and the Figure of 'Truth' in Contemporary Art," in *Reconsidering the Documentary and Contemporary Art*, edited by Maria Lind and Hito Steyerl (Berlin: Sternberg Press, 2008), 95.

125. This is a key intervention of visual culture studies. See "Viewers Make Meaning," chap. 2 in Marita Sturken and Lisa Cartwright, *Practices of Looking: An Introduction to Visual Culture*. 3rd ed. (New York: Oxford University Press, 2018).

126. Mitchell, *What Do Pictures Want?* 87.

127. Hal Foster, "An Archival Impulse," *October* 110 (Fall 2004): 3–22, and Okwui Enwezor, *Archive Fever: Uses of the Document in Contemporary Art* (New York: ICP, 2008).

128. "Audio Tape Transcriptions—Javitz Class at Pratt[?] n.d." Picture Collection Records, 66.

129. Joseph Cornell, letter to Romana Javitz, January 16, 1947, box 1, folder 29, Picture Collection Records.

130. Matthew Affron and Sylvie Ramond, eds., *Joseph Cornell and Surrealism* (Charlottesville, VA: Fralin Museum of Art, 2015). See Ramond and François René Martin, "Museums, Muses: Notes on Joseph Cornell," in that volume.

131. Blake Gopnik, *Warhol* (New York: Ecco/HarperCollins Publishers, 2020), 138.

132. *Ibid.*

133. Thank you to Susan Chute for initially pointing this out to me, as well as the greeting card. Chute wrote a blog post about her discovery in 2010, "POP! Goes the Picture Collection: Warhol at NYPL," *NYPL.org*, September 9, 2010, <http://www.nypl.org/blog/2010/09/09/pop-goes-picture-collection-warhol>.

134. Contemporary users are interviewed in Arthur Lubow, "The Treasures in the Stacks," *New York Times*, August 4, 2021, section C, 1.

135. Eric Timothy Carlson, in discussion with author, October 3, 2017.



136. Tim Griffin, “An Unlikely Futurity,” in *Taryn Simon: The Color of a Flea’s Eye: The Picture Collection*, edited by Taryn Simon (Paris, France: Cahiers D’Art, 2020).

## CHAPTER 2

1. “Table of Contents: Museums on the Web: An International Conference,” *Museumsontheweb.com*, last modified January 7, 1998, accessed December 15, 2017, <https://www.museumsandtheweb.com/mw97/mw97toc.html>.

2. Anna Maria Antonini, Sara Chiesa, and Dante Bartoli, “Archeowiki: When Open-Source Strategies Attract Visitors’ Presence in Museums. A Project for the Enhancement of Archaeological Heritage in Lombardy,” in *Museums and the Web 2013*, edited by N. Proctor and R. Cherry (Silver Spring, MD: Museums and the Web, published online May 31, 2014), <https://mwf2014.museumsandtheweb.com/proposals/archeowiki-when-open-source-strategies-incentive-visitors-presence-in-museum-a-project-for-the-enhancement-of-archaeological-heritage-in-lombardia/>.

3. MoMA’s release of all of their exhibition documentation through a dedicated web portal is one of the most recent examples of the durability of this mission. “The Museum of Modern Art Launches Comprehensive Online Exhibition History,” press release (New York: MoMA), September 14, 2016.

4. Groys, *Art Power*.

5. Tony Bennett, “The Exhibitionary Complex,” *New Formations* 4 (Spring 1988), 73–102; James Clifford, *The Predicament of Culture: Twentieth-Century Ethnography, Literature, and Art* (Cambridge, MA: Harvard University Press, 1988) and *Routes: Travel and Translation in the Late Twentieth Century* (Cambridge, MA: Harvard University Press, 1997) (especially chap. 7, “Museums as Contact Zones”).

6. Douglas Crimp, *On the Museum’s Ruins* (Cambridge, MA: MIT Press, 1995).

7. Mary Anne Staniszewski, *The Power of Display: A History of Exhibition Installations at the Museum of Modern Art* (Cambridge, MA: MIT Press, 1998).

8. Carol Duncan, *Civilizing Rituals: Inside Public Art Museums* (London: Routledge, 1995).

9. Terence Riley and Stephen Perrella, *The International Style: Exhibition 15 and the Museum of Modern Art* (New York: Rizzoli, 1992); Eric J. Sandeen, *Picturing an Exhibition: The Family of Man and 1950s America* (Albuquerque: University of New Mexico, 1995); Fred Turner, *Democratic Surround: Multimedia and American Liberalism from World War II to the Psychedelic Sixties* (Chicago: University of Chicago Press, 2013); Jenny Tobias, *The Museum of Modern Art’s “What Is Modern?” Series, 1938–1969* (PhD dissertation, The City University of New York, 2012).

10. Haidee Wasson, *Museum Movies: The Museum of Modern Art and the Birth of Art Cinema* (Berkeley: University of California, 2005); Christopher Phillips, “Judgment Seat of Photography,” *October* no. 22 (1982).

11. Sybil Gordon Kantor, *Alfred H. Barr, Jr. and the Intellectual Origins of the Museum of Modern Art* (Cambridge, MA: MIT, 2002); Russell Lynes, *Good Old Modern: An Intimate*

*Portrait of the Museum of Modern Art* (New York: Atheneum, 1973); Alice Goldfarb Marquis, *Alfred H. Barr, Jr.: Missionary for the Modern* (Chicago: Contemporary, 1989); Helaine Ruth Messer, *MoMA: Museum In Search of an Image* (PhD dissertation, Columbia University, 1979); Robert Sitton, *Lady in the Dark: Iris Barry and the Art of Film* (New York: Columbia University Press, 2014); Margaret Whitehead, *The Making of the Museum of Modern Art's Photography Canon: Beaumont Newhall and the Rejection of 1930s Modernity in New York* (PhD dissertation, George Washington University, 2007).

12. Robert S. Nelson, "The Slide Lecture, or the Work of Art History in the Age of Mechanical Reproduction," *Critical Inquiry* 26, no. 3 (Spring 2000): 414–434.

13. Annemarie Mol's *The Body Multiple: Ontologies in Medical Practice* (Durham, NC: Duke University Press, 2002) uses the lens of multiple ontologies theory. For "iterative ontology learning," see Jens Lehmann, and Johanna Voelker, *Perspectives on Ontology Learning* (Tokyo: AKA/IOS Press, 2014).

14. See Christopher Brewster; José Iria, Ziqi Zhang, Fabio Ciravegna, Louise Guthrie, and Yorick Wilks, "Dynamic Iterative Ontology Learning," in 6th International Conference on Recent Advances in Natural Language Processing. Borovets, Bulgaria (September 27, 2007–September 29, 2007).

15. Edwards and Lien, *Uncertain Images*, 3.

16. Allan Sekula has argued for the continued legacy of photography's two contradictory impulses: the scientific and objective against the aesthetic and subjective. Sekula, "Reading an Archive: Photography between Labor and Capital," in *Blasted Allegories: An Anthology of Artists' Writings*, edited by Brian Wallis (New York and Cambridge, MA: The New Museum of Contemporary Art and MIT Press, 1987), 114–128. John Tagg's central intervention in *The Burden of Representation. Essays on Photographies and Histories* (London: Macmillan, 1988) is that institutional archives, rather than artistic aims, are central to the development of photography. Rosalind Krauss challenges how aesthetic ideology is applied to photography in "Photography's Discursive Spaces" (1982).

17. Douglas Crimp, "The Museum's Old, the Library's New Subject," in *On the Museum's Ruins* (Boston: MIT Press, 1993), 75.

18. See Kantor, *Alfred H. Barr, Jr.*

19. The role of the artwork reproduction in consolidating art history as a discipline is well acknowledged (Nelson, "The Slide Lecture"). In addition to Nelson, photography's role in art history was observed as early as the nineteenth century by art historians like Bernard Berenson and Anton Springer. This literature is reviewed in Costanza Caraffa, "From 'Photo Libraries' to 'Photo Archives.' On the Epistemological Potential of Art-Historical Photo Collections," in *Photo Archives and the Photographic Memory of Art History*, edited by Costanza Caraffa (Berlin: Deutscher Kunstverlag 2011), and Frederick N. Bohrer "Photographic Perspectives: Photography and the Institutional Formation of Art History," in *Art History and Its Institutions: The Nineteenth Century* (London: Routledge, 2002), 246–259. Another key scholar who has explored this relationship is Heinrich Dilly, though his work has not yet been translated. See

Die Bildwerfer: “128 Jahre Kunst wissenschaftliche Dia-Projektion” [The Projection-Lantern: 128 Years of Art-Historical Slide Projection], in Kai-Uwe Hemken, ed., *ImBann derMedien* (Weimar: VDG-Verlag und Datenbank für Feisteswissenschaften, 1995).

