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Matters of substance: materiality and meaning in historical records and their digital images

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Historical records embody the contexts of their creation and use through time, but their materiality may be perceived as a neutral background to their content. Analogue records are increasingly available online as digital images, and these images may be perceived as surrogates with evidential value equivalent to the source document. This paper presents a set of prompts for developing awareness of materiality in analogue records, and considers how these prompts might be applied to digital images of analogue records. The paper concludes with suggestions for how archives might acknowledge and mitigate some of the limitations of these representations.

Keywords: archival research; digitisation; materiality

Introduction and background

Archival records, whether born digital or analogue, are material culture; they are material traces of events and actions arising from within particular historical contexts. Historical records are rooted in the personal and social circumstances surrounding their creation and they are physically embodied in the materials that constitute and support the written text or images. Records are products of their times and every physical component has a complex socio-cultural and technological history; they have been participants in events in the histories of science, technology, industry and economics. The sizes, shapes and weights of records structure physical interactions between records and their users, and changes in their presentation and physical condition may provide evidence of their histories of use and stewardship.

Materiality, the material expression of human ideas, is therefore perhaps the most primary of sources regarding the circumstances of the records' creation, but the materiality of archival records has received little analysis in either archival or historical studies.[1] As Maryanne Dever observes, 'dominant practices for literary and historical research conducted within archival collections privilege the texts found on documents and pay considerably less heed to the material supports of those works and markings, as though papers and pages can be understood as neutral containers or platforms for the transmission of such texts'.[2] Both archivists and users of archives can benefit from a greater awareness of materiality and from developing 'material literacy' skills, akin to media literacy or visual literacy skills.[3]

Digital images of historical records are increasingly available online, and these representations might be perceived as surrogates with equivalent evidential value to the

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physical source document.[4] Digital images of analogue records are undeniably valuable resources, but how much of the materiality of the source record can they capture? Archivists are increasingly questioning and challenging the perceived neutrality of these representations. Joanna Sassoon has long advocated for more attention to the materiality and uses of archival photographs. She argues that significant meaning is lost or distorted in the process of digitising archival photographs: the change in format creates 'new discursive systems which may obliterate previous meanings', resulting in the 'dematerialising, dehistoricising and decontexualising' of the historic photographs as they are conflated with their digital images.[5] Archival institutions therefore have a responsibility to maintain the authenticity and evidential value of records, which requires consideration of their provenance, custodial history and interrelationships with other records. Sassoon warns that 'digitization encourages that shift from the contextual to image content',[6] and challenges archives to strive to maintain archival integrity in digitised images of their holdings.

While Sassoon focuses on photographs, Geoffrey Yeo reflects on authenticity and recordness and how they may apply to digitised analogue records in any media, further emphasising the editorial or interpretive nature of archival functions in identifying and preserving 'significant properties' of records. Since any feature of a record might be meaningful to some user at some time, decisions regarding digitisation require analysis and transparency on the part of the responsible institution.[7] Providing a broader user perspective, Alexandra Chassanoff reports that academic historians are very concerned about the completeness and quality of digital surrogates and prefer to have access to the original records. She notes that many desire more information about how archivists select records for digitisation and explanations of how they are processed or edited. Chassanoff calls upon archivists to investigate the 'factors and qualities that influence historians' interactions with primary source materials'.[8]

This paper presents a set of prompts for developing awareness of materiality in analogue records, and applies them to two collections of personal records to consider how these prompts might be used both by archivists and researchers when working with digital representations of analogue records. Additional visual representations of analogue images on other institutional websites are briefly considered to provide a broader context of current practice. The paper concludes with suggestions for how archives might acknowledge and mitigate some of the limitations of these representations to improve their research value.

Records examination prompts

A systematic examination of materiality in the context of digitisation can highlight differences and potentialities. I have been teaching a seminar on Material Literacy for the University of Manitoba Archival Studies Program, intended to focus the attention of students on the physical composition and construction of records, and to have them consider what aspects of records might be important to preserve given the potential consequences of their choices for future users of those records.

A form with the following prompts is used to record the students' observations:[9]

- record examined;
- material composition (what is it made of, describe some physical qualities – colour, texture, opacity and so on);

- physical construction, presentation (how do the materials go together physically and conceptually);
- technology related to materials and/or construction (what tools were/are used in creation);
- your personal response to sensory qualities of materials, construction (what messages are you receiving visually, and through smell, touch or sound);
- signs of damage or deterioration (colour change, dirt and so on); thoughts on when or why it occurred;
- signs of changes made (annotations, erasures and so on); thoughts on when or why they were made;
- how has this record functioned in the past, and how does it function now? (shifting functional contexts).