20. Biographical information in this section is drawn from Kantor unless otherwise noted.

21. The Index continues to this day as a major research tool. It has been digitized over the last few decades, but it was exclusively a print resource until 1991, centered at Princeton with copies placed at Dumbarton Oaks Research Library, Washington, D.C.; the Biblioteca Apostolica Vaticana, Rome; and the Getty Research Center, Los Angeles. For an early history of the Index, see Isa Ragusa, “Observations of the History of the Index: In Two Parts,” *Visual Resources* 13 (1998): 215–251. While outside the scope of this book, the Index alone is a case study rich with implications for the nature of photographic databases and the study of art. Ragusa notes the gendered role of many of its practitioners and the transition from the widespread belief that the Index would eventually encompass all documented objects of the medieval period to the postwar realization that this would be an impossible goal, two ideas rich for future study. Andrew E. Hershberger has written on the myth of photographic objectivity and the Index, pointing out how little attention was given to photographic standardization in comparison to the organization of the subject cards, as well as how the objectivity of photography was assumed by Morey and Index staff through the present day. Andrew E. Hershberger, “The Medium Was the Method: Photography and Iconography at the Index of Christian Art,” in *Futures Past: Twenty Years of Arts Computing*, edited by Anna Bentkowska-Kafel, Trish Cashen, and Hazel Gardiner (London: Intellect, 2007).

22. See chap. 1 in Kantor, *Alfred H. Barr, Jr.*

23. At Wellesley College, titled “Contemporary Painting in Relation to the Past, to the Other Arts, to Aesthetic Theory and Modern Civilization.”

24. Quoted in Kantor, *Alfred H. Barr, Jr.*, 101.

25. *Living Art* contained thirty plates, with ten black and white photographs of sculpture, two renderings of paintings, and eighteen “facsimiles” of watercolors and tempera works. These facsimiles were color collotypes, a labor-intensive method of printing from a gelatin surface in a lithographic manner, which produces high-quality prints from a photographic negative.

26. Quoted in Kantor, *Alfred H. Barr, Jr.*, 94.

27. While in Europe, Barr met with the Bauhaus faculty, which was known for its embrace of industrial design, architecture, film, and photography alongside the traditional arts. Later, he reflected his multidisciplinary plan was “inspired by Rufus Morey’s class in Medieval art . . . and equally important, the Bauhaus of Dessau” (quoted in Kantor 155). In Russia, he encountered wall labels at the Tretyakov Gallery that related the objects on view to the catalogue and described the whole room rather than a single work; he wrote excitedly about this innovation, insisting, “There are none in America” (Kantor, *Alfred H. Barr, Jr.*, 188).

28. From installation instructions for the circulating version of exhibition, "Circulating Exhibition of Cubism and Abstract Art," The Museum of Modern Art Exhibition Records, 46.2, The Museum of Modern Art Archives, New York (hereafter MoMA Archives, NY).
29. The only other painting represented by a photograph in the exhibition was Alexander Rodchenko's photograph of Kazimir Malevich's *Black on Black* ("Circulating Exhibition of Cubism and Abstract Art," MoMA Archives, NY).
30. MoMA, "Museum of Modern Art, New York, and Art Institute of Chicago will Cooperate in Showing Largest Exhibition of Works by Picasso Ever Held in This Country," press release, January 20, 1939.
31. Hal Foster, *Recordings: Art, Spectacle, Cultural Politics* (Port Townsend, WA: Bay Press, 1985), 184.
32. See Simon Gikandi, "Picasso, Africa, and the Schemata of Difference," *Modernism/Modernity*, 10, no. 3 (September 2003): 455–480.
33. Leo Steinberg, "Philosophical Brothel," *October* 44 (Spring 1988): 20.
34. John Cotton Dana, *The Gloom of the Museum* (Woodstock, VT: Elm Tree Press, 1917), 28.
35. "Circulating Exhibitions 1931–1954," *The Bulletin of the Museum of Modern Art* 21, no. 3/4 (Summer, 1954): 4.
36. MoMA, "Survey of Modern Painting," press release, July 6, 1932.
37. Alfred H. Barr Jr., *A Brief Survey of Modern Painting* (New York: Museum of Modern Art, 1934), 2.
38. He wrote at the time to Harvard art historian Paul Sachs, "Such a label eliminates individual titles for each picture and makes the picture readily located thru the plan of the wall above the inscription and relates the wall label to the catalogue . . . There are none in America" (quoted in Kantor, *Alfred H. Barr, Jr.*, 188)
39. Kantor, *Alfred H. Barr, Jr.*, 221.
40. Alfred H. Barr Jr., *A Brief Survey of Modern Painting*, 18.
41. *Ibid.*, 1.
42. "For Your Own Collection of Modern Paintings," pamphlet, 1932, Department of Circulating Exhibitions Records, series II, folder 1.42.2, MoMA Archives, NY.
43. "The Art of Printing Color Reproductions," Department of Circulating Exhibitions Records, series II, folder 1.42.2.1, MoMA Archives, NY.
44. "For Your Own Collection of Modern Paintings."
45. In a letter dating from 1932, Raymond & Rissling proposed taking responsibility for all shipping and handling, sending bills on museum letterhead. "Extracts from Letter from Raymond & Rissling August 15, 1932," Department of Circulating Exhibitions Records, series II, folder 1.42.2.1, MoMA Archives, NY.
46. The first noncirculating exhibition that included photography at MoMA was *Murals by American Painters and Photographers* in May 1932. This exhibition looked

at the “increasing interest in mural decoration” and commissioned dozens of artists to participate (MoMA, “American Mural Exhibit to Open New Home of MoMA,” press release, April 23, 1932). Thirty-five painters contributed, as did eight photographers, including Edward Steichen, Berenice Abbott, and Charles Sheeler. Despite acknowledging the exciting possibilities of the medium of photomurals, MoMA’s press release carefully noted, “These [photographic] exhibits will be hung in a room to themselves so as not to compete unnecessarily with the actual mural paintings” (MoMA “Photographic Murals,” press release, 1932).

47. See Phillips, “Judgement Seat,” 30; Lynes, *Good Old Modern*, 107.

48. Oral history interview with Walker Evans, October 13–December 23, 1971. Archives of American Art, Smithsonian Institution (hereafter Evans Oral History, AAA).

49. Barnaby Haran examines the conceptual confusion around the definition of photography illustrated by this exhibition in “Homeless Houses: Classifying Walker Evans’s Photographs of Victorian Architecture,” *Oxford Art Journal* 33, no. 2 (June 2010): 189–210.

50. MoMA, “First One-Man Photography Exhibit—Walker Evans American Photographs,” press Release, September 19, 1938.

51. *Ibid.*

52. Phillips, “Judgement Seat,” 28.

53. See Whitehead, *The Making of the Museum of Modern Art’s Photography Canon*.

54. This is a primary argument in Whitehead as well as in John Tagg, “Melancholy Realism: Walker Evans’s Resistance to Meaning,” *Narrative* 11, no. 1 (January 2003): 3–77. Trudy Wilner Stack also examines Evans’s role in the consolidation of photography discourse at MoMA in “The Museological Mise en Scène: Walker Evans, American Photographs, and The Museum of Modern Art,” *Art Documentation: Journal of the Art Libraries Society of North America* 13, no. 4 (Winter 1994): 13–18.

55. Evans Oral History, AAA.

56. MoMA, “First One-Man Photography Exhibit—Walker Evans American Photographs,” press release, September 13, 1938.

57. I am indebted to the research of Virginia-Lee Webb, who in her article “Art as Information: The African Portfolios of Charles Sheeler and Walker Evans” (*African Arts* 24, no. 1 [January 1991]: 56–63, 103–104) and her exhibition catalogue *Perfect Documents: Walker Evans and African Art* (The Metropolitan Museum of Art, 2000) carefully documented the iterations of Evans’s photography, the portfolios, and the circulating exhibitions that emerged from this encounter.

58. MoMA, “African Negro Exhibit to Open,” press release, March 6, 1935.

59. Gikandi, “Picasso, Africa, and the Schemata of Difference,” 457.

60. Rasheed Araeen, “From Primitivism to Ethnic Arts,” *Third Text* 1 (1987): 11.

61. Hal Foster, “The ‘Primitive’ Unconscious of Modern Art,” *October* 34 (Autumn 1985): 47.

62. Multiple scholars have explored how the history of photography is intimately entwined with social and technological efforts to legitimize colonial worldviews.

Photography's ability to exoticize, aestheticize, and naturalize violence and to subject and discipline bodies through incorporation into an archive or exhibition has been surveyed by, among others, Anne Maxwell, *Colonial Photography & Exhibitions: Representations of the "Native" People and the Making of European Identities* (London: Leicester University Press, 1999), as well as in classic texts by John Tagg, Allan Sekula, and others (Tagg, *The Burden of Representation*; Sekula, "The Body and the Archive," October 39 [Winter 1986]: 3–64).

63. Alfred H. Barr, letter to David H. Stevens, director of humanities, The Rockefeller Foundation, February 18, 1935, cited in Webb, *Perfect Documents*, 28.

64. Webb, *Perfect Documents*, 33.

65. Recipients of the free portfolios are Atlanta University, Fisk University, Hampton Institute, Tuskegee Normal Industrial Institute, Howard University, Dillard University, and Schaumburg Center for Research in Black Culture. Two more were gifted to MoMA and Sweeney, and the rest were purchased for a nominal fee by institutions around the world. Purchasers of the portfolio were New York University, Harvard University, Musée de l'Homme, Paris, University of Chicago, Dartmouth College, Robert Goldwater, and Frederick Rhodes Pleaseants. Goldwater had 35-mm slides of the photographs made for teaching purposes.

66. In a critique of the 1984 exhibition *Primitivism in 20th Century Art: Affinity of the Tribal and the Modern*, Clifford has also discussed at length the discourse of affinities promoted by MoMA. He argues that the origin story of modern art depends on the discourse of affinities, which has a particular chronotope of "tribal" and "modernity" embedded within it: it requires artifacts to be outside of modernity in order to be redeemable within it. Crucially, he argues that this is achieved through modern technology of the camera. "Histories of the Tribal and the Modern," in *The Predicament of Culture: Twentieth-Century Ethnography, Literature, and Art* (Cambridge, MA: Harvard University Press, 1988), 189–214.

67. Clifford, "On Collecting Art and Culture," in *The Predicament of Culture: Twentieth-Century Ethnography, Literature, and Art* (Cambridge, MA: Harvard University Press, 1988), 217.

68. Lynes, *Good Old Modern*, 118.

69. Gregory J. Downey, "Making Media Work," in *Media Technologies*, edited by Tarleton Gillespie, Pablo J. Boczkowski, and Kirsten A. Foot (Cambridge, MA: MIT Press, 2014), 152.

70. Lynes, *Good Old Modern*, 261.

71. "Circulating Exhibitions Department—General Routine for Circulation Manager," Department of Circulating Exhibitions Records, I.7.6.7, MoMA Archives, NY.

72. *Ibid.*

73. MoMA, "New Technique of Multiple Circulating Exhibitions on Display at the Museum of Modern Art," press release, March 6, 1945.

74. *Ibid.*

75. An early, yet undated memo about library fundraising notes that the collection of the 2,000 lantern slides was the most popular service in the library ("An Effort

to Raise \$10,000 for the Museum of Modern Art Library,” undated memo, Beaumont Newhall Papers, I.1, MoMA Archives, NY). By the 1960s, however, the service had fallen into disrepair as the slide material deteriorated. In 1961, the museum entered into an agreement with the color slide company Sandak, in which Sandak produced, stored, and sold color slides of MoMA collection works and select exhibitions. (“Agreement between the Museum of Modern Art and Sandak Incorporated,” July 1960, Reports and Pamphlets, series 5, folder 9, MoMA Archives, NY.) After this, the slide rental service seems to have ceased.

76. Bernard Karpel, “The Library,” *The Bulletin of the Museum of Modern Art* 11, no. 3 (January 1944): 4.

77. Oral History Program, interview with Pearl Moeller, 1991, 40. MoMA Archives, NY.

78. See Lynes, *Good Old Modern*, 347–348; “Bernard Karpel Dies; A Bibliographer of Art,” *New York Times*, January 21, 1986. His longtime staffer and colleague Pearl Moeller recalled, “Many of the things that are done on computer with pictures now, Bernard foresaw. He was way ahead of the game” (Oral History Program, interview with Pearl Moeller, 1991, 25. MoMA Archives, NY). I contrast Karpel’s innovative ideas about visual cataloguing with those of Romana Javitz in Diana Kamin, “Mid-Century Visions, Programmed Affinities: The Enduring Challenges of Image Classification,” *Journal of Visual Culture* 16, no. 3 (December 2017): 310–36.

79. Oral History, Moeller, 73, MoMA Archives, NY.

80. *Ibid.*, 31.

81. *Ibid.*, 36. This mention of advertisers indicates the overlap in industries that are surveyed throughout this book. For much of the twentieth century, the same advertiser might visit the NYPL Picture Collection at 5th Avenue and 42nd Street, MoMA on 53rd Street between 5th and 6th Avenues, and H. Armstrong Roberts at the Graybar building on Lexington Avenue and 44th Street.

82. 1962 Photography Report, Reports and Pamphlets, 5.13, MoMA Archives, NY, 41–42.

83. Oral history, Moeller, 46.

84. See, among others, Mar Hicks, *Programmed Inequality: How Britain Discarded Women Technologists and Lost Its Edge in Computing* (Cambridge, MA: MIT Press, 2017); Gregory Downey, “Virtual Webs, Physical Technologies, and Hidden Workers: The Spaces of Labor in Information Internetworks,” *Technology and Culture* 42, no. 2 (2001): 209–235; Venus Green, *Race on the Line: Gender, Labor, and Technology in the Bell System, 1880–1980* (Durham, NC: Duke University Press, 2001); Jennifer Light, “When Computers Were Women,” *Technology and Culture* 40, no. 3 (1999): 455–483; Heidi I. Hartmann, Robert E. Kraut, and Louise A. Tilly, eds., *Computer Chips and Paper Clips: Technology and Women’s Employment*, 2 vols. (Washington, D.C.: National Research Council, 1986–1987).

85. Biographical note and personal memoir of Soichi Sunami, typescript, 1975, MoMA Library Special Collections.

86. MoMA was likely the first museum to systematically produce installation photographs. Yet, up until the 1960s, only about three-quarters of the exhibitions on view were photographed, due to budgetary concerns. [http://www.moma.org/explore/inside\\_out/author/tgrischk](http://www.moma.org/explore/inside_out/author/tgrischk).
87. Oral History, Moeller, 39.
88. Oral history, Moeller, 72.
89. Oral history, Moeller, 42.
90. *Ibid.*, 25.
91. *Ibid.*, 42.
92. Already in 1946, Wheeler reported that book sales had increased 300 percent in the past three years. In addition to book sales, Wheeler oversaw sales of color reproductions and postcards. (“The Minutes of the Sixteenth Annual Meeting of the Board of Trustees and Members of the Corporation of the Museum of Modern Art Held on Thursday, November 15, 1945 at 5 o’Clock in the Trustees’ Room,” *The Bulletin of the Museum of Modern Art*, vol. 13, no. 3, The Minutes of the Sixteenth Annual Meeting [February 1946], 11). A 1944 publication reveals his strategy to make larger editions in order to make book publishing more cost-effective. Also significant was that at that time, selling color reproductions was “more remunerative” (Monroe Wheeler, “The Art Museum and the Art Book Trade,” *Museum News* 24, no. 2 [1946]: 8).
93. Oral history, Moeller, 42.
94. Alain Pottage and Brad Sherman, *Figures of Invention: A History of Modern Patent Law* (Oxford: Oxford University Press, 2010), 32.
95. Anita Duquette, manager of rights and reproduction, Whitney Museum of American Art, in discussion with author, January 14, 2014.
96. *Bridgeman Art Library Ltd. v. Corel Corp.*, 36 F. Supp. 2d 191 (S.D.N.Y. 1999).
97. 1962 Photography Report, Reports and Pamphlets, series 5, folder 13, The Museum of Modern Art Archives, New York.
98. *Ibid.*, 40.
99. 1962 Photography Report, 17.
100. Memo from John Szarkowski to Dick Koch, January 29, 1963, Reports and Pamphlets, 5, no. 13, MoMA Archives, NY.
101. Philip Gefter, “John Szarkowski, Curator of Photography, Dies at 81,” *New York Times*, July 9, 2007.
102. Newhall, *The History of Photography: From 1839 to the Present Day* (New York: Museum of Modern Art, 1949), 140, 143. Italics by author. Newhall’s use of the passive voice to describe the state of aesthetic discourse is telling: of course, it was primarily MoMA that was exploring functional architecture, machine art, and the moving picture; this linguistic framing betrays MoMA’s self-image as mere barometer for intellectual currents churning outside the museum, rather than a key player setting the terms.
103. *Ibid.*