These prompts attempt to differentiate physical components and emphasise how creators and custodians of records fit into a larger socio-cultural context.[10] While developed for use with analogue records in their original forms, for this study they have been used as a starting point for considering materiality in two sets of analogue records and in digital representations of the same records. Images tend to be privileged for digitisation projects, so collections of mixed media and textual records were chosen for examination. The selection was further limited to small collections of personal records from two different archives that were easily accessible in their original forms and that I had not previously encountered. The digital images were viewed first to minimise the role of memory in interpreting the digital images. All of the digital images were viewed quickly to identify a sub-group of physically diverse images and to identify possible challenges in their representation. The prompts were applied to the digital images; then the source records were consulted to verify the observations. All of the original records in the fonds were viewed to determine whether the digital images on the website reflected the whole collection and whether other significant challenges or issues in representation could be identified.

Case studies for prompts

The first group of records are from a 1936 trip from Montreal, Quebec to Churchill, Manitoba taken by Gertrude Perrin aboard a supply ship making stops at northern Hudson's Bay Company posts.[11] The listings for this fonds provide one entry for a scrapbook, travel diary and folder of 'miscellaneous records', and a separate entry for each of the 92 photographs in the scrapbook, identified by their full captions.[12] Digital images of most these items have been posted at the Archives of Manitoba's website in the context of a virtual exhibition on these records.[13] The second group of records is World War I correspondence related to Archie Polson from beginning training with the 2nd Divisional Machine Gun Corps in 1916 to his death in a military hospital from infection following combat injuries in 1917.[14] The physical description indicates that the fonds consists mainly of correspondence, but also notes that there are 21 photographs, some postcards and a paybook.[15] There is a direct link from the fonds description to the digitised images.[16]

The limitations of digital representation of analogue records were quickly evident when considering the prompts regarding composition, construction, presentation and technology, which require looking intensely at the physical qualities of the items. For instance, identifying whether the typewritten pages of poetry in Perrin's scrapbook are

originals or carbon copies might indicate that a poem may have been written specifically for Perrin or that copies were made for all of the passengers. Unfortunately, the image resolution for these items is too low for the letters to be fully in focus for screen reading. Options for zooming or for opening a higher resolution image were not available at either archives website and, although the resolution was generally good enough to read written text easily and to see the subjects in photographs well, it was not always adequate for identifying writing media as graphite or ink, or for identifying whether a dark spot at the edge of a photograph was a stain or the shadow of a paper fragment from a previous mounting. The image of the cover of the scrapbook suggests a mottled pixilated texture quite different from the embossed leaf pattern of the source. Pressure-sensitive tape is visible in a digital image of a letter from Polson, but examination of the original is required to identify it as a vinyl-based tape and therefore likely added after about 1960.

Images of records from both of these fonds are cropped over the edges of the items. Images of the Perrin scrapbook cover, a map and one letter appear to have crooked, uneven borders suggesting that either they were cropped crookedly, or that Perrin and her fellow travellers purchased oddly shaped printed goods. Images of the Polson letters suggest that he and his correspondents routinely wrote to, or over, the edge of a page when most people might modify their use of space to complete the word. The source records have complete words and spaces at the edges of the pages, indicating a more conventional approach to written communication.

The cropping of edges also creates uncertainty regarding the size and shape of pages. Commercially produced papers and stationery tend to come in standard sizes, and non-standard uses and customisation of these sizes may be significant. The absence of a scale limits understanding of the size of the pages and interpretation of their intended use. An image of an envelope that shares a thumbnail folder with a photograph postcard and Polson's list of the men depicted[17] suggests that it contained the other items. The thumbnail folders show the items all roughly the same size, but the envelope is actually too small to have held the postcard. Matching up components that are out of order is also easier when the sizes of the envelopes, pages and their fold lines can be determined. The digital image of Polson's last letter is shown as two pages that end abruptly at the end of the second thumbnail image folder of outgoing correspondence.[18] The original has been reunited with the next 11 pages that were written on smaller paper and appear in the fifth thumbnail folder of outgoing correspondence.[19] Page sizes also imply potential uses of a record format: if a travel diary is 'pocket' size it would lend itself to being carried with the writer and for more spontaneous additions to be made than if it were large and stayed in the cabin throughout the voyage.