104. Sophie Hackett traces the intellectual currents around straight photography and the machine aesthetic in “Beaumont Newhall and a Machine: Exhibiting Photography at the Museum of Modern Art in 1937,” translated by Marine Sangis, *Études photographiques* 23 (May 2009), <https://journals.openedition.org/etudesphotographiques/2656>.

105. See discussion of Atget and “simple documents” in chapter 1.

106. This is the number most frequently cited, most likely based on a c. 1968 circular from Abbott about her collection. It appears in Beaumont Newhall, “Berenice Abbott 1898–1991,” *American Art* 6, no. 1 (Winter 1992): 111–13, among other citations. However, George Eastman House cites 5,000 original prints, [http://notesonphotographs.org/index.php?title=Eug%C3%A8ne\\_Atget/Provenance\\_and\\_Significant\\_Collections](http://notesonphotographs.org/index.php?title=Eug%C3%A8ne_Atget/Provenance_and_Significant_Collections).

107. Berenice Abbott, *The World of Atget* (New York: Horizon Press, 1964), x.

108. This was a decision she later regretted; see Hank O’Neal, *Berenice Abbott* (New York: Thames and Hudson, 2010), 7. Interestingly, Levy gave an entirely different report to Russell Lynes during his research for *Good Old Modern*. Levy claimed that Abbott sought out Atget at his suggestion and purchased the material on his behalf. Levy at that time was showing Surrealist artists and was one of the only galleries to consistently exhibit photography. Lynes, 329–330.

109. Berenice Abbott, ed., *Atget: Photographe de Paris*, preface Pierre Mac-Orlan (New York: E.Weyhe, 1930); Abbott, “Eugène Atget,” *Creative Art* V (1929): 651–659; Abbott, “Eugène Atget; Forerunner of Modern Photography,” pt. 1, *U.S. Camera* I (November 1940): 21–23, 48–49, 76; “Eugène Atget; Forerunner of Modern Photography,” pt. 2, *U.S. Camera* I (December 1940), 68–71; Abbott, *New Guide to Better Photography*, rev. ed. (New York: Crown Publishers, 1956); Abbott, *20 Photographs by Eugène Atget*, portfolio with introduction (New York, 1956); Abbott, ed. and introd., *The World of Atget* (New York: Horizon Press, 1964).

110. Nesbit, *Atget’s Seven Albums*, 7.

111. Abbott, “Eugène Atget: Forerunner of Modern Photography,” *U.S. Camera* I (November 1940): 76.

112. Abbott, *The World of Atget*, viii.

113. Quoted in John Russell, “Atget,” *New York Times Magazine*, September 13, 1981, 55–58.

114. Exhibition checklist notes nineteen prints, three scrapbooks, and an album. Matthew Brady is the only photographer with more prints, with twenty-one in total.

115. “Atget at the Museum of Modern Art,” press release, November 1969.

116. This baldly commercial service was only possible at a particular historical juncture and would be discouraged today, as museums are expected to operate without the influence of market factors: there are troubling opportunities for speculation if patrons and curators collaborate on purchases (a problem that has been more acute in the past two decades, as the art market has soared to vertiginous heights). At mid-century, however, MoMA curators frequently encouraged the sale of contemporary works on view, mostly through casual correspondence with patrons. As an example,

Dorothy Miller's papers related to the organization of her series of "Americans" shows, which showcased contemporary American artists between 1942 and 1963, are littered with assurances to artists that she thinks their works will sell and correspondence with interested collectors offering to help facilitate sales.

117. Jacob Deschin, "Museum Takes in \$2,200 on Sale of Pictures," *New York Times*, October 30, 1960, X14.

118. Departmental questionnaire and responses, 1960, Art Lending Service and Art Advisory Service Records, I.C.3, MoMA Archives, NY.

119. See correspondence from Arthur M. Bullowa to John Szarkowski, 1963–1964, Art Lending Service and Art Advisory Service Records, I.C.4, MoMA Archives, NY. Note—unlike painting and sculpture, there were no rental fees for photography; the photographs seem to have been offered for outright purchase only.

120. Statistics, August 1965, Art Lending Service and Art Advisory Service Records, I.C.5, MoMA Archives, NY.

121. See Committee minutes from 4.23.68, 5.28.68, and 7.31.68, Art Lending Service and Art Advisory Service Records, I.C.6, MoMA Archives, NY.

122. MoMA, "Eugene Atget Archive," press release, September 29, 1968. (Once again, passive voice elides the active role of MoMA in defining the course of this "direction.")

123. "Contemporary Photographs by Obsolete Processes at Art Institute," exhibition, Art Institute of Chicago, 1967.

124. Ibid.

125. Brochure n.p., 1979, Art Lending Service and Art Advisory Service Records, I.C.8, MoMA Archives, NY.

126. Ibid.

127. Ibid.

128. "Atget Sales," c. 1979, Art Lending Service and Art Advisory Service Records, I.C.8, MoMA Archives, NY.

129. Andy Grundberg, "Photography: A 'Modern' Atget Portfolio," *Art in America* 67, no. 1 (January/February 1979): 42–43.

130. Grundberg goes on to endorse MoMA's aesthetic decision by comparing the MoMA portfolio to a contemporaneous printing in France in which the publisher used the most modern paper available in order to reveal more information in the prints than Atget's previous prints could produce. Though the latter was done in order to honor Atget's intent as a documentarian, Grundberg finds the prints lacking: "dull and lumpish, whereas the Modern's are airy, expressive, and convincing." Ibid., 49.

131. Krauss, "Photography's Discursive Spaces"; Nesbit, *Atget's Seven Albums*; and Wolfgang Brückle, "On Documentary Style: 'Anti-Graphic Photography' between the Wars," *History of Photography* 30, no. 1 (2006): 68–79.

132. Nesbit, *Atget's Seven Albums*, 81.

133. See notes 10, 11 in this chapter.

134. Lynes, *Good Old Modern*, 261.
135. Sekula, "Reading an Archive," 123.
136. Oral History Program, interview with Richard Tooke, 1991, 19. MoMA Archives, NY.
137. Kirstein, "Walker Evan's Photographs of Victorian Architecture."

### CHAPTER 3

1. David Brooks, "Does Decision Making Matter?" *New York Times*, November 26, 2016, <https://www.nytimes.com/2016/11/25/opinion/does-decision-making-matter.html>.
2. Amanda Kill as told to Juno DeMelo, "I Breastfed an Adopted Baby for 7 Months," *New York Magazine*, October 7, 2016, <https://www.thecut.com/2016/10/i-breastfed-an-adopted-baby-for-7-months.html>.
3. As Susan Buck-Morss writes, "It was the Baroque poets who demonstrated to Benjamin that the 'failed material' of his own historical era could be 'elevated to the position of allegory.' What made this so valuable for a dialectical presentation of modernity was that allegory and myth were 'antithetical.' Indeed, allegory was the 'antidote' to myth, and precisely this was 'to be demonstrated' in the Pasagen-werk" (Susan Buck-Morss, *The Dialectics of Seeing: Walter Benjamin and the Arcades Project* [Cambridge, MA: MIT Press, 1991]), 164.
4. Please note that throughout this chapter, when referring to the agency, I will use H. Armstrong Roberts Company. The founder of the agency and the primary subject of this study is referred to as Roberts Sr., his son as Roberts Jr., and his grandson and current president as Roberts III.
5. Since Getty Images was founded in 1995 with the purchase of Tony Stone Images, they have steadily bought up major stock agencies. Significant acquisitions include the purchase of The Image Bank from Eastman Kodak in 1999, Visual Communications Group in 2000, and Jupiterimages in 2008. Corbis Corporation, founded by Bill Gates in 1995 with the purchase of the Bettmann Archive, was Getty's largest rival, acquiring agencies like The Stock Market in 2000, before the Visual China Group, a partner of Getty Images, acquired it in 2016.
6. Stock Images and Videos Market—Global Outlook and Forecast 2019–2024, September 2019, <https://www.researchandmarkets.com/reports/4841565/stock-images-and-videos-market-global-outlook>.
7. For the contemporary treatment of stock photographs as an Internet meme, see <http://knowyourmeme.com/memes/stock-photography>. For the Leanin.org/Getty partnership, see Claire Cain Miller, "LeanIn.org and Getty Aim to Change Women's Portrayal in Stock Photos," *New York Times*, February 10, 2014, B3. For startups, see Kate Knibbs, "Instastock Wants to Turn Your Selfies into a Business Model," *Digital Trends*, August 26, 2015, <https://www.digitaltrends.com/social-media/is-instagram-changing-stock-photography-instastock/>. For art exhibitions, see *Ordinary Pictures*, Walker Art Center, Minneapolis, MN, February 27–October 2, 2016.

8. Erwin Goffman, *Gender Advertisements* (New York: Harper & Row), 1979.
9. Anne Collier is known for her deadpan rephotography of commercial images. In a 2013 series, she shoots several spreads of stock photography selections under categories like “social issues” and “gestures.” In *Unbranded: Reflections in Black Corporate America* (2005–2008), artist Hank Willis Thomas reveals the commodification of racial identity in commercial photography by stripping text and logos from decades of advertisements featuring Black models, highlighting the stereotypical representation.
10. Sarah Hartshorne, “I Was a Woman Laughing Alone with Salad, It’s Really Not That Funny,” *The Guardian*, March 5, 2014, <https://www.theguardian.com/women-in-leadership/2014/mar/05/woman-laughing-alone-with-salad>.
11. “The Gender Spectrum Collection: Stock Photos Beyond the Binary,” <https://genderphotos.vice.com/>, last modified January 21, 2020.
12. Paul Frosh, “Is Commercial Photography a Public Evil? Beyond the Critique of Stock Photography,” in *Photography and Its Publics*, edited by Melissa Miles and Edward Welch (London: Bloomsbury, 2020), 188.
13. J. Abbott Miller, “Pictures for Rent,” *Eye* 14, no. 4 (Autumn 1994), <http://www.eyemagazine.com/feature/article/pictures-for-rent>.
14. There are notable exceptions to this. Within the history of photography, Elspeth H. Brown explores the careers of early advertising photographers in the 1910s and 1920s, including Lejaren à Hiller, in the chapter “Rationalizing Consumption: Photography and Commercial Illustration,” in *The Corporate Eye: Photography and the Rationalization of American Commercial Culture, 1884–1929* (Baltimore: John Hopkins University Press, 2005). Michele H. Bogart’s exceptional study *Advertising, Artists, and the Borders of Art* (Chicago: University of Chicago Press, 1995) explores the field of commercial art from 1900–1950, capturing the emerging field of commercial advertising photography. Within media studies, in addition to Frosh, *The Image Factory*, see Frosh, “Rhetorics of the Overlooked: On the Communicative Modes of Stock Advertising Images,” *Journal of Consumer Culture* 2, no. 2 (July 1, 2002): 171–196; Frosh, “Digital Technology and Stock Photography: And God Created Photoshop,” in *Image Ethics in the Digital Age*, edited by Larry Gross et al. (Minneapolis: University of Minnesota Press, 2003); Frosh, “Beyond the Image Bank: Digital Commercial Photography,” in *The Photographic Image in Digital Culture*, 2nd ed., edited by Martin Lister (Routledge: London, 2013), 131–148. Other media theoretical work on stock photography has appeared first in German. Estelle Blaschke, *Banking on Images: The Bettmann Archive and Corbis* (Leipzig: Spector Books, 2015), originally published in German, was translated in 2015. See also Diethard Krebs, Walter Uka, and Brigitte Walz-Richter, *Die Gleichschaltung der Bilder. Zur Geschichte der Pressefotografie 1930–1936* (Berlin: Froelich & Kaufmann, 1983); Matthias Bruhn, *Bildwirtschaft: Verwaltung und Verwertung der Sichtbarkeit* (Weimar: Verlag und Datenbank für Geisteswissenschaften, 2003).
15. Frosh, *The Image Factory*, 36.
16. Blaschke argues that the 1920s are an essential decade for the consolidation of a new type of conception of the image as an industrial product. For her study, she looks to the German example of Otto Bettmann, who amassed a library of

reproductions in Berlin by purchasing collections from other photographers or acquiring photographs of images held in public collections. He moved with this collection to the United States in 1935 and made a significant impact on the stock industry here. Corbis purchased his collection, the Bettmann Archive, in 1995. See Blaschke, *Banking on Images*.

17. A 1931 profile notes that branch offices operated in “principal cities in Europe” (“H. Armstrong Roberts: He Holds a Mirror,” *The Home of Today* 3, no. 10 [Williams Oil-O-Matic Heating Corporation, May 1931]: 4).

18. H. Armstrong Roberts III in discussion with author, April 26, 2016.

19. Michael Twyman, *Printing 1770–1970: An Illustrated History of Its Development and Uses in England* (London: Eyre & Spottiswoode, 1970). As historian Neil Harris puts it, due to halftone printing, “The single generation of Americans living between 1885 and 1910 went through an experience of visual reorientation that had few earlier precedents.” Neil Harris, “Iconography and Intellectual History: The Halftone Effect,” in *Cultural Excursions: Marketing Appetites and Cultural Tastes in Modern America* (Chicago: University of Chicago, 1990), 307.

20. Mia Fineman, “Kodak and the Rise of Amateur Photography,” *The Heilbrunn Timeline of Art History*, October 2004, [http://www.metmuseum.org/toah/hd/kodk/hd\\_kodk.htm](http://www.metmuseum.org/toah/hd/kodk/hd_kodk.htm).

21. Form 272, Army Transport Service, August 10, 1902, in H. Armstrong Roberts Company Archives, Philadelphia, CA (unprocessed, hereafter cited at HARC Archive, PA). H. Armstrong Roberts III in discussion with author, April 26, 2016.

22. “Returns from 2500 Mile Ride in Mexico,” c. 1907; “Writer and Artists on 10,000 Mile Walk,” *Philadelphia Evening Post*, 1908. Newspaper clippings located in HARC Archive, PA.

23. This biographical fact and the others in this section are drawn from the following biographical pieces published about Roberts Sr.: “The Pictures and the Man Who Made Them,” *Studio Light: A Magazine of Information about the Profession*, Eastman Kodak, November 1924, 10–16; “H. Armstrong Roberts: He Holds a Mirror,” *The Home of Today* 3, no. 10 (Williams Oil-O-Matic Heating Corporation, May 1931): 2–5; Frank Cunningham, “H. Armstrong Roberts: Specialist in ‘Stock Photographs,’ Part 1,” *The Commercial Photographer* 18, no. 11 (August 1943): 351–356; and Frank Cunningham, “H. Armstrong Roberts: Specialist in ‘Stock Photographs,’ Part 2,” *The Commercial Photographer* 18, no. 12 (September 1943): 387–390.