The absence of a colour checker for colour calibration creates uncertainty regarding the accuracy of the colour of the representations.[20] Digital images of pages from a letter from Polson to his brother Wyatt have six numbered pages with each even-numbered page appearing to be written on much darker coloured paper and written in darker ink, but the source letter is written on both sides of three identical sheets of paper in one ink. The digital images of the two letters to Perrin appear to be on similar colour and quality paper,[21] but the source letter from William Gibson is written on thin, inexpensive, lithographically printed business stationery torn from a perforated pad, and the letter from Alice Tallman is on pale yellow custom-engraved stationery printed in brown ink.[22]

Writing papers that are strong and stiff are often coated with heavier size that reduces ink permeability and produces a crisp rattling sound when the pages are manipulated. The variety of stationery from military sources that Polson used to send letters

to his family is robust and opaque relative to the softer, coarser paper available to him at the hospital. The blind embossed hotel stationery used by an English colleague to write to Polson while in hospital is noticeably whiter and of finer quality. Letters to Polson from Canada tend to be short and written on thin, light-weight paper, while the letters he sent home are mainly written on only one side of many sheets of heavier paper; this difference suggests that his family might have been concerned about costs or deliverability of their letters, while the cost of sending mail home was less – or less important to Polson. These sensory clues in the texture, opacity, weight and stiffness of papers are barely visible in the digital images.[23]

Damage or deterioration are signs of events in the life of the records and can provide insight into provenance and custodial history. Cropping the page edges obscures the presence of tears or creases that indicate where, and how many times, a page was folded (and therefore which pages may have been in a envelope together). A letter from Polson to his mother written while in hospital is the last letter home in the fonds and it has substantially more wear along its folds than the other letters, suggesting it was reread more often than his earlier correspondence.

There has been no attempt to show the three-dimensionality of the records – the thickness of the stack of pages that make up a letter, or of the bound structures of the travel diary and scrapbook. The direction of the scanner or photographic lighting flattens and obscures some of the surface phenomena. The reflection from a glossy adhesive is not visible in the digital image of the scrapbook photographs, but its gloss and colourless-ness is a clue to the age of the adhesive and therefore to when the scrapbook was assembled. What appeared to be a brown stain in the diary was found to be adhesive residue adjacent to skinned paper, where something had been torn out of the diary, but the shiny crustiness of the adhesive and thin fuzziness of the skinned area are not visible in the digital image. Embossed words on letterhead stationery and the grooves intended to improve the flexibility of the scrapbook pages are hidden. Watermarks in the pages are invisible, preventing questions such as why Canadian stationers were buying paper from mills in the United States.

These two case studies demonstrate that the prompts highlight challenges for researchers using digital representations of records. These prompts relate to image resolution, cropping, size and colour, texture and sensory properties, but they are limited in their capacity to address a number of other significant issues encountered in consulting these digital images.

The researcher working with records in their original forms has additional sensory information regarding the current physical context of the records, including their arrangement and completeness. Working with source records allows simultaneous consideration of the whole of a small fonds or series, as well as of its individual components, so that interrelationships between documents can be explored (for instance, whether a particular paper fits into an envelope, or whether two papers are the same or different). The presence of additional materials and non-text information on ‘blank’ pages is readily apparent, and mediations in ordering and arranging the records are more evident. Researchers working with digitised images are limited to the visual clues the archives have selected.

No guide describing the archives’ procedures for selection, image capture or editing is accessible from the image pages for either the Perrin or Polson fonds. It is therefore difficult to interpret with certainty whether one or both sides of a page has text, whether blank pages are present or just did not support images or text, how the oversized components actually fit within the scrapbook and whether everything in a fonds has been

imaged or not. Both fonds had additional textual or image material that was not digitised and was not identified as present, providing a false sense that the digital images reflected the whole of the fonds.

The navigation between documents and between pages of documents in the digital interface plays a significant role in the users' experience. The thumbnail folders of Polson's correspondence provide a means of looking at several items simultaneously and of moving between them out of sequence, but the letters are not numbered and, where there are many pages that look the same in the thumbnail view, it is fortunate that Polson provided large page numbers. The Perrin images offer only 'next' and 'back' as navigation tools. The first image of the scrapbook is the cover and the 'next' image is the first page of photographs, which implies that it may represent the inside of the cover, but the appearance of binding holes on the left side of the page suggests that it is the right side of the following page. The scrapbook pages are unnumbered and must be viewed in sequence.