24. Hannah Higgins, *The Grid Book* (Cambridge, MA: MIT Press, 2009), 134.

25. H. Armstrong Roberts III in discussion with author, April 26, 2016.

26. Kate Peters, “Collector’s Pictures Cover the World,” c. 1940s. Newspaper clipping located in HARC Archive, PA.

27. Brown, *The Corporate Eye*, 208.

28. H. Armstrong Roberts III in discussion with author, June 17, 2015.

29. See Bogart, *Advertising, Artists*.

30. See Daniel Pope, *Making of Modern Advertising* (New York: Basic Books, 1983), 139–40.
31. At H. Armstrong Roberts Company, they have a specific term for this usage for their licensing agreements, deemed “Artist Reference.”
32. Bogart, *Advertising, Artists*, 183.
33. See Vicki Goldberg, *Margaret Bourke-White: A Biography* (New York: HarperCollins, 1986).
34. Bogart, *Advertising, Artists*, 171.
35. “The Pictures and the Man Who Made Them,” *Studio Light: A Magazine of Information about the Profession*, Eastman Kodak, November 1924, 10–16; “H. Armstrong Roberts: He Holds a Mirror,” *The Home of Today* 3, no. 10 (Williams Oil-O-Matic Heating Corporation, May 1931): 2–5.
36. “The Pictures and the Man Who Made Them,” 10.
37. “H. Armstrong Roberts: He Holds a Mirror,” 4.
38. Text from advertisement for *Life* that ran in December 1936 issue of *Fortune*.
39. Quoted in Loudon Wainwright Jr., *The Great American Magazine: An Inside History of Life* (New York: Knopf, 1986), 94.
40. Goldberg, *Margaret Bourke-White*, 98–99.
41. From the original prospectus of *Life*, excerpted in “Life Reports to Its Readers with Great Thanks,” *Life*, July 11, 1938, n.p.
42. H. Armstrong Roberts III, in conversation with author, April 26, 2016.
43. Markus Krajewski, *Paper Machines: About Cards & Catalogues 1548–1929* (Cambridge, MA: The MIT Press, 2011).
44. Krajewski, *Paper Machines*, 137.
45. Mattern, see note 40 in Introduction.
46. Robertson, *The Filing Cabinet*, 105.
47. *Ibid.*
48. H. Armstrong Roberts III, in conversation with the author, June 17, 2015.
49. Robertson, *The Filing Cabinet*, 6.
50. Krauss, “Photography’s Discursive Spaces”; Tagg, “The Archiving Machine.”
51. Lev Manovich, “Database as a Symbolic Form,” *Convergence: The Journal of Research into New Media Technologies* 5, no. 2 (Summer 1999): 80–99.
52. Wolfgang Ernst, *Digital Memory and the Archive* (Minneapolis: University of Minnesota Press, 2012).
53. This is discussed in detail in Markus Krajewski, “Paper as Passion: Niklas Luhmann and His Card Index,” in “*Raw Data*” Is an Oxymoron, edited by Lisa Gitelman (Cambridge, MA: MIT Press, 2013), 103–120.
54. H. Armstrong Roberts III, in conversation with author, June 17, 2015.

55. Shannon Mattern, "The Spectacle of Data: A Century of Fairs, Fiches, and Fantasies," *Theory, Culture & Society* 37, nos. 7–8 (2020), <https://doi.org/10.1177/026327642095805>.
56. Roberta Groves, in conversation with author, May 23, 2016. Addresses confirmed by New York City Telephone Directories, 1979.
57. Advertisement in HARC Archive, PA.
58. H. Armstrong Roberts III, in conversation with author, August 21, 2017.
59. Ibid.
60. Mitchell, *What Do Pictures Want?*
61. Igor Kopytoff, "The Cultural Biography of Things: Commoditization as Process," in *The Social Life of Things*, edited by Arjun Appadurai (Philadelphia: University of Pennsylvania Press, 1986), 74.
62. Arthur C. Martinez, *The Hard Road to the Softer Side: Lessons from the Transformation of Sears* (New York: Crown Business, 2001), 39. See also Boris Emmet and John E. Jeuck, *Catalogues and Counters: A History of Sears, Roebuck and Company* (Chicago: University of Chicago Press, 1950).
63. Matthew Hockenberry, "The Supply House: Catalogues and Commerce," *Thresholds* 49 (2021): 43.
64. Alain Pottage and Brad Sherman, *Figures of Invention: A History of Modern Patent Law* (Oxford: Oxford University Press, 2010), 37. Thank you to Matthew Hockenberry for pointing me toward this analysis.
65. The first catalogue that Roberts III has identified is from 1930 and consisted of an embossed, custom-made file folder that would hold several sheets printed as brochures, with a selection of images surrounding a marketing blurb.
66. Roberts III, in discussion with author, August 21, 2017.
67. Catalogue dated July 28, 1939, HARC Archive, PA.
68. 1897 Sears catalogue, quoted in Martinez, 39.
69. Pictures bound "for ink," as photography curator John Szarkowski has put it, tend to produce a certain aesthetic in advance: "Each method of transmitting information has its own structural prejudices, its own favorite kinds of information, which are those it describes most easily and most precisely" (John Szarkowski, "Photographs in Ink," *MoMA Bulletin* 2, no. 3 [Winter 1990]: 9).
70. "The Pictures and the Man Who Made Them." There is no byline for the article, and according to the speculation of H. Armstrong Roberts III, in conversation with author, April 26, 2016, Roberts might have written the copy himself. The article discusses Roberts Sr.'s "three months photographing winter sports and snow scenes, traveling on skis, snowshoes, and by dog sled," and how one group of photos was the result of "a two months trip by horse and canoe to provide pictures for folders and booklets" ("Pictures and the Man Who Made Them," 14).
71. "The Pictures and the Man Who Made Them," 12.
72. Ibid.

73. Pay stubs dated 1930 show Doris Day on the payroll, HARC Archives, PA.
74. Roberts III, in discussion with author, April 25, 2016.
75. Census of Telephones, 1922, Department of Commerce, Bureau of the Census.
76. Juliann Sivulka, *Soap, Sex, and Cigarettes: A Cultural History of American Advertising* (Belmont, CA: Wadsworth, 2011), 64.
77. T. J. Jackson Lears, "From Salvation to Self-Realization: Advertising and the Therapeutic Roots of the Consumer Culture, 1880–1930," in *The Culture of Consumption: Critical Essays in American History*, edited by Lears and Richard Wightman Fox (New York: Pantheon Books, 1983).
78. Roberts III, in discussion with author, April 27, 2016.
79. Frosh, *The Image Factory*, 84.
80. "Pictures and the Man Who Made Them," 12.
81. A 1947 catalogue promises: "Real people populate the files of H. Armstrong Roberts. This is one of the reasons why art buyers in such large numbers prefer our work. They know that the likable, believable people who appear in Roberts photographs provide an important note of realism which pays off in reader interest." Catalogue in HARC Archives, PA.
82. This argument began as early as 1913, when Eastman Kodak produced a booklet encouraging commercial photographers to take up advertising photography (previously a sliver of the commercial photography trade) (Brown, *The Corporate Eye*, 171).
83. *Printer's Ink*, May 16, 1929, 137. Quoted in Bogart, *Advertising, Artists*, 198.
84. "The Camera in Advertising," *Abel's Photographic Weekly*, May 13, 1922, 526. Quoted in Bogart, *Advertising, Artists*, 197.
85. Roland Marchand, *Advertising the American Dream: Making Way for Modernity 1920–1940* (Berkeley: University of California Press, 1985), 150.
86. "Commercial Illustrations with an Uncommercial Atmosphere," *Printer's Ink*, August 17, 1922, 49.
87. See André Bazin, "The Ontology of the Photographic Image," translated by Hugh Gray, *Film Quarterly* 13, no. 4 (Summer 1960); Susan Sontag, *On Photography* (New York: Rosetta Books, 2005 [1973]); and Roland Barthes, *Camera Lucida* (New York: Farrar, Straus, Giroux, 1980). For a contemporary reckoning with indexicality, see Mary Anne Doane, ed., "Indexicality: Trace and Sign," a special issue of *Differences: A Journal of Feminist Cultural Studies* 18, no. 1 (Spring 2007).
88. "The Pictures and the Man Who Made Them," 10.
89. Paul Strand, "Photography," *Seven Arts* 2, 524–525 (Aug. 1917), reprinted in *Camera Work* 49–50 (June 1917), 3.
90. *Ibid.*
91. Elspeth H. Brown has argued that the success of pictorialist photographer Lejaren à Hiller as an advertising photographer in the late teens demonstrates that the embrace of narrative in photography happened earlier than acknowledged in



other accounts of this period (such as Bogart, *Advertising, Artists*). I see Hiller as a unique example of a photographer who was hired for a particular aesthetic to produce commissioned work, as opposed to Roberts who made a career on building a library of abstracted concepts and subjects . . . or other commercial photographers seeking a career in advertising photography.

92. Bogart, *Advertising, Artists*, 197–98.

93. Frank Cunningham, “H. Armstrong Roberts, Specialist in ‘Stock Photographs,’” *Commercial Photographer* XVIII, no. 11 (August 1943): 352.

94. In each issue of *Roughs*, a few dozen images on a particular topic are spread out over a folded photostatted broadside, with negative numbers listed. Clients could then mail in, phone in, or send telegraph orders for the specific image they saw in the mailer or might request to see similar images on the theme.

95. In general, subcategories were created for the broad category headings in an unscientific way—when the number of prints warranted multiple boxes. Images of hands were such a large subcategory of the Symbolic file that Symbolic-No-Hands became its own subject subheading. Another large subheading was Symbolic-Currency (H. Armstrong Roberts III, interview with the author, August 21, 2017).

96. John Frow, *Genre* (New York: Routledge, 2006), 14.

97. Janet Giltrow, “Meta-Genre,” in *The Rhetoric and Ideology of Genre: Strategies for Stability and Change*, edited by Richard Coe, Lorelai Lingard, and Tatiana Teslenko (Cresskill, NJ: Hampton Press, 2002), 203. Giltrow is talking specifically about “meta-genre” here, the way that we talk about genre as that which shapes discourse.

98. Walter Benjamin, *The Origin of German Tragic Drama*, translated by John Osborne (New York: Verso, 1998), 175. As Benjamin writes, “If the ‘power of the framework,’ as it has appropriately been called, is really one of the essential features which distinguish the ancient attitude from the modern, in which the infinite and varied range of feelings or situations seems to be self-evident, then this power cannot be separated from tragedy itself” (Benjamin, *The Origin of German Tragic Drama*, 115). Susan Buck-Morss has written the critical theory of the dialectical image and interpretation of Benjamin’s treatment in *The Dialectics of Seeing*.

99. Craig Owens, “The Allegorical Impulse: Toward a Theory of Postmodernism” (*October* 12 [Spring 1980]: 67–86). The Benjamin quote that opened this chapter was also used as the epigraph of this Owens article (and later used as an epigraph to Sekula, “Reading an Archive”). These are intentional references. The concept of allegory and Owens’s gloss on Benjamin are an essential aspect of my interpretation of the genre of the stock image.

100. Owens, “The Allegorical Impulse,” 72, 68.

101. Bainard Cowan, “Walter Benjamin’s Theory of Allegory,” *New German Critique* no. 22, Special Issue on Modernism (Winter 1981): 110.

102. Roland Barthes, *Mythologies* (New York: Macmillan, 1972), 240.

103. Buck-Morss, *The Dialectics of Seeing*, 164.

104. Jacques Derrida, “The Law of Genre,” translated by Avital Ronnell, *Critical Inquiry* 7, no. 1 (Autumn 1980): 55–81.

105. Ulrich Keller, “Photojournalism around 1900: The Institutionalization of a Mass Medium,” in *Shadow and Substance: Essays on the History of Photography in Honor of Heinz K. Henisch*, edited by Kathleen Collins (Bloomfield Hills, IN: Amorphous Press, 1990), 283–303.

106. One competitor, Harold Lambert, worked for H. Armstrong Roberts as a staff photographer in the 1930s before starting his own business roughly in 1940. The Lambert Studios catalogues he produced follow the same layout and thematic organization, suggesting that he adopted Roberts’s catalogue design and negative numbering system.

107. Susan Sontag, *On Photography* (New York: Farrar, Straus & Giroux, 1977), 4.

108. Frosh makes a similar argument, that the intentional and indexical meanings of photography are inverted with stock photography. See Frosh, *The Image Factory*, 63.

109. Cunningham, “H. Armstrong Roberts, Specialist in ‘Stock Photographs,’” 351.

110. Roberts III, in conversation with author, April 26, 2016.

111. Roberts III, in conversation with author, June 24, 2020.

112. Safiya Noble, *Algorithms of Oppression* (New York: New York University Press, 2018). Quote from Google from Ben Guarino, “Google faulted for racial bias in image search results for black teenagers,” *Washington Post*, June 16, 2016.

113. See Timnit Gebru and Joy Buolamwini, “Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification,” *Proceedings of the 1st Conference on Fairness, Accountability and Transparency, Proceedings of Machine Learning Research* 81 (2018): 77–91; Kate Crawford and Trevor Paglen, “Excavating AI: The Politics of Images in Machine Learning Training Sets,” [www.excavating.ai](http://www.excavating.ai), among others.

114. See chap. 4 of Frosh, *The Image Factory*.

115. Roberts III insists that this is a function of their clients’ requests rather than the decision of the photographer, citing their depth of their representation of Black models throughout subjects, previously gathered under the “Negro” file. In 1979, when he took over the company, he integrated the contents of that file with relevant subjects. Roberts III, in discussion with author, June 24, 2020.

116. Barthes, *Camera Lucida*, 26.

117. *Ibid.*

118. Richard Steedman, in conversation with author, July 12, 2015.

## CHAPTER 4

1. Romana Javitz, “Words on Pictures. A Speech to the Convention of the Massachusetts Library Association, Boston, Massachusetts, January 28, 1943,” *The Massachusetts Library Association Bulletin* 33 (1943): 19. Italics added.

2. Siva Vaidhyanathan, *The Googlization of Everything (And Why We Should Worry)* (Berkeley: University of California Press, 2012), 44.

3. William F. Birdsall, "A Political Economy of Librarianship?" *Progressive Librarian* 18 (Summer 2001): 1. Birdsall first discussed the ideology of information technology in "The Internet and the Ideology of Information Technology: The Inter-Net: Transforming Our Society Now, INET 96," in Proceedings of the Annual Meeting of the Internet Society, June 25–28, 1996, Montreal, [http://www.crim.ca/inet96/papers/e3/e3\\_2.htm](http://www.crim.ca/inet96/papers/e3/e3_2.htm).
4. Daniel Greene, *Technology, Inequality, and the Political Economy of Hope* (Cambridge, MA: MIT Press, 2021).
5. Brandy Zadrozny, "These Disinformation Researchers Saw the Coronavirus 'Infodemic' Coming," *NBC News*, May 14, 2020, <https://www.nbcnews.com/tech/social-media/these-disinformation-researchers-saw-coronavirus-infodemic-coming-n1206911>.
6. Noble, *Algorithms of Oppression*, 152.
7. Birdsall, "A Political Economy."
8. Steve Morgenstern, "Scanners: Not a Black and White Choice Anymore," *Home Office Computing* 10, no. 2 (1992): 70.
9. See Geoffrey Batchen, "Phantasm: Digital Imaging and the Death of Photography," in *Metamorphoses: Photography in the Electronic Age*, *Aperture* no. 136 (Summer 1994): 46–51; Batchen, "Burning with Desire: The Life and Death of Photography," *Afterimage* 17, no. 6 (January 1990): 8–11; Anne-Marie Willis, "Digitisation and the Living Death of Photography," in *Culture, Technology and Creativity in the Late Twentieth Century*, edited by Philip Hayward (London: John Libbey, 1990), 197–208; David Tomas, "From the Photograph to Postphotographic Practice: Toward a Postoptical Ecology of the Eye," *SubStance* 17, no. 1 (1988): 59–68; and Fred Ritchin, *In Our Own Image: The Coming Revolution in Photography: How Computer Technology Is Changing Our View of the World* (New York: Aperture, 1990).
10. Ritchin, *In Our Own Image*, xii.
11. Daniel Rubinstein and Katrina Sluis, "Concerning the Undecidability of the Digital Image," *Photographies* 6, no. 1 (2013): 151–158.
12. Kevin Robins, *Into the Image: Culture and Politics in the Field of Vision* (London: Routledge, 1996), 156.
13. Timothy Druckrey, "L'Amour Faux," in *Digital Photography: Captured Images, Volatile Memory, New Montage*, edited by Marnie Gillett and Jim Pomeroy (San Francisco: Camerawork, 1988), 4.
14. See Tomas, "From the Photograph," 1988; Ritchin, *In Our Own Image*, 1990; and David D. Perlmutter, "The Internet: Big Pictures and Interactors," in *Image Ethics in the Digital Age*, edited by Larry Gross, John Stuart Katz, and Jay Ruby (Minneapolis: University of Minnesota Press, 2003), 1–25.
15. Daniel Rubinstein and Katrina Sluis, "The Digital Image in Photographic Culture: Algorithmic Photography and the Crisis of Representation," in Lister, *The Photographic Image* 28, no. 20.
16. *Ibid.*, 31.