To address these issues, the following are suggested as additional prompts for digital representations of analogue records:

- Completeness – how do you know what has been left out (items or components of a presentation such as mats and frames)?
- Navigation – how do you move between images and find specific items?
- Physical arrangement – how do you know how the images fit together (fronts and backs of pages, facing pages)?

A final prompt is proposed to capture unforeseen circumstances and to provide another way of thinking about the limitations of working with digital images:

- What would you do if you could handle the original?

Additional representations

To further contextualise these case studies, it is useful to consider how issues of integrity have been managed in other visual representations of analogue records. Prior to the age of digitisation, microfilm imaging processes were developed to address concerns of authenticity, reliability and the legal admissibility of surrogate images. Cooperative programs to microfilm library and archival material led the broad standardisation of procedures for institutions doing the work in-house or working with vendors. The *RLG Archives Microfilming Manual* (1994) provides guidance regarding matters such as item placement for each frame, background 'copyboard' colour selection, sequencing of items, and 'targets' providing textual and graphic metadata to be filmed with the records. For instance, the first image on each reel is a START target and the last image is END OF REEL, with additional targets identifying the contents, restrictions and further information that a user could not determine from the reel alone, such as the omission of blank pages.[24] When dealing with 'mutilated and/or missing portions' of records, the camera operator is directed to 'target appropriately and back the item with black to ensure the hole and/or mutilated area is clearly visible'.[25] An appendix is provided with Strategies for Microfilming Scrapbooks and Layered Objects, which advises filming an image of the page as it appears before manipulating and filming the components in sequence.[26]

To consider how other archives address issues of usability and integrity for their digital representations of analogue records, digitised textual records were searched in some large institutions with significant archival holdings. The Library of Congress home page has a prominent link to digital collections. Many of these have a Building the Digital Collection page outlining the project details. For the Hannah Arendt collection, for instance, this page describes the scanning specifications, preparation of the records and cropping conventions; it also notes how omitted pages are identified and how fragments and overlays have been imaged, and the use of greyscale and bi-tonal imaging.[27] The lists of items in the virtual folders identify what will display off-site or not (because of copyright issues), so it is clear which portions of the collection are unavailable to off-site researchers.[28] Each digital image includes an option to open a higher resolution image, which allows for a zoom function.[29] This image allows navigation to the next and previous pages of the folder, or the desired image page number may be entered. The image backgrounds have been cropped to leave a narrow black or white border around the edges of the items. In the Arendt collection all the images viewed are greyscale, and have a linear surface pattern that extends over the background and is clearly not part of the record.

The National Archives of Australia provides links to 'newly scanned records'. The Royal Australian Air Force Personnel folders of Non-Commissioned Officers viewed were displayed in colour with a very thin margin of the black or white background visible around the edges of the items. Clicking on an image allows one to zoom and scroll around it. A 'multiple pages' option presents thumbnail views of the complete folder contents in sequence. The 23-page folder for Maysie Agnes Gero included the blank reverse of the folder cover page, a blank form page at the end of the folder, and an identification photograph along with its envelope and a piece of blank film, suggesting that no item had been deemed too insignificant to include. While there was no colour checker visible, the variety of papers and inks in the folder were clear and distinct.[30]

The Advanced Search screen for the National Archives and Records Administration's Online Public Access database provides Archival Descriptions with Digital Objects as a search option. Clicking on a folder image from the John F Kennedy Assassination Collection brings the viewer to the folder contents. A large image of the chosen page appears at the top of the screen with the zoom and image navigation features, as well as options to download the image or to download a PDF version of the content of the whole folder. The total number of pages in the folder and the current page number are indicated for each image, and thumbnails of five adjacent pages are visible under the main image. Many pages had clear handwritten or stamped annotations, such as for changes in the classification of the material. Images of the back of the folders are included, as are routing slips and annotations on backs of pages.[31]

Shifting from public archives to another kind of research collection, Livingstone Online is a digital repository of the medical and scientific correspondence of David Livingstone held in collections located around the world. The images therefore come from a variety of sources, but are all presented through a common interface that includes identification of the fronts and backs of various pages (that is, pages numbered 2 r[ecto], 2 v[erso]). Some images of letters include a simple white/grey/black scale with centimetres marked along the side.[32]

The precedent of microfilming and the practical examples from large public archives suggest some practices to enhance the representation of material evidence, thereby enhancing the value of digital images to researchers. The following practices are recommended:

- Ensure that resolution is at least good enough to match the naked-eye legibility of the source records.
- Show whole pages and backs of pages, or explain why and when these are not provided. Show the whole as it appears, before providing additional images of details or layers.
- Alterations, deformations and damages should never be hidden. Present enhanced images of faded content, for instance, as additional linked views.
- Strive for accuracy in depicting colour and size relationships. At minimum, ensure that the white balance is correct to avoid the same paper appearing differently from image to image. Consider including at least a reduced set of colour patches integrated into a short ruler at the edge of the images.
- Indicate the physical and functional arrangements and interrelationships between the representations and the source records by showing thumbnails or text links to the other material from the same document or folder.
- Provide a written statement to contextualise the selection of the records and production of the digital images, and acknowledge the limitations of images to represent the three-dimensional qualities of records and their sensory evidence.

Conclusion

This paper has introduced some simple prompts for archivists and researchers to think about materiality in historical records and their images, and comments, suggestions and further development of these ideas are welcomed. Interaction with records through sight, sound, smell and touch imparts first-hand knowledge of historic technologies, and puts the researcher into the place of the creator and previous users of records. Access to archival records in their original forms enables gathering of primary evidence of how the records were created, and continue to be used, through observation of the physical materials, their construction and condition. Those who have access only to an image of a record have significantly less access to its materially manifested evidence than those who can use the source records, so it is essential for archives to consider the integrity of the digital representations on their websites. By developing material literacy skills, archivists and archives users can more fully understand the individual and societal contexts that produced records (or successive representations of those records), and consider how different representations of records shape both the questions that can be asked of the records and the stories they can tell.

Endnotes

1. For a detailed analysis of shifting materiality and meaning in the case of manuscript, printed and electronic versions of a fifteenth-century treatise, see Bonnie Mak, *How the Page Matters*, University of Toronto Press, Toronto, 2012.
2. Maryanne Dever, 'Provocations on the Pleasures of Archived Paper', *Archives and Manuscripts*, vol. 41, no. 3, November 2013, p. 176. To my knowledge, this paper is the first instance in mainstream archival literature of a critical discussion of a user's experience of records in their original forms.
3. For more comments on material literacy, and how archival mediations can shape records and their uses, see Ala Rekrut, 'Material Literacy: Reading Records as Material Culture', *Archivaria*, vol. 60, Fall 2005, pp. 11–37 and 'Connected Constructions, Constructing Connections: Materiality of Archival Records as Historical Evidence', in *Archival Narratives*

for Canada: Re-Telling Stories in a Changing Landscape, Kathleen Garay and Christl Verduyn (eds), Fernwood Publishing, Halifax, 2011, pp. 135–57. A discussion of digital materiality and digital forensics is beyond the scope of this paper, but two good examples of this literature are: Matthew G Kirschenbaum, *Mechanisms: New Media and the Forensic Imagination*, MIT Press, Cambridge, MA, 2008 and Matthew G Kirschenbaum, Erika L Farr, Kari M Kraus et al., 'Digital Materiality: Preserving Access to Computers as Complete Environments', in *Proceedings of iPres 2009, The Sixth International Conference on Preservation of Digital Objects*, San Francisco, CA, 5–6 October 2009, pp. 105–12, available at <*http://escholarship.org/uc/item/7d3465vg*>, accessed 24 July 2014.

4. The question of whether digital images of analogue records should be considered primary or secondary sources is beyond the scope of this paper.
5. Joanna Sassoon, 'Photographic Meaning in the Age of Digital Reproduction', *LASIE (Library Automated Systems Information Exchange)*, December 1998, p. 13.
6. Joanna Sassoon, 'Photographic Materiality in the Age of Digital Reproduction', in *Photographs Objects Histories: On the Materiality of Images*, Elizabeth Edwards and Janice Hart (eds), Routledge, London, 2004, p. 195. See also work by Joan Schwartz, most recently 'The Archival Garden: Photographic Plantings, Interpretive Choices, and Alternative Narratives', in Terry Cook (ed.), *Controlling the Past: Documenting Society and Institutions: Essays in Honor of Helen Willa Samuels*, Society of American Archivists, Chicago, 2011, pp. 69–110.
7. Geoffrey Yeo, '"Nothing is the Same as Something Else": Significant Properties and Notions of Identity and Originality', *Archival Science*, vol. 10, no. 2, 2010, pp. 85–116.
8. Alexandra Chassanoff, 'Historians and the Use of Primary Source Materials in the Digital Age', *American Archivist*, vol. 76, no. 2, 2013, pp. 470–72.
9. This form may be used for separate units of a record (for example, single page of an album), a whole record or a logical group of similar records, as appropriate.
10. The examination could be deepened or broadened to suit different research needs, such as using instrumental analysis of the chemical make-up of the components. See for instance Kathryn M Rudy, 'Dirty Books: Quantifying Patterns of Use in Medieval Manuscripts Using a Densitometer', *Journal of Historians of Netherlandish Art*, vol. 2, nos 1–2, 2010, available at <*http://www.jhna.org/index.php/past-issues/volume-2-issue-1-2/129-dirty-books*>, accessed 28 February 2014.
11. Archives of Manitoba, Hudson's Bay Company Archives, Gertrude Perrin fonds, Accession HB2008/004.
12. Archives of Manitoba records are searchable through the Keystone Archives Descriptive Database, available at <*http://pam.minisisinc.com/pam/search.htm*>, accessed 28 February 2014.
13. Available at <*http://www.gov.mb.ca/rearview/perrin/index.html*>, accessed 28 February 2014.
14. University of Manitoba Archives and Special Collections, Archie Polson fonds, A.00–16.
15. Available at <*http://www.umanitoba.ca/libraries/units/archives/collections/rad/polson.html*>, accessed 28 February 2014.
16. Available at <*http://www.umanitoba.ca/libraries/units/archives/canada_war/polson/website/index.shtml*>, accessed 28 February 2014.
17. Available at <*http://www.umanitoba.ca/libraries/archives/canada_war/polson/website/archie/thumbnails.shtml*>, accessed 28 February 2014.
18. Available at <*http://www.umanitoba.ca/libraries/archives/canada_war/polson/website/Folder%205/thumbnails.shtml*>, accessed 28 February 2014.
19. Available at <*http://www.umanitoba.ca/libraries/archives/canada_war/polson/website/Folder%203/thumbnails.shtml*>, accessed 28 February 2014.
20. A colour checker can be used to find the best colour match in a digital image file at the time of the image capture, and for calibrating viewing technologies, such as computer screens, projectors and printers, to render the image file more accurately.
21. Available at <*http://www.gov.mb.ca/rearview/perrin/homeagain.html*>, accessed 28 February 2014.
22. Tallman would have likely been influenced by the popular practice of the day. This paper complies with Miss Manners's recommendation that a 'basic, tasteful [stationery] wardrobe' would include 'a double sheet, plain or with a monogram, for a woman's personal letters of

various degrees or formality'. Manners indicates that she uses 'cream double-sheeted paper with her monogram engraved in brown'. Judith Martin, *Miss Manners' Guide to Excruciatingly Correct Behaviour*, Warner Books, New York, 1982, pp. 505–06.

23. Given that these records were stored for extended periods since their creation, detectable odours would be associated with periods of custodianship. In this case no distinct odours were readily discernable.
24. Nancy E Elkington (ed.), *RLG Archives Microfilming Manual*, Research Library Group, Inc., Mountain View, CA, 1994, p. 142.
25. ibid., p. 58.
26. ibid., p. 134.
27. Available at <*http://memory.loc.gov/ammem/arendthtml/build.html*>, accessed 28 February 2014.
28. See for instance <*http://memory.loc.gov/ammem/arendthtml/mharendtFolderP02.html*>, accessed 28 February 2014.
29. See for instance <*http://memory.loc.gov/cgi-bin/ampage?collId=mharendt_pub&fileName=02/020220/020220page.db&recNum=0&itemLink=/ammem/arendthtml/mharendtFolderP02.html&linkText=7*>, accessed 28 February 2014.
30. Available at <*http://soda.naa.gov.au/record/4842981/1*>, accessed 28 February 2014. While a review of digitisation case study literature is beyond the scope of this paper, it should be noted that the State Records Authority of New South Wales, for example, hosts a site for case studies of digitisation projects undertaken by NSW government agencies at <*http://www.records.nsw.gov.au/recordkeeping/advice/digitisation/digitisation-case-studies/digitisation-case-studies*>, accessed 24 July 2014.
31. See for instance the folder for Kennedy, John F Mrs, available at <*http://research.archives.gov/description/7460636*>, accessed 28 February 2014.
32. See for instance the letter to John Arundel, 5 September 1837, available at <*http://www.livingstoneonline.ucl.ac.uk/view/list.php*>, accessed 28 February 2014.