17. See Gross et al., *Image Ethics in the Digital Age*, and Thomas H. Wheeler, *Phototruith or Photofiction? Ethics and Media Imagery in the Digital Age* (London: Routledge, 2002). For discussion of a landmark lawsuit challenging the legality of using stock photography to create digital collages, see Akiko Busch, “Stock and Security: FPG vs. Newsday,” *Print*, November/December 1995, 48.
18. Roberts III, in discussion with author, February 23, 2018.
19. Doug Dawirs, in discussion with author, September 19, 2017.
20. *Ibid.*
21. Dawirs attested to the fact that he had not heard any company refer to “digital asset management” before he started using the term (September 19, 2017). Reviewing trade literature, digital asset management is a legible commercial area of activity by 1995 but does not appear widely before then. (A 2002 article in *Macworld* notes that digital asset management “has become something of a buzzword in publishing circles over the last couple of years” [Bruce Fraser, “Digital-Asset Managers,” *Macworld* 19, no. 7 (July 2002): 28], and the earliest article located was 1995 [“Hollywood, Silicon Valley Unite for Animated World,” *Multimedia Week* (August 21, 1995): 1].)
22. “What Is Asset Management?” *ISO Standards for Asset Management*, accessed October 3, 2017, <http://www.assetmanagementstandards.com/>.
23. Jasmine E. Burns, “Information as Capital,” *VRA Bulletin* 45, no. 1 (October 2018): 7.
24. See JoAnne Yates, *Structuring the Information Age: Life Insurance and Technology in the Twentieth Century* (Baltimore: John Hopkins University Press, 2009).
25. See *Uniloc USA, Inc. et al v. DREAMSTIME.COM, LLC*. Testimony was provided to Ellen Boughn, who served as an expert witness on early online practices for the attorneys.
26. Roberts III, in discussion with author, May 23, 2016.
27. Roberts III, in discussion with author, June 24, 2020.
28. Roberts III, in discussion with author, August 15, 2016.
29. Yates, *Structuring the Information Age*, 5, 2.
30. Nanna Bonde Thylstrup, *The Politics of Mass Digitization* (Cambridge, MA: MIT Press, 2019), 3.
31. *Ibid.*, 5.
32. Roberts III, in discussion with author, August 15, 2016.
33. Roberts III, in discussion with author, February 23, 2018.
34. Retrofile was a joint venture between Xenofile Images Inc. and H. Armstrong Roberts Company marketing vintage stock photography from the H. Armstrong Roberts collection. The sale to Getty included the Retrofile brand name and trademark, the entire Black Box collection of 10,000 retro stock images that had been made available on Retrofile.com, and two thousand additional stock images from the H. Armstrong Roberts collection, for \$3 million. Jim Pickerell, “Retrofile Sold to Getty,” July 29,

2005, *Selling Stock*, <https://www.selling-stock.com/PrintArticle.aspx?id=5d0b9dd1-b9fe-4bc3-9d0e-58286680281f>.

35. Jim Zuckerman, *Shooting & Selling Your Photos* (Cincinnati, OH: Writer's Digest Books, 2003), 98.

36. Jim Pickerell, "Size of Market for Stock," *Selling Stock*, November 31, 1996, <http://www.selling-stock.com/Article/size-of-market-for-stock>.

37. Zuckerman, *Shooting & Selling*, 98.

38. Thomas Grischowsky, in discussion with author, March 21, 2016. Grischowsky was the archives specialist at the time of the interview and retired later that year.

39. Erik Landsberg, in discussion with author, September 21, 2017.

40. Suzanne Muchnic, "Technoarts in Cyberspace," *Los Angeles Times*, April 3, 1994, 4.

41. *Ibid.*

42. The first digital cameras used were digital scanback cameras—either Phase One or Better Light, in Landsberg's recollection. Scanback cameras function like nineteenth-century large-format cameras, in that an image is captured along a plane positioned at the back of a view camera with bellows. The scanback similarly has bellows with a large receptive surface at the back, but the difference is that the scanback captures a linear array of pixels row by row as it moves across the image plane, meaning each shot could take minutes to capture.

43. Landsberg was careful to mention that they did photograph black and white photography in color and that preserving subtle tonal differentiations in gelatin silver prints was important.

44. At the outset, these were burned onto Kodak Photo Discs, a proprietary format that became unsupported. Those early CDs were migrated to a more modern and nonproprietary format several years later. Landsberg, September 21, 2017.

45. See "About" page, StokeImaging.com, <http://stokesimaging.com/about.html>, accessed June 21, 2021.

46. Anthony Troncale, in discussion with author, December 17, 2020. Also confirmed by Nancy Melin Nelson and John Gabriel, "Searching, Retrieving, and Failing within Our Deadlines," *Information Today* 10, no. 11 (December 1993): 15.

47. Troncale, in discussion with author, December 17, 2020.

48. *Ibid.*

49. Julie van Haaften, "Digital Projects at the NYPL: Historical Overview," Power-Point presentation, September 2005.

50. Dawirs, in conversation with the author, September 19, 2017.

51. Jim Benson, "Getting the Picture," *Macworld* 10, no. 10 (October 1993): 130.

52. Robertson, *The Filing Cabinet*, 6.

53. See Robertson, *The Filing Cabinet*, chap. 5.

54. "Technology Case Study: DAM+TMS Art Database Integration," *Netx.net*, 2010, accessed April 20, 2016, <http://netx.net/moma-presents-netxposure-dam-tms-integration-2/>.

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56. Johanna Drucker, "Digital Ontologies: The Ideality of Form in/and Code Storage: Or: Can Graphesis Challenge Mathesis?" *Leonardo* 34, no. 2 (2001): 144.
57. Oral History Program, interview with Pearl Moeller, 1991, 48. MoMA Archives, NY.
58. Theodore Feder, in discussion with author, March 21, 2016.
59. Ibid.
60. Erik Landsberg, in discussion with author, September 21, 2017.
61. See Ted Striphas, *The Late Age of Print: Everyday Book Culture from Consumerism to Control* (New York: Columbia University Press, 2011), for parallel argument about the publishing industry.
62. van Haaften, "Digital Projects at the NYPL."
63. Richard Gartner, *Metadata: Shaping Knowledge from Antiquity to the Semantic Web* (New York: Springer, 2016), 2.
64. Ling-yuh W. (Miko) Pattie, "Henriette Davidson Avram, the Great Legacy," *Cataloging & Classification Quarterly* 25 (1998): 2–3, 67–81.
65. Pattie, "Henriette Davidson Avram," 68.
66. Lucia J. Rather and Beacher Wiggins, "Mother Avram's Remarkable Contribution," *American Libraries* 20, no. 9 (October 1989): 860.
67. Gartner, *Metadata*, 29.
68. MARC became American National Standards Institute (ANSI) standard in 1971 and an International Standards Organization (ISO) standard in 1973. Rather and Wiggins, "Mother Avram's Remarkable Contribution," 857.
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72. Rubinstein and Sluis, "Notes on the Margins of Metadata," 153.
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78. Nina Lager Vestberg, "The Photographic Image in Digital Archives," in *The Photographic Image in Digital Culture*, edited by Martin Lister (London: Routledge, 2013), 122.
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80. Jim Pickerell, “Impact of Major Agency Consolidation,” *Selling Stock*, January 6, 1999, <https://www.selling-stock.com/Article/impact-of-major-agency-consolidation>. Since Getty Images was founded in 1995 with the purchase of Tony Stone Images, they have steadily bought up major stock agencies. Significant acquisitions include the purchase of the Image Bank from Eastman Kodak in 1999, Visual Communications Group in 2000, and Jupiterimages in 2008. Corbis Corporation, founded by Bill Gates in 1995 with the purchase of the Bettmann Archive, was Getty’s largest rival, acquiring agencies like the Stock Market in 2000, before the Visual China Group, a partner of Getty Images, acquired Corbis in 2016.

